094034

1998 ASSESSMENT REPORT

(GEOLOGY, GEOCHEMISTRY, GEOPHYSICS, DRILLING)

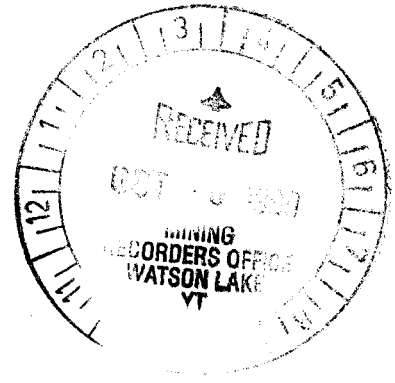
on the

FOX PROPERTY

FOX 1-66; 68-93

FOR WORK CARRIED OUT BETWEEN JUNE 15- SEPT. 2, 1998

YUKON TERRITORY
NTS 105F/10
61°32'N 132°35'W



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Vancouver, B.C., Canada
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Peter Holbek, P.Geo.
March 21, 1999

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This report has been examined by the Geological Evaluation Unit under Section 53 (4) Yukon Quartz Mining Act and is allowed as representation work in the amount of $ 29,600.00 .

M.P.B.

for Regional Manager, Exploration and Geological Services for Commissioner of Yukon Territory.

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1. INTRODUCTION

This report describes work completed on the Fox property during 1998. The property, consisting of 92 claims and covering 1,923 hectares, was optioned from Cominco Ltd. The property surrounds Atna-YGC's Wolf property with one or two claim units and extends for approximately 7 kilometres to the northwest of the Wolf property. Stratigraphy on the Wolf property continues onto the Fox property and is prospective for hosting zinc-silver-lead volcanogenic massive sulphide deposits similar to the Wolf and MM deposits.

The Fox claims are underlain by Mississippian age felsic volcanic rocks and related sediments. Although the stratigraphy hosting the Wolf deposit extends onto the Fox claims, a series of facies changes and possible structural complexity make it difficult to follow mappable units from one property to the other. Exploration work was concentrated in the area immediately northwest of the Wolf property. Prospecting and reconnaissance style geology was conducted in the northwesternmost Fox claims and although a few massive pyrite showings of possible volcanogenic massive sulphide (VMS) affinity were found, in general the geology appeared to be less prospective for hosting VMS mineralization. Previous contour soil lines by Cominco in this area also attest to a more limited exploration potential.

The purpose of the 1998 exploration program on the Fox claims was to determine the potential for hosting significant mineralization. Results from the program were mixed with no significant mineralized intersections obtained in four drill holes. The discovery of the East Slope mineralization on the Wolf property increases the attractiveness of the overall belt but particularly the Fox claims that are located immediately to the southeast of the Wolf property.

1.1 LOCATION AND ACCESS

The Fox claims are located southeast of the Hoole River on the Mount Placid and Mount Resistance 1:50,000 scale topographic map sheets, NTS 105G/5 and 6, centered at approximately 61°32'N 131°31'W (UTM 6805000 N, 364000 E), (Fig.1.1). During the 1998 field season, access to the claim group was gained by helicopter based in Ross River, 90 km to the north, but working out of the Ketza River mine site located approximately 35 km to the northwest.

The claims cover sub-alpine to alpine terrain within the St Cyr range of the Pelly Mountains. Elevations on the claim group range from 1,220 to 1,830 metres. The majority of the claim block is covered with a thin veneer of talus or colluvium. Overall outcrop exposure averages about 10%.

1.2 CLAIMS

The Fox property consists of 92 contiguous mineral claims covering approximately 1,923 hectares (Fig. 1.2). The property is owned by Cominco Ltd. and is under option to Atna Resources Ltd. who can earn a 49% interest in the property by completing $1 million in exploration expenditures over a four year period. Atna can earn an additional 31% in the property if Cominco declines to participate upon completion of the initial option phase. The claims are recorded in the Watson Lake Mining District as follows:

Table 1: Claim Data

Name	Grant number	Expiry date*
Fox 1-66	YB16912-YB16977	April 6, 2003
Fox 68-89	YB16979-YB17000	April 6, 2003
Fox 90-93	YB33001-YB33004	April 6, 2003

* with acceptance of this report.

1.3 EXPLORATION HISTORY

Mineralization was first discovered in the area by Newmont in 1955 but only cursory work was carried out. Newmont returned to the area twice, first in 1966 when they staked the FH claims over what is now the Wolf property, and again in 1976 when they staked the Joe claims over the same area. Newmont walked a cat into the property and conducted trenching which uncovered a number of barite +/- zinc and lead occurrences. Newmont drilled three holes, one of which intersected 1.4 metres of 5.6% zinc and 27 g/t silver. The claims were allowed to lapse.

Amax carried out a reconnaissance mapping and geochemical program in 1982 and demonstrated that the geochemically anomalous stratigraphy continued over a strike length in excess of 7 kilometres. In 1990, both Cominco and Archer Cathro and Associates restaked the Joe property. The Archer Cathro claims, staked on behalf of YGC Resources Ltd. were staked just prior to the Cominco claims and form the Wolf property, now a 65:35 joint venture between Atna Resources Ltd. and YGC Resources Ltd. Cominco staked the Fox claims around the Wolf claims and staked the rest of the belt 16 kilometres to the north, as far as the McNeil River. Cominco took an option on the Wolf property and carried out geological, geochemical and geophysical surveys on the Fox and Wolf claims, with most of the focus on the Wolf area during 1990 and 1991.

Cominco relinquished its option on the Wolf property and did no further work on the Fox claims. Atna optioned the Wolf property from YGC in 1994 and carried out work programs in 1995 and 1996 including three diamond drill holes on the north end of the property. In 1997, Atna carried out a program of geological mapping and stratigraphic drilling to evaluate the potential of the claims to host volcanogenic massive sulphide

deposits. The fourth and final hole of the stratigraphic drill program intersected 25 metres of massive sulphide starting at a depth of 75 metres. The drill program was consequently extended and an additional 9 holes were drilled over an area of 500 by 300 metres, all of which intersected massive sulphide mineralization. These holes indicated a strong probability of defining a reasonable size but relatively low grade zinc-silver-lead massive sulphide deposit.

Following the success of the Wolf exploration program Atna embarked on a regional reconnaissance program which examined much of the Pelly Mountain Volcanic Belt for a distance of 70 kilometres to the north. This work led to the acquisition of a number of properties in the northern part of the belt. Pathfinder Resources Ltd. staked almost all of the southern part of the volcanic belt that was not already claimed as the Wolf or Fox claims, in the fall of 1997. The presence of numerous parties in the area permitted a jointly funded Aerodat helicopter-borne geophysical survey to be carried out, during the winter of 1997, on all of the southern part and selected parts of the northern belt. The Fox claims were optioned from Cominco by Atna in the spring of 1998.

1.4 1998 EXPLORATION PROGRAM

During the 1998 field season, geological mapping, soil sampling, Max-Min EM geophysical surveys and diamond drilling programs were carried out on the Fox claim block. The program began June 15th and was completed September 2, 1998 and was run in tandem with the Wolf exploration with both projects benefiting from shared logistical costs.

Approximately 20 square kilometres of the southern end of the Fox claims were mapped at 1:5,000 scale. Initially, it was deemed that stratigraphic units from the Wolf could be followed across the Fox claims but lack of exposure, facies changes and/or structural complexity rendered this a difficult task. The northern part of the claims were examined in reconnaissance fashion; general absence of similar stratigraphy to that hosting the Wolf deposit and the lack of anomalous geochemistry indicated limited exploration potential and no further work was done in the northern claim block. An exception to above is the extreme northwestern area of the Fox claims where "ore-sequence" stratigraphy may be present. This area was covered by detailed soil contour lines. J. Hunt (1999) from the Yukon Government carried out a regional mapping program on the southern part of the Pelly Mountain Volcanic Belt which covered part of the Wolf claims and most of the Fox claims.

A hip-chain and compass grid was established on the southern Fox claims. Approximately 24 kilometres of line were placed with line spacing at 150 metres and station spacing of 50 metres. The grid was run off a baseline and upon completion was mapped onto the 1:5,000 orthophoto. All stations were geochemically sampled with a majority of the sample media being talus fines.

A multi-frequency horizontal coplanar loop EM (Max-min) survey of the grid area was carried out over the later half of July by Delta Geoscience Ltd. A total of nineteen kilometres was surveyed.

Four diamond drill holes were completed for a total of 946.8 metres.

360000 mE

362000 mE

364000 mE

366000 mE

6806000 mN

6804000 mN

6802000 mN

FOX PROPERTY

WOLF PROPERTY

Fox 93 YB33004
Fox 92 YB33003
Fox 91 YB33002
Fox 90 YB33001
Fox 89 YB17000
Fox 88 YB16999
Fox 87 YB16998
Fox 86 YB16997
Fox 85 YB16996
Fox 84 YB16995
Fox 83 YB16994
Fox 82 YB16993
Fox 81 YB16992
Fox 80 YB16991
Fox 79 YB16990
Fox 78 YB16989
Fox 77 YB16988
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Fox 22 YB16933
Fox 21 YB16932
Fox 20 YB16931
Fox 19 YB16930
Fox 18 YB16929
Fox 17 YB16928
Fox 16 YB16927
Fox 15 YB16926
Fox 14 YB16925
Fox 10 YB16921
Fox 9 YB16920
Fox 8 YB16919
Fox 7 YB16918
Fox 6 YB16917

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	Fox Property
Date: 4/10/1999	**Claims & Sample Locations**
Author: PMH/RGW	
Office: VAN., B.C.	
Drawing: 1.2	
Scale: 1:25000	Projection: UTM Zone 9 (NAD 83)

0 250 500 1000
metres

094034
DwG ①



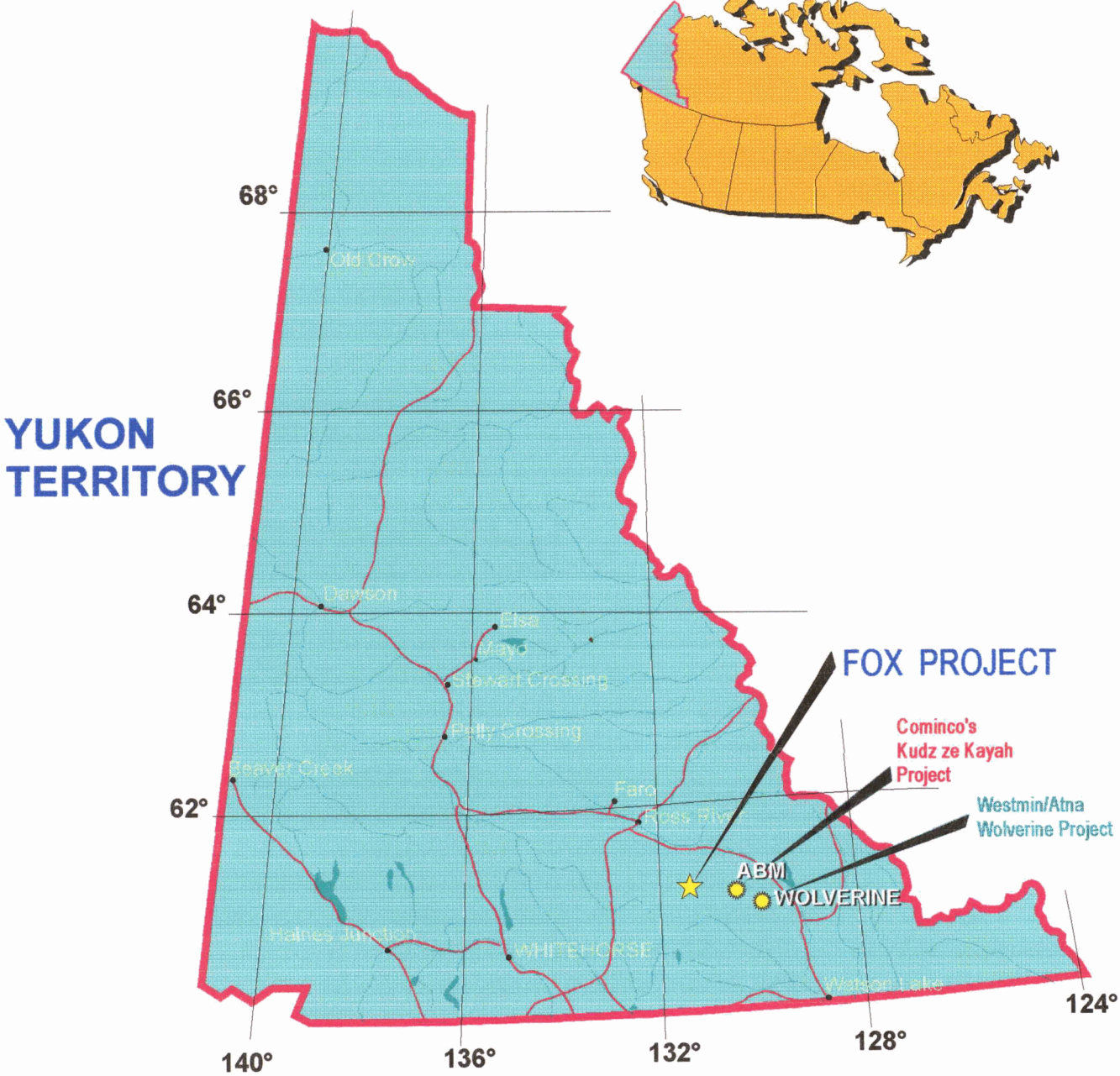
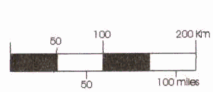


Figure 1.1

LOCATION MAP

FOX CLAIMS
PELLY MOUNTAINS REGION
YUKON TERRITORY



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2 GEOLOGY

2.1 REGIONAL GEOLOGY

The volcano-sedimentary rocks which host the Wolf and MM deposits as well as the Fox claims form a narrow arcuate belt that extends 80 kilometres along a northwesterly trend within the Pelly Mountains of the southern Yukon (Fig. 2.1). These rocks have been termed the Pelly Mountains Volcanic Belt (PMVB) by Hunt (1999) and are characterized by high potassium content and, locally, bedded barite and volcanogenic massive sulphide deposits and showings. The Pelly Mountain Volcanic Belt is early to middle Paleozoic in age and occurs within the Pelly-Cassiar Platform, considered to be part of ancestral North America (Tempelman-Kluit, 1977).

The tectonic framework for the Pelly Mountains area is described by Gabrielse and Yorath (1991), Templemen-Kluit and Blusson, (1977) and Gordey (1977) and is summarized below. The miogeoclinal sequence and related rocks which underlie much of the Pelly Mountains area are part of a large area about 70 km wide and 600 km long that is referred to as the Pelly-Cassiar Platform (PCP). To the northeast of the PCP during late Proterozoic through to Silurian time, a sequence of shallow water carbonates, tuffaceous shales and andesitic rocks were deposited on the western edge of ancestral North America in the Selwyn Basin and, to the south, in the Kechika Trough. The Cassiar Platform formed slightly outboard of, but parallel to the craton edge and consisted of a thick accumulation of volcanic rocks and related sediments upon which shallow water sedimentation, predominantly carbonate, took place until late Devonian time. Contemporaneously, shales were accumulating in the adjoining Selwyn Basin. During Late Devonian to Mississippian time, shale, greywacke and chert pebble conglomerate was deposited over much of the Cassiar Platform and Selwyn Basin having been derived from a westerly source, or from locally uplifted parts of the Cassiar Platform. Felsic igneous activity, including intrusion and volcanism, occurred locally within the Cassiar Platform, possibly within rifts or graben-like structures created by variable uplift and block faulting within the platformal rocks. Sedimentation resumed within sub-basins during the Upper Triassic.

Deformation of the Paleozoic rocks took place post-Late Triassic and consisted of compression and/or transpression along a northeasterly axis which resulted in northwesterly trending and northeasterly verging folds and southwesterly dipping thrust faults. The Anvil-Campbell Allocthon, part of the Omineca Crystalline belt, was emplaced during this event as a large thrust-sheet and is now preserved as local klippen on mountain ridges. An anastomozing system of steeply dipping, strike-slip faults related to movement along the Tintina Fault cuts the folds and thrust faults and extends for up to 20 kilometres southwest of the Tintina Trench. Late normal faults cross-cut earlier structures and divide the region into a number of panels which commonly represent different structural levels. Cretaceous intrusions develop thermal and structural aureoles in the western part of the Pelly Mountains. Metamorphism and degree of deformation

varies from block to block but generally increases in a westerly direction and varies from lower to upper greenschist facies.

The Pelly Mountains Volcanic Belt is composed of localized volcanic centers separated by basins in-filled with sediments and volcaniclastic rocks. The volcanic rocks are predominantly felsic but in some areas significant accumulations of andesite to basalt occur. The most common feature of the belt are flows, epi-zonal sills and small plugs of trachyte. The trachyte flows and/or sills are laterally very extensive, probably due to low magmatic viscosity caused in part by high alkali element content. Typically the trachyte contains significant amounts of pyrite which gives rise to extensive gossans. The trachytes are commonly cream coloured, with very fine to medium grained phenocrysts of feldspar and rare quartz and are locally massive, amygdaloidal or brecciated. Syenite intrusions have been noted at a number of locations within the PMVB (Mortensen, 1981; Morin, 1977) and are thought to be plugs which represent volcanic feeders. Although they may still represent volcanic feeders, drill data from the Wolf and Ice properties indicates that the syenite intrusions are sill-like in morphology.

The structural and stratigraphic relationships of the Pelly Mountain Volcanic Belt with other parts of the Pelly-Cassiar Platform are not always clear. In the southeastern part in the belt near the Wolf and Fox claims (Fig. 2.2), the PMVB rocks are separated from platformal carbonates and associated sediments by thrust, and possibly, steeply dipping normal faults. In the northeasternmost part of the belt, immediately northeast of the Ketza River Mine site, the volcanic sequence is very thin (+/- 100m) and is overlain by chert and chert pebble conglomerate and underlain by shale; both contacts appear conformable but are not well exposed. Both the shale and conglomerate are considered age equivalent with the volcanic rocks and have been mapped in conformable relationships by Gordey (1977). On the Fire(chzerpnough) and Tree claim area, the PMVB appears to conformably overlie, and in places be intercalated with, a relatively thick sequence of shales and minor greywacke. Similarly on the Mamu and Mat properties, adjacent to the McConnel River, volcanic rocks conformably overlie an extensive shale-greywacke sequence. On the Ice (BNOB) property, between the Tree-Fire and Mamu properties, the volcanic rocks are surrounded by an argillite-limestone sequence that appears to be continuous with the shale-greywacke sequence of the Fire property. Gordey (1977) describes a Siluro-Devonian assemblage of shallow water dolomite and platy siltstone which represent a stable marine carbonate bank environment, and are supposed basement for the PMVB. However the Siluro-Devonian siltstone are quartz bearing and tan weathering and do not seem to be a good match with the shales attached to the Pelly Mountain Volcanic rocks. Similarly, the younger Triassic sedimentary package has not been observed in contact with the PMVB. Consequently, there is little or no contact information that gives a clear indication of the tectono-stratigraphic environment in which the PMVB was deposited other than the nature of the rocks within the belt itself. The platformal setting on the continental margin, the high potassium geochemistry of the volcanic rocks, and the presence of bedded barite and volcanogenic massive sulphide deposits indicate that the Pelly Mountain Volcanic Belt

was likely deposited in a continental rift-type environment (Mortensen and Godwin, 1982). The coarse volcanic debris flows that overlie the Wolf deposit indicate a high energy environment consistent with a graben type structure. The rift would likely have a shale and/or limestone floor, probably of considerable thickness, and would likely have been in-filled with post-volcanic sediments.

2.2 PROPERTY GEOLOGY

2.2.1 GENERAL STATEMENT

The Fox property is underlain by rocks of the Pelly Mountain Volcanic Belt. In general, the rocks, particularly in the southeastern part of the property are similar to the Wolf property, that is, being comprised mostly of felsic pyroclastic rocks, intrusive to extrusive trachyte flows and sills and derived sediments and debris flows. The northwestern part of the property is fundamentally different in that although some of the same rock units from the southern part are still present they are no longer in the majority, and the character of the stratigraphy changes to one dominated by andesite flow rocks and sediments as opposed to felsic pyroclastic rocks. This change in stratigraphy may be due to a variety of factors that would include the presence of new volcanic centres, or possibly that the stratigraphy has been folded, with fold axes plunging gently to the southeast, thereby exposing younger (?) stratigraphy to the northwest.

Although the general geology of the Fox property is understood, the geology in detail is complex and only poorly understood. As with the Wolf property, surface mapping is difficult due to poor bedrock exposure, lack of distinctive and continuous marker units, alteration and surface weathering that obscures both primary and secondary rock textures. Rapid facies changes within the pyroclastic-epiclastic environment prevents outcrop to outcrop correlation with any certainty.

2.2.2 STRATIGRAPHY

The thickness of the Pelly Mountain Volcanic Belt (PMVB) rocks on the Fox property changes from approximately 900 metres, immediately north of the Wolf claims, to greater than 2 kilometres within a distance of 3.5 km north of the Wolf claims. This change in thickness is the result of the divergence of the two bounding thrust faults, which produces an increase in the number of geological units, possibly by structural repetition, as opposed to thickening of the known units. Stratigraphy, identified on the Wolf claims extends through the adjacent Fox claims, although with some significant differences; and, as mentioned above, stratigraphic changes are progressively more pronounced in a northwesterly direction.

A generalized stratigraphic section from the Wolf property is shown as Figure 2.3.

The most significant changes between the Wolf stratigraphy and that on the adjacent Fox claims include the following: there is no Monzonite on the Fox claims, the coarse grained epi-volcaniclastic rocks are, in general, more polymictic and better sorted on the Fox property, and additional felsic pyroclastic rocks occur between the upper plate carbonate rocks and the upper epi-volcaniclastic rocks (unit 3g). Descriptions of the stratigraphic units for the PMVB as observed on the Fox claims are given below.

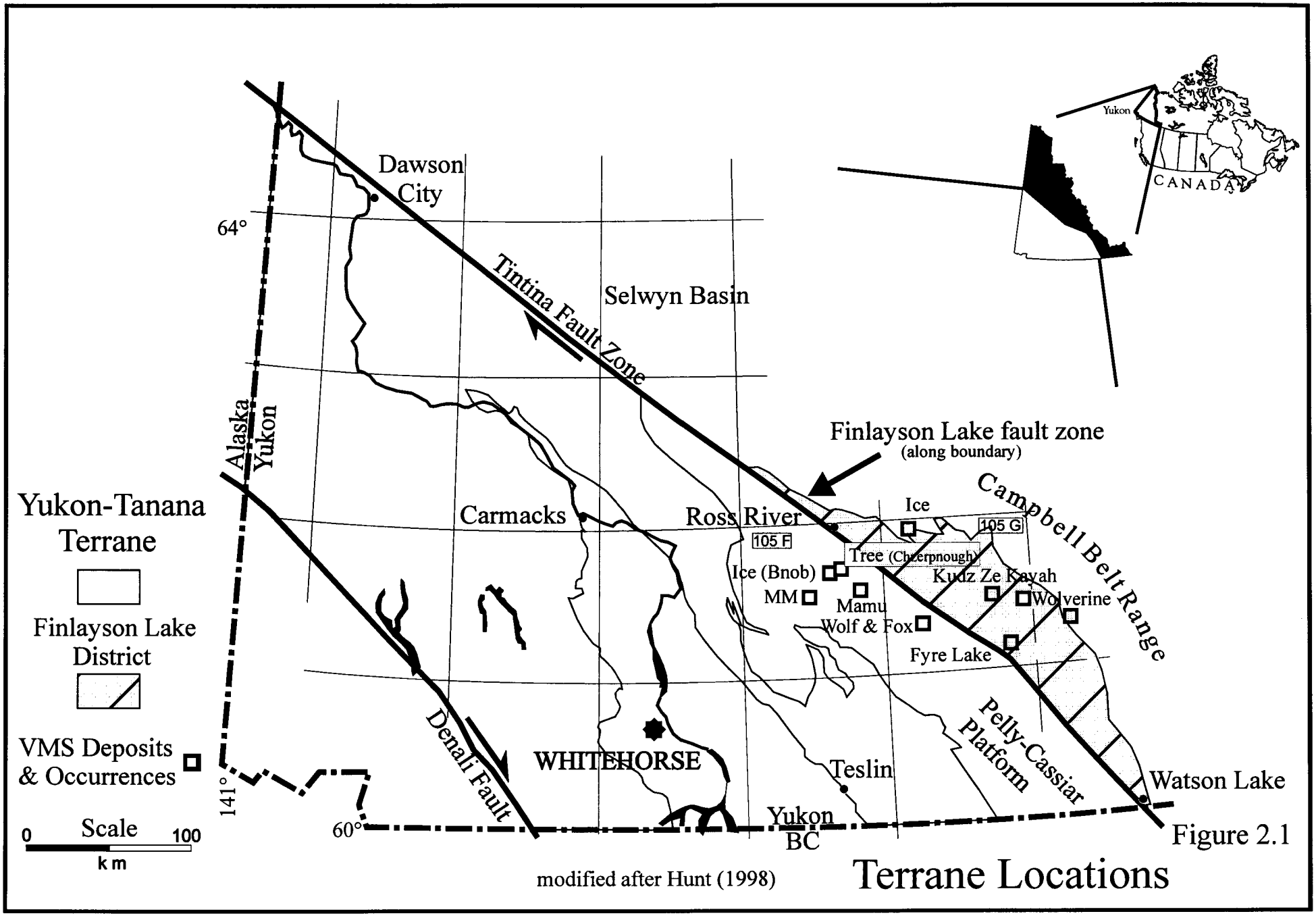
The lowermost unit of the PMVB, 3a, is poorly exposed within the grid area but consists of polymictic, moderate to poorly sorted debris flows and/or conglomerates interbedded with argillite, volcanic siltstone and greywacke. The more sedimentary aspects of this unit become more conspicuous in the northwesterly direction.

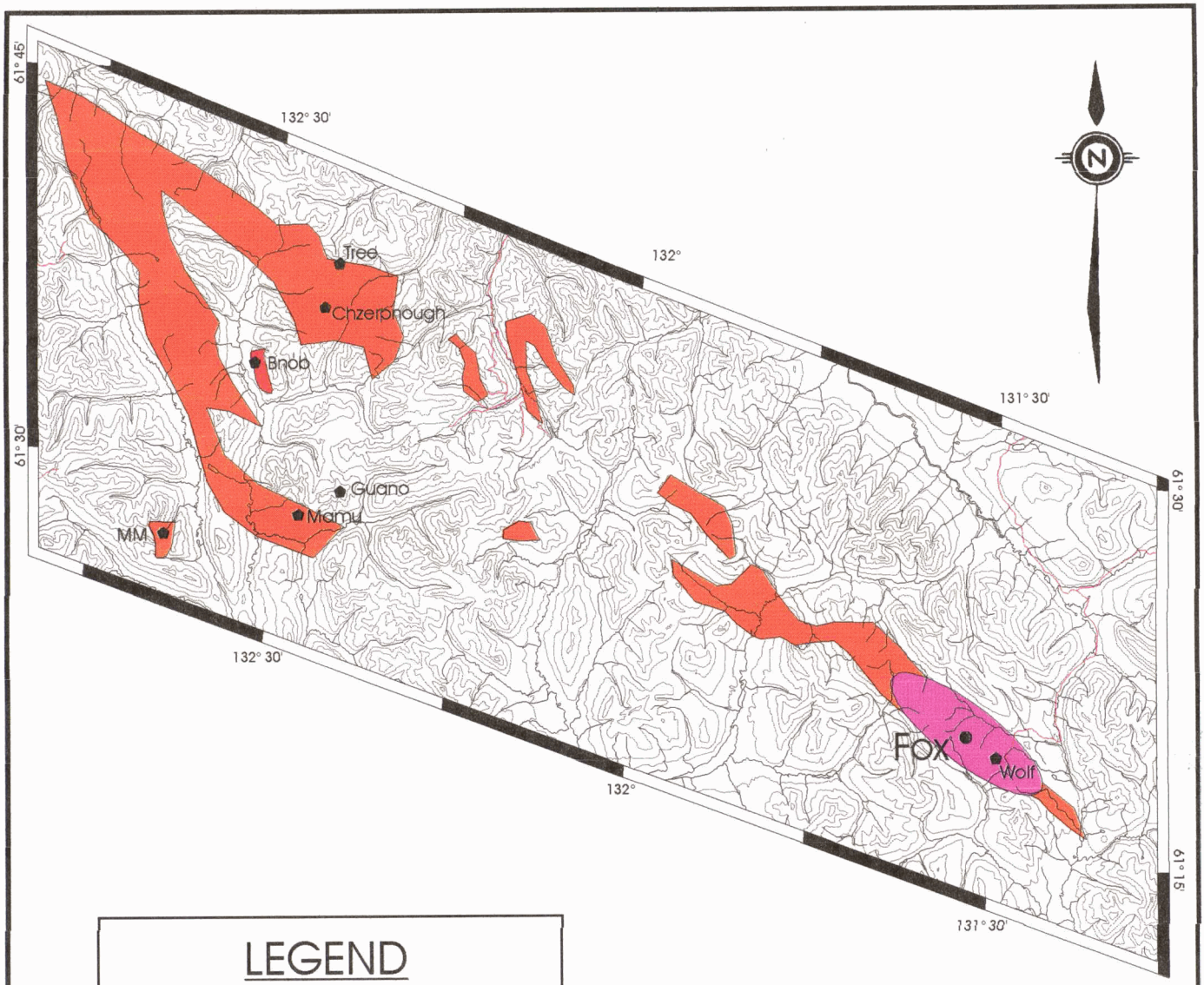
Unit 3b is marked by lapilli tuff and argillite units that are exposed on the lower part of the ridge immediately north of the Wolf claims. A possible correlation to the lower sulphide horizon is a pyritic argillite unit with up to 2 metres of semi-massive pyrite that is exposed in Cominco Creek (1700N, 2000E). This horizon appears to have an associated airborne anomaly and was drill tested by drill hole FX98-03 with insignificant results.

Unit 3c is distinguished by the a strong colour anomaly associated with a pyritic trachyte that forms the end of the ridge immediately north of the Wolf claims. Although a strong soil geochemical anomaly is associated with this unit (Section 3) no massive sulphide mineralization, in outcrop or float, was observed within this unit. However, significant lead-barium mineralization occurs at the base of the trachyte unit on the Wolf claims, immediately south of the Fox-Wolf claim boundary.

Units 3d, e, and f, which host the Wolf deposit to the south, are represented on the Fox property be a series of lapilli and crystal tuffs, ash tuffs, trachyte flows and/or sills, and minor argillite. Minor amounts of pyritic lapilli tuff and barite (in float) are observed on the northern side of the ridge immediately north of the Wolf property, but it is difficult to follow this stratigraphy with confidence to the northwest. Two zones of ferricrete (1500N, 2950E and 1300N, 2400E) likely mark the presence of a sulphide-rich part of this unit on the next ridge to the north.

Unit 3g is separated from the underlying felsic pyroclastic rocks (3e-f) by a monzonite sill and possible thrust fault on the Wolf property. Black to green matrix, poorly sorted polymictic debris flows with interbedded fine grained black sediments on the Fox property are likely the equivalent unit. However, on the Fox claims, this unit appears to be conformable with the underlying pyroclastic rocks, although in most places it is separated from the enclosing rocks by fine grained, purple-hued trachyte of variable thickness.


Yukon-Tanana Terrane
Finlayson Lake District
VMS Deposits & Occurrences
0 Scale 100
km
Dawson City
64°
Tintina Fault Zone
Selwyn Basin
Alaska
Yukon
Finlayson Lake fault zone
(along boundary)
Campbell Belt Range
Carmacks
Ross River
105 F
105 G
Ice
Tree (Chzerpnough)
Ice (Bnob)
MM
Mamu
Wolf & Fox
Kudz Ze Kayah
Wolverine
Fyre Lake
Pelly-Cassiar Platform
Denali Fault
WHITEHORSE
Teslin
Watson Lake
141°
60°
Yukon
BC
Yukon
CANADA
modified after Hunt (1998)
Figure 2.1
Terrane Locations



LEGEND

- Fox & Wolf Claim Area
- Pelly Mountains Volcanic Belt
- Fox Property Location
- VMS Occurrences

10 20 30 KILOMETRES

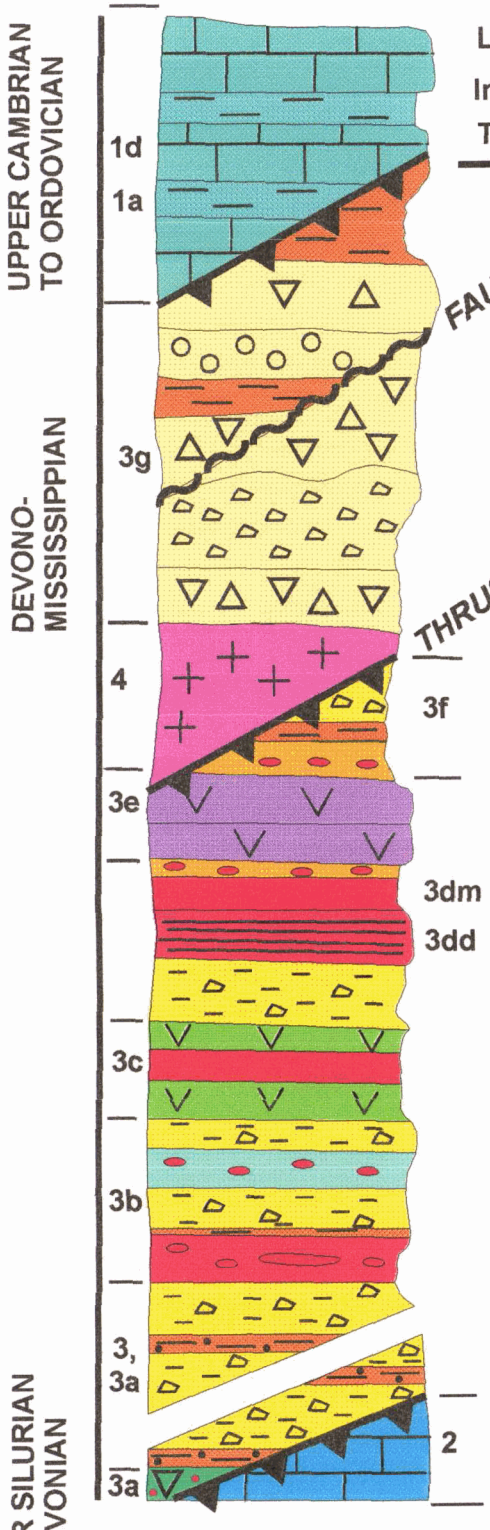
(Drawing Modified After Hunt, 1999)

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PELLY PROJECT

Fox Property Regional Geology

NTS 105G/5&6			Date Sept. /99
Scale As Shown	DWG by RGW		Figure 2.2



Limestone, Silty Limestone

Interbedded Shale

Tan to Reddish Dolostone

Felsic Breccia, Debris Flow
Greywacke, Argillite, Trachyte sills & dykes

Black Matrix Felsic Fragment
Debris Flow, Breccia

Monzonite Sill

Lapilli Ash Tuff
Argillite
Pyritic Fragment Lapilli Tuff

Massive to Porphyritic Trachyte Flows

Pyritic Fragment Lapilli Tuffs

Massive Sulphides (Upper =Wolf deposit)

Laminated Barite, Sulphide

Feldspar Crystal Ash - Lapillil Tuff

Quartz Phyric Trachyte Flow

Massive Sulphides (Middle=East Slope)

Quartz Phyric Trachyte Flow

Lapilli Tuff

Pyritic Mudstone

Lapilli Tuff, Argillite, Greywacke

Massive Barite, Disseminated Sulphides (LOWER)

Minor Lapilli Tuff, Tuff Breccia, Argillite
Epiclastic Volcanic Rocks, Argillite

Pyritic Felsic Breccia

2 = Dolomite, Minor Chert

ATNA RESOURCES LTD.

FOX PROPERTY

Wolf Property - Stratigraphic Column

after Gibson, A.M. et al, 1999

Drawing By: KMJ / AMG	Date: Sept. 1999	Figure 2.3

2.2.3 STRUCTURE

The most significant structural features of the Fox property are two thrust faults, which bound the volcanic rocks, strike northwesterly and dip at moderate angles to the southwest. These thrust faults, in effect create a thrust bound panel of volcano-sedimentary rocks within two older carbonate sequences. The lower thrust fault has previously been mapped as an unconformity (Gordey, 1977; Hunt, 1997), however, the thrust interpretation is preferred by this author due to late stage tectonic disruption of older structures along the contact and that the contact cuts across, albeit at a shallow angle, the overlying volcanic stratigraphy. It is entirely possible that the volcanic sequence was originally, unconformabley deposited on the older carbonate sequence and that late tectonism has resulted in movement along the unconformity.

A weak to strong foliation, generally bedding parallel, is developed within the volcano-sedimentary package. In general this foliation is also parallel to the bounding thrust faults. Diversion of bedding and foliation planes is observed in a few locations and is assumed to be indicative of folding, however, visible minor folds are rare and no megascopic fold structures have been defined. It is possible that large scale tight to isoclinal folds may be present and shears through the hinge regions prevent field recognition. Primary bedding has only been observed at a few locations and stratigraphy is not distinct enough to clearly determine fold structures.

2.2.4 ALTERATION AND MINERALIZATION

All units within the Fox Property have been metamorphosed to the lower greenschist facies mineral assemblage during regional scale metamorphism. Hydrothermal alteration possibly related to the deposition of VMS mineralization, is represented by Fe-Mg carbonatization, weak sericitization and the presence of pyrite. In general, hydrothermal alteration is weak, but widespread, in the eastern grid area but decreases significantly to the west. Hydrothermal alteration is also conspicuous in the northwestern corner of the Fox claims and likely reflects a separate vent area. In some areas pyritic trachyte units occur without associated hydrothermal alteration in the surrounding pyroclastic rocks and the formation of sulphuric acid due to oxidation of the pyrite has resulted in supergene alteration that can appear to be intense hydrothermal alteration. Chemical analysis is an effective way to differentiate these two alterations.

During the mapping of the Fox claims, no base metal sulphides were discovered beyond any mineralization that was previously known. Barite occurrences were noted in two

locations, both of which had been recognized by Cominco in previous work. Both barite occurrences have associated multi-element soil geochemical anomalies. Two zones of ferricrete are located approximately at grid co-ordinates of 1500N, 2950E and 1300N, 2400E . Both zones are sufficiently large to indicate the weathering of significant amounts to sulphides. The potential source rocks are likely to be proximal but are talus covered. The zones of ferricrete in talus slopes immediately above areas of anomalous soil geochemistry are interpreted to mark the approximate location of a (possible) VMS horizon. However, no geophysical anomalies were detected in this area.

3 GEOCHEMISTRY

The 1998 geochemical program consisted of a 21.6 line kilometre soil (talus fines) grid with lines spaced at 150 metres and samples spaced at 50 metres. A total of 416 samples were collected from the grid area.

3.1 METHODS

The samples were collected from shovel or mattock dug holes which averaged 30 cm in depth. Talus fines or B horizon soil, where developed, were placed in kraft bags for air drying prior to shipment. All samples were analyzed by Acme Laboratories of Vancouver, B.C. using aqua regia (partial) digestion followed by 30 element ICP analysis and for mercury using specific ion electrode analysis. Appendix I contains certificates of analysis from Acme Laboratories.

Table 3.1 Summary Statistics: Fox Grid Geochemistry

Element	# of samples	Minimum	Maximum	Mean	Median	Standard deviation	Threshold	Percentile of threshold
Pb	416	1	3308	80	26	267	90	78
Zn	416	7	4188	235	107	421	200	76
Ba	416	22	2278	202	109	277	200	78
Hg	330	1	3560	96	40	262	120	88

3.2 RESULTS

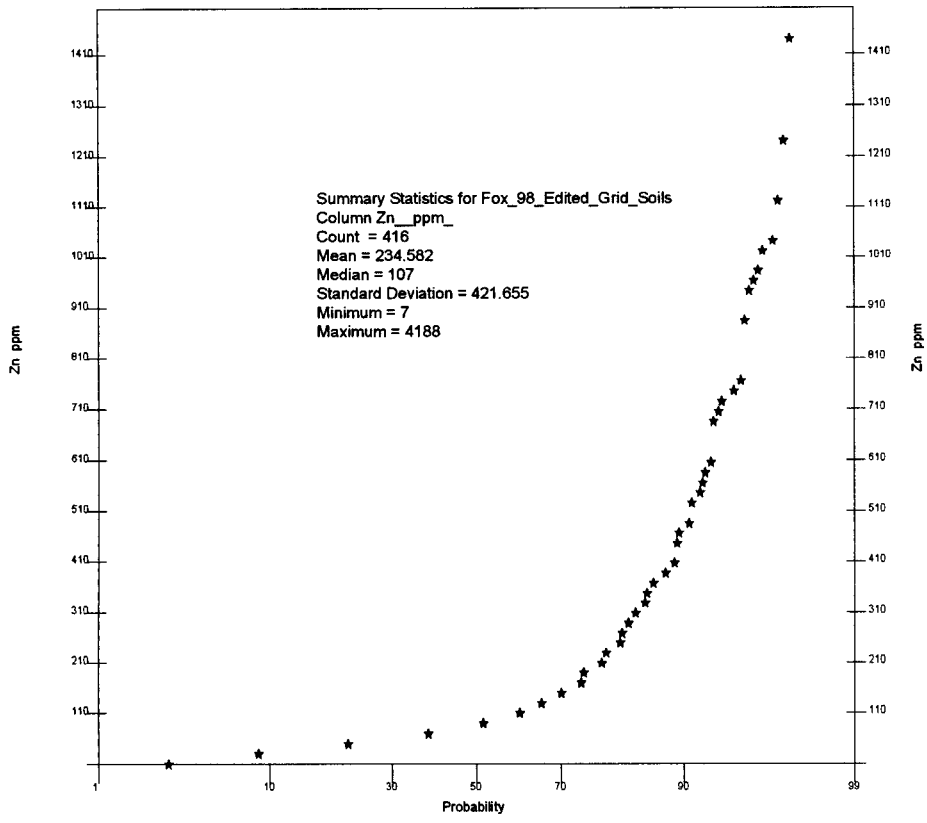
The elements determined to be the most significant and useful for locating mineralization in the Fox geological setting are lead, zinc, barium and mercury. The geochemical survey results for these elements are summarized in Table 3.1 and plotted on Figures 3.1 through to 3.7. The above mentioned elements are plotted and histograms and cumulative probability plots (Figures 3.1 and 3.2) to investigate population distribution and to assist in the selection of thresholds. The four selected elements show a slightly to moderately

right skewed log normal (2 paralog normal) distribution typical of elements associated with mineralization in a mineralized environment. Thresholds were chosen in part by inspection and in part by the break in slope on the probability plots after the method of Sinclair (1976). Above threshold values were further subdivided and the results plotted as dot plots in Figures 3.4 to 3.7. All of the selected elements show strong spatial correlation and are believed to be indicative of volcanogenic massive sulphide mineralization. The multi-element anomaly extends across most of the grid in an northwesterly direction on the northeast end of the grid. The anomalous area is about 1,500 metres long and up to 350 metres wide. All of the other elements except for lead show minor, scattered anomalies off of the main anomaly, generally in the northwestern part of the grid. Additional elements that show similar distribution and anomalies but that were not included for presentation are arsenic, silver and molybdenum.

3.3 DISCUSSION OF RESULTS

Two significant factors in determining the significance of anomaly strength and position are mechanical dispersion and talus creep. No base metal sulphide mineralization was observed in place or float within the grid area. However, barite float was noted in two areas: Line 35+50E at 13+75N, appeared to be sourced from an area directly up slope, and Line 26+50E at 13+75N and numerous areas down-slope. Much of the cirque basin in the central area of the grid is an enormous talus slope, debris from the cliff face would likely suppress any geochemical response from rocks underlying this area. Consequently, the southern, of what appears to be two possible mineralized horizons on the southeastern part of the grid, is buried by the cirque-basin talus and/or merges with the lower or northern horizon. The two possible mineralized horizons conform to what is known from exposure and drill data on the Wolf property immediately to the southeast. Although the data base is small, in both locations on the Wolf property where strong lead geochemical anomalies and barite float occur, massive sulphide mineralization has been intersected by drill holes down-dip.

Fox Zn Probability Plot



Fox Zn Histogram

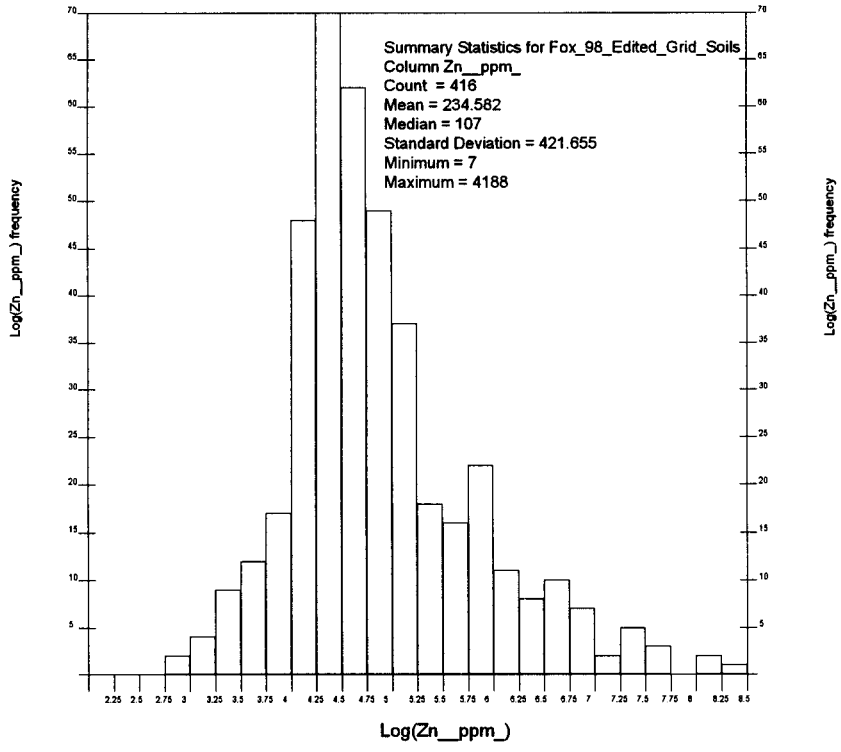
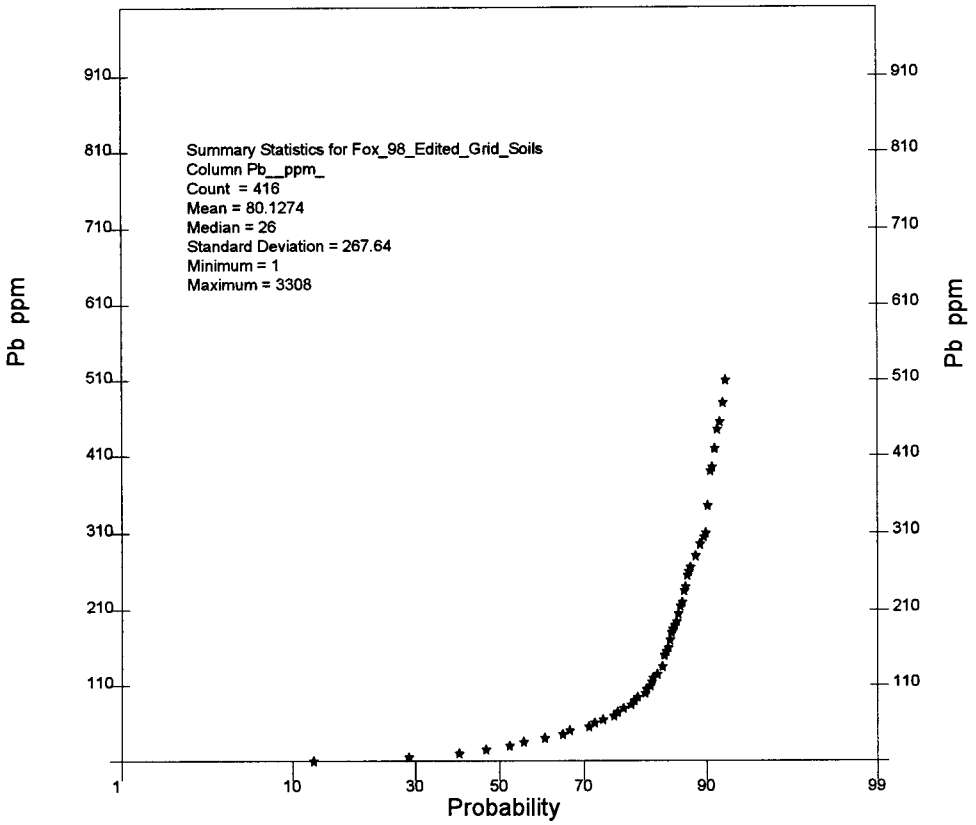


Figure 3.1

Fox Pb Probability Plot



Fox Pb Histogram

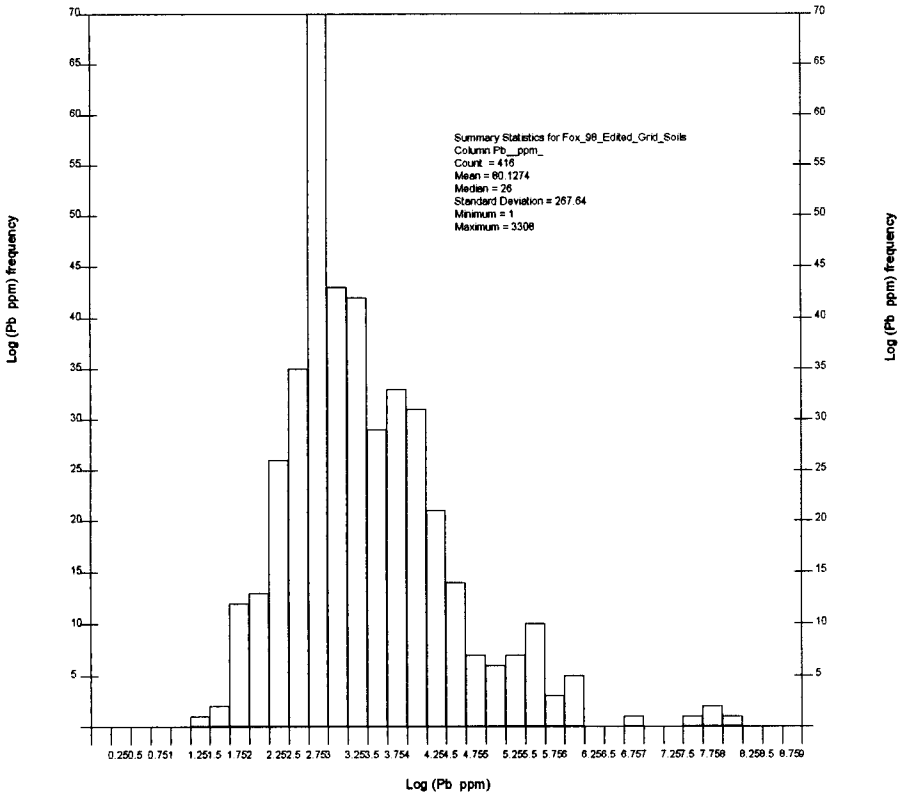
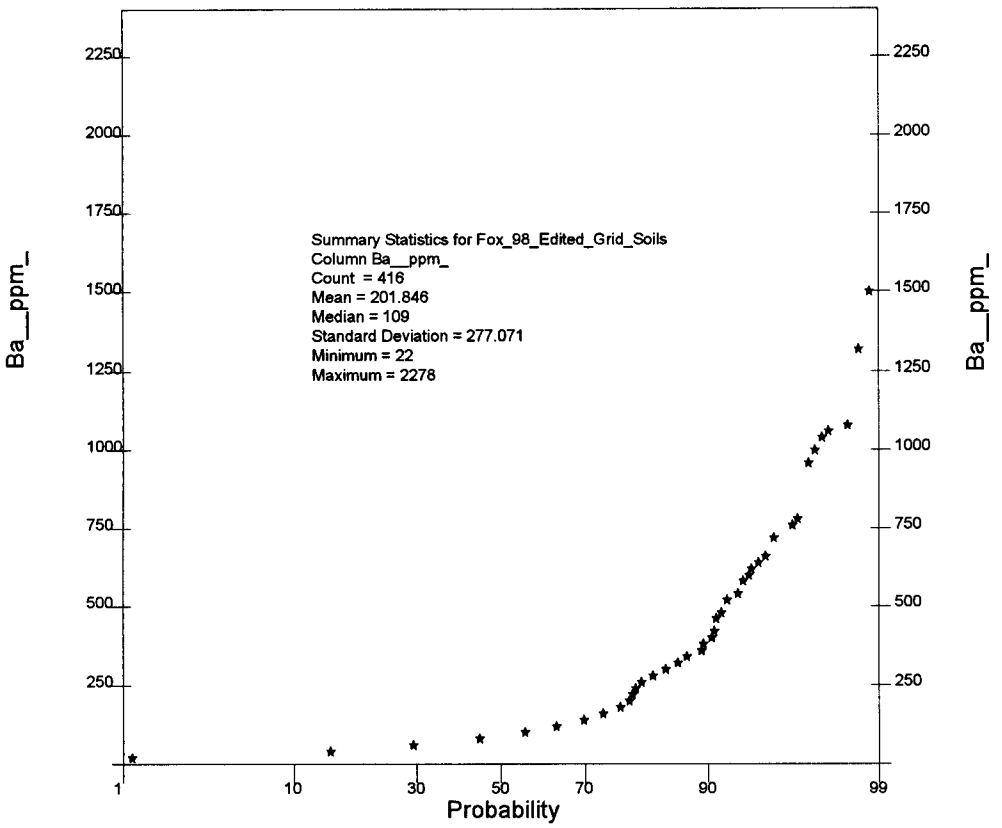


Figure 3.2

Fox Ba Probability Plot



Fox Ba Histogram

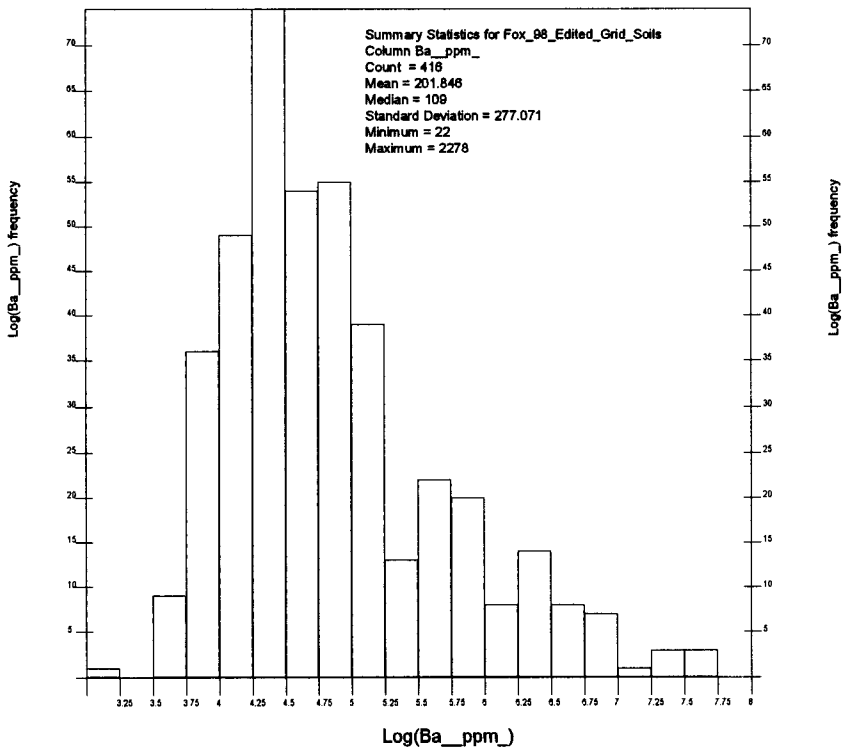
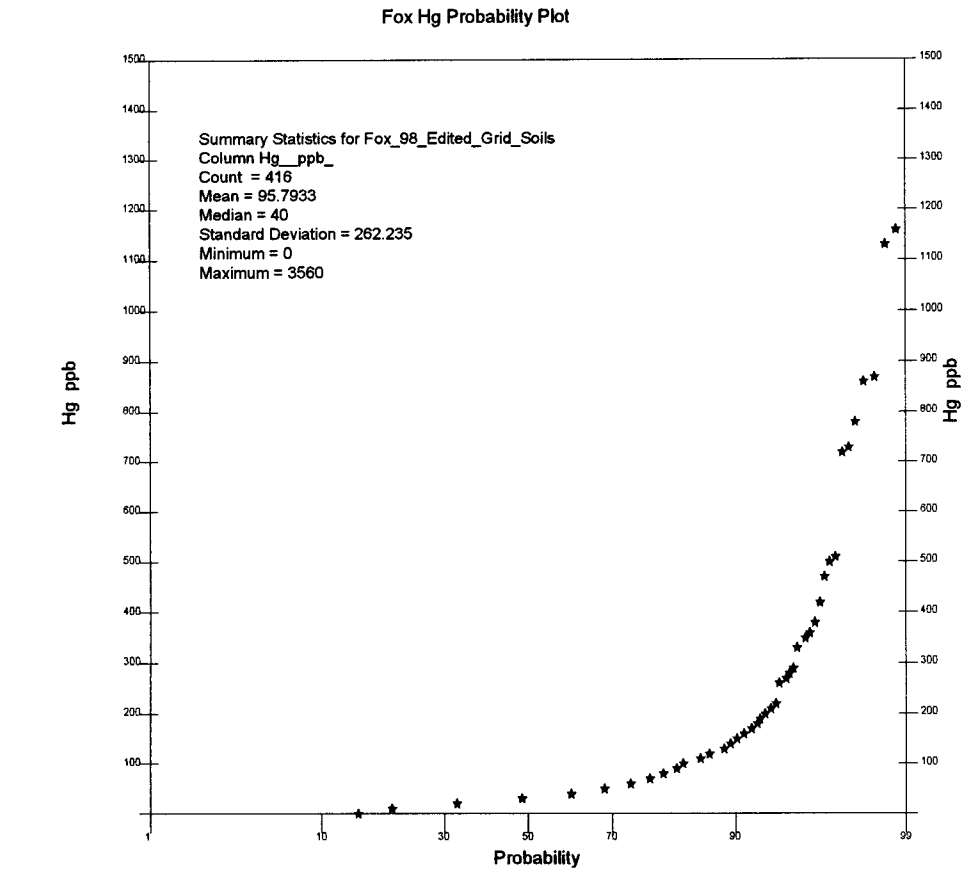


Figure 3.3


Fox Hg Probability Plot
Summary Statistics for Fox_98_Edited_Grid_Soils
Column Hg__ppb_
Count = 416
Mean = 95.7933
Median = 40
Standard Deviation = 262.235
Minimum = 0
Maximum = 3560
Hg ppb
Probability

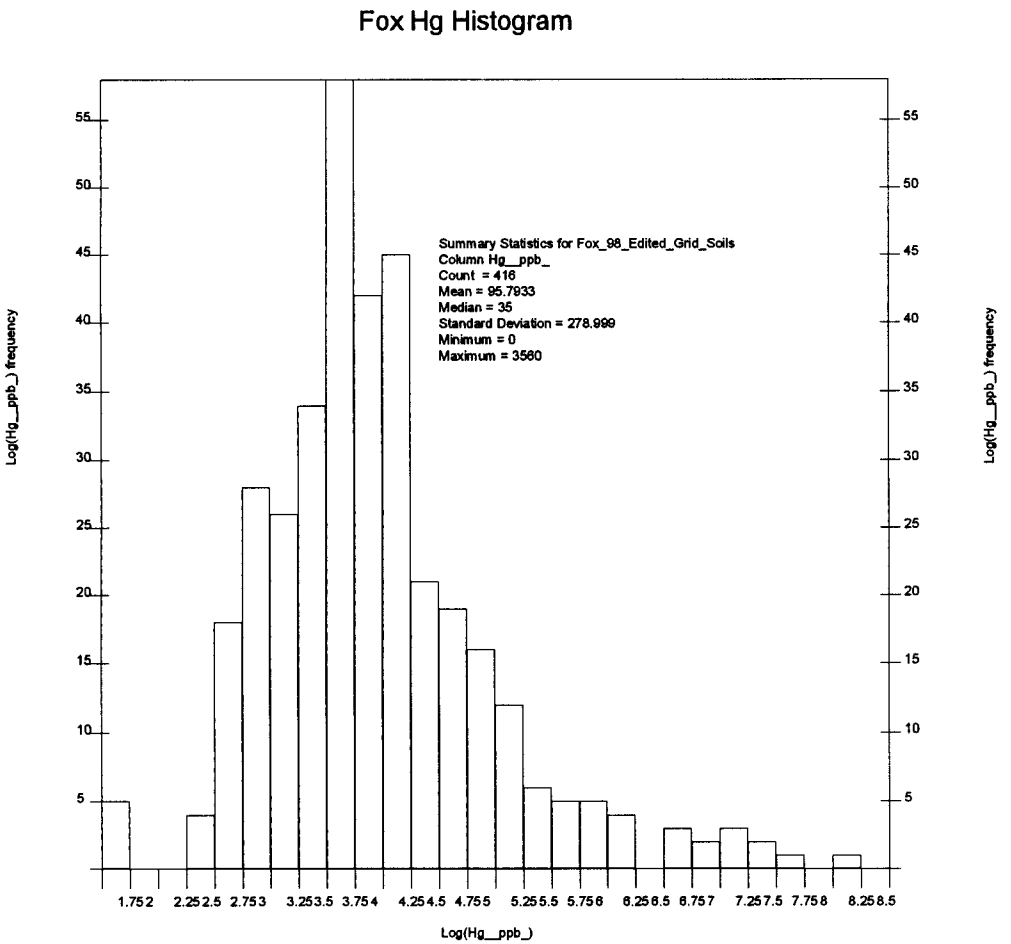

Fox Hg Histogram
Summary Statistics for Fox_98_Edited_Grid_Soils
Column Hg__ppb_
Count = 416
Mean = 95.7933
Median = 35
Standard Deviation = 278.999
Minimum = 0
Maximum = 3560
Log(Hg__ppb_) frequency
Log(Hg__ppb_)

Figure 3.4

363000 mE

364000 mE

365000 mE

366000 mE

6804000 mN

6803000 mN

FX98-01

FX98-02

FX98-03

FX98-04

143.3m

184.7m

259.1m

359.7m

Fox 98 Grid Soils
Zn (ppm)

1,000 to 4,188		(16)
600 to 1,000		(16)
400 to	600	(19)
200 to	400	(54)
7 to	200	(311)

ATNA RESOURCES LTD.

Fox Property
Grid Soil Samples
Zn (ppm)

Date: 8/4/1999
Author: RGW
Office: Van., B.C.
Drawing: 3.5
Scale: 1:10000
Projection: UTM Zone 9 (NAD 27 for Canada)

0 125 250 500
metres

094034 DWG (2)

363000 mE

364000 mE

365000 mE

366000 mE

FX98-02

143.3m

FX98-03

184.7m

259.1m

FX98-04

FX98-01

359.7m

6804000 mN

6803000 mN

Fox 98 Grid Soils
Pb (ppm)

400 to 3,308		(10)
260 to	400	(12)
140 to	260	(14)
90 to	140	(22)
1 to	90	(358)

ATNA RESOURCES LTD.

Fox Property
Grid Soil Samples
Pb (ppm)

Date: 8/4/1999
Author: RGW
Office: Van., B.C.
Drawing: 3.6
Scale: 1:10000
Projection: UTM Zone 9 (NAD 27 for Canada)

0 125 250 500
metres

094034 Dwg 3

363000 mE

364000 mE

365000 mE

366000 mE

6804000 mN

6803000 mN

FX98-01

FX98-02

FX98-03

FX98-04

143.3m

184.7m

359.1m

359.7m

N

Fox 98 Grid Soils
Ba (ppm)

1,000 to 2,278	(12)
500 to 1,000	(24)
200 to 500	(60)
22 to 200	(320)

ATNA RESOURCES LTD.

Fox Property
Grid Soil Samples
Ba (ppm)

Date: 8/4/1999
Author: RGW
Office: Van., B.C.
Drawing: 3.7
Scale: 1:10000
Projection: UTM Zone 9 (NAD 27 for Canada)

0 125 250 500
metres

094034 DWG (4)

363000 mE

364000 mE

365000 mE

366000 mE

6804000 mN

6803000 mN

FX98-01

FX98-02

FX98-03

FX98-04

143.3m

184.7m

259.1m

359.7m

Fox 98 Grid Soils
Hg (ppb)

700 to 3,560		(12)
200 to	700	(20)
120 to	200	(28)
5 to	120	(300)

ATNA RESOURCES LTD.

Fox Property
Grid Soil Samples
Hg (ppb)

Date: 8/4/1999
Author: RGW
Office: Van., B.C.
Drawing: 3.8
Scale: 1:10000
Projection: UTM Zone 9 (NAD 27 for Canada)

0 125 250 500
metres

094034 Dwg 5

ATNA RESOURCES LTD.

Fox Property
Contour Soil Samples
Zn (ppm)

Date: 29/4/1999
Author: RGW
Office: VAN., BC
Drawing: 3.9
Scale: 1:20000
Projection: UTM Zone 9 (NAD 27 for Canada)

0 250 500 1000
metres

358000 mE
359000 mE
360000 mE
361000 mE
362000 mE
363000 mE

6808000 mN
6807000 mN
6806000 mN
6805000 mN
6804000 mN

Fox 98 Contour Soils
Zn (ppm)

1,000 to 1,338		(3)
600 to 1,000		(2)
400 to	600	(10)
200 to	400	(32)
3 to	200	(277)

094034 DWG (6)

ATNA RESOURCES LTD.

Fox Property
Contour Soil Samples
Pb (ppm)

Date: 29/4/1999
Author: RGW
Office: VAN., BC
Drawing: 3.10
Scale: 1:20000
Projection: UTM Zone 9 (NAD 27 for Canada)

0 250 500 1000
metres

358000 mE
359000 mE
360000 mE
361000 mE
362000 mE
363000 mE

6808000 mN
6807000 mN
6806000 mN
6805000 mN
6804000 mN

Fox 98 Contour Soils
Pb (ppm)

400 to	1,026	(4)
260 to	400	(1)
140 to	260	(8)
90 to	140	(19)
1 to	90	(292)

094034 DWG 7

ATNA RESOURCES LTD.

Date:29/4/1999	**Fox Property** **Contour Soil Samples** **Ba (ppm)**
Author: RGW	
Office: VAN., BC	
Drawing: 3.11	
Scale: 1:20000	Projection: UTM Zone 9 (NAD 27 for Canada)

0 250 500 1000
metres

358000 mE
359000 mE
360000 mE
361000 mE
362000 mE
363000 mE

6808000 mN
6807000 mN
6806000 mN
6805000 mN
6804000 mN

Fox 98 Contour Soils
Ba (ppm)

1,000 to 1,962		(9)
500 to 1,000		(14)
200 to	500	(86)
4 to	200	(215)

094084 Dwg 8

ATNA RESOURCES LTD.

Fox Property
Contour Soil Samples
Hg (ppm)

Date: 29/4/1999
Author: RGW
Office: VAN., BC
Drawing: 3.12
Scale: 1:20000
Projection: UTM Zone 9 (NAD 27 for Canada)

0 250 500 1000
metres

358000 mE
359000 mE
360000 mE
361000 mE
362000 mE
363000 mE

6808000 mN
6807000 mN
6806000 mN
6805000 mN
6804000 mN

Fox 98 Contour Soils
Hg (ppb)
200 to 700 (11)
120 to 200 (21)
10 to 120 (292)

094034 pwg 9

ATNA RESOURCES LTD.

Fox Property
Contour Soil Samples
Sample Numbers

Date:29/4/1999
Author: RGW
Office: VAN., BC
Drawing: 3.13
Scale: 1:20000
Projection: UTM Zone 9 (NAD 27 for Canada)

0 250 500 1000
metres

358000 mE
359000 mE
360000 mE
361000 mE
362000 mE
363000 mE

6808000 mN
6807000 mN
6806000 mN
6805000 mN
6804000 mN

ST8-6-1
ST8-5-01
ST8-5-03
ST8-5-05
ST8-5-08
ST8-5-11
ST8-5-14
ST8-6-8
ST8-5-18
ST8-5-21
ST8-5-23
ST8-6-16
ST8-5-25
ST8-5-27
ST8-5-29
ST8-6-22
ST8-5-32
ST8-5-41
ST8-5-35
ST8-6-41
ST8-6-28
ST8-6-38
ST8-6-31

ST8-4-01
ST8-3-01
ST8-4-03
ST8-3-03
ST8-4-05
ST8-3-05
ST8-4-07
ST8-3-08
ST8-4-11
ST8-4-16
ST8-3-11
ST8-4-21
ST8-3-15
ST8-4-26
ST8-3-21
ST8-4-29
ST8-3-24
ST8-4-32
ST8-3-41
ST8-3-34
ST8-3-26
ST8-4-35
ST8-3-45
ST8-4-38
ST8-3-49
ST8-4-43
ST8-1-65
ST8-1-63
ST8-1-60
ST8-2-73
ST8-1-57
ST8-2-71
ST8-1-52
ST8-2-67
ST8-1-48
ST8-1-45
ST8-1-43
ST8-1-41
ST8-1-37
ST8-2-51
ST8-1-32
ST8-2-46
ST8-1-30
ST8-1-28
ST8-1-26
ST8-1-24
ST8-1-22
ST8-2-29
ST8-1-19
ST8-2-25
ST8-1-14
ST8-2-21
ST8-1-12
ST8-1-01
ST8-2-16
ST8-1-06
ST8-2-12
ST8-2-08
ST8-2-04
ST8-2-01

094034 Dwg (10)

4. GEOPHYSICS

Delta Geophysics Inc. of Tsawwassen, B.C. was contracted to complete a horizontal co-planar loop electromagnetic survey over the most prospective area of the Fox claims. A report by G. Hendrickson, detailing equipment and survey specifications, results and interpretation is included as Appendix II. To assist the reader a summary of the report is given below.

4.1 METHODS

A multi-frequency horizontal loop EM survey was carried out over 19 line kilometres of grid. Equipment used was a Maxmin electromagnetic system, model I-9, developed by Apex Parametrics Ltd. To ensure a good depth of investigation a large coil separation, typically 100 to 200m. The same survey techniques and equipment were employed on the Wolf property and were demonstrated to be effective in the recognition of sulphide conductors.

4.2 RESULTS

Results of the survey are plotted on Figures 4.1 to 4.6 which illustrate the EM response graphically at 6 different frequencies (220, 440, 880, 1760, 3520, and 7040Hz). Eight conductors were outlined by the survey with the surface trace of these conductors displayed on the 440 Hz data plan (Fig. 4.2). Starting from the east end of the grid the conductors are numbered 1 through 8. A technical description of each of these conductors is presented within the geophysical report of Appendix II. The long strike length and weak to moderate conductivity of the conductive zones suggests formational or structural conductors, such as argillaceous horizons or faults. Examination of the conductive zones in the field verifies this hypothesis. Conductors 4, 5, and 8 correlate with argillaceous outcrop which is proximal to the contact with the upper thrust plate. Additionally, these conductors have no corresponding geochemistry. All of these conductors have correlating airborne EM responses and were of interest due to proximity to an airborne Mag high. Rocks in the vicinity of the Mag high are weakly to moderately hornfelsed and/or epidotized indicating a probable intrusion at depth and not the presence of a magnetite formation. Conductor 6 correlates with a thin argillite bed within the Black Matrix Breccia (unit 4) and has no soil geochemical response. This unit may have been intersected in drill hole FX98-04 (see section 5). Conductor 1 correlates with a long airborne conductor as well as local argillaceous material in outcrop or float. This conductor is located at the downhill side of the strong soil geochemical anomaly and is unlikely to be of exploration interest. Conductor 7 has no geochemical expression and is not directly tied to argillite in outcrop, however, argillite is observed along strike, to the west, and the characteristics of this conductor are similar to those associated with argillite rocks elsewhere. Conductor 2 is a broad, single line, shallow conductor that is located very close to the inferred location of the thrust fault which separates felsic volcanic rocks from the overlying sediments. It is too far south to correlate with the prospective

stratigraphy hosting the Wolf deposit. Conductor 3 is somewhat enigmatic. At its projected depth and dip the surface projection of this conductor is relatively close to the geochemically anomalous argillite intersected in drill hole FX98-01. The strike orientation of this conductor does not match geology but this could be accounted for by a plunge to the conductive zone and/or chainage errors in the survey lines (not unrealistic considering topography in this area). The projected up dip edge of the conductor, if it came to surface, is a reasonable match for the up-slope start of the soil geochemical anomaly. Conductor 3 is, therefore, the only conductor of this survey that merits further consideration.

5. DIAMOND DRILLING AND LITHOGEOCHEMISTRY

5.1 PROGRAM AND METHODS

The 1998 drill program was conducted in conjunction with the drill program on the adjacent Wolf property. The drill contractor was Britton Bros. Diamond Drilling from Smithers, B.C. Equipment used was a contractor-built BB2500 wireline hydraulic 'fly-drill.' Helicopter support was provided by Trans North Air Ltd. of Whitehorse. Field crews were based at the Ketza Mine site 45 km to the northwest. Four drill holes for a total of 946.8 metres were completed. Drilling was carried out from timber pads constructed by Atna personnel which were reused. Two pads and the drill remain on the property in anticipation of further drilling on the either the Fox or Wolf properties.

Drill core was logged using an 'in-house' modified version of the GEOLOG system (Godwin *et al.* 1985). The GEOLOG system was selected because it has been demonstrated to be an effective tool to capture high quality, consistent geological information at an appropriate scale and to be able to plot this geological information in a manner which facilitates geological interpretation. Lithological data is recorded on specifically designed forms using a alphanumeric codes to save space and to facilitate computer manipulation. Drill logs are printed in code format in Appendix III. A list of the codes is provided at the start of Appendix III. Geological information is also plotted on cross sections (Figs. 5.1 and 5.2) and on lithogeochemical strip plots (Figures 5.3 to 5.6).

Drill core was continuously lithogeochemically sampled. Sample intervals range from 1 to 15 metres and are selected so as not to cross visually determined principle geological intervals, that is samples should not cross changes in lithology, alteration or mineralization. Samples are collected to be representative, which involves taking 2 to 4 cm of whole core every 30 to 50 cm along the interval. Samples were submitted for 32 element ICP analysis at Acme Analytical Laboratories in Vancouver. Analytical techniques and data are given in Appendix I. A total of 94 samples were analyzed in this fashion.

Table 5.1 Summary of Drill Hole Specifications

Hole ID	Northing	Easting	Grid N	Grid E	Elev.	Azim.	Dip	Total length
FX98-01	6803690	364960	1225	3850	1689	014	-45	359.7
FX98-02	6805005	363970	1600	2300	1448	050	-45	143.3
FX98-03	6804730	363640	1200	2150	1449	044	-45	184.7
FX98-04	6804620	363640	1050	2275	1468	047	-46	259.1

5.2 TARGETS

Drill holes were targeted to test potentially mineralized horizons on the basis of geology, geochemistry and geophysics. Drill hole FX98-01 was designed to test the eastern extent of geochemically anomalous stratigraphy. The hole location was chosen to position the drill hole between the ridge top where geology was well known and the eastern end of the main Fox claim block. The chosen location was also about 1 km west of WF97-04 which intersected a significant thickness of disseminated Zn-Pb mineralization within Unit 3e.

Drill hole FX98-02 was targeted on a suspected mineralized horizon with a significant 1 km long airborne conductor. The hole was placed at the halfway point between an exposure of semi-massive sulphide in Cominco Creek, and the strong soil geochemical anomaly on the northwestern part of the grid area, in an area where exposure was sufficient to be relatively certain of geology.

Drill hole FX98-03 was designed to test a possible mineralized horizon that likely occurs up-slope from the soil geochemical anomalies and may be responsible for the two ferricrete zones on the ridge on the northwestern part of the geochemical grid. The position of this hole was dependent upon the interpretation of the strike and dip of the host stratigraphy. The hole location was based on an interpreted dip of 40 to 50 degrees which was based on two mappable contacts along the ridge above the drill hole and the presence of an airborne EM conductor. However, data elsewhere allows for the possibility of much steeper dips. The location of the test site was also determined, in part, by the lack of EM conductors in the vicinity of the strongest geochemical response; the reasoning being that although geochemistry may mark the location of a mineralized horizon a significantly sized massive sulphide deposit should have an EM response. The airborne EM responses were stronger at the lower elevations along Cominco Creek, dying out the east, suggesting the possibility that sulphides were at moderate to significant depths.

The final hole of the program, FX98-04 was located to test the semi-massive sulphide horizon intersected in FX98-03, down-dip and to the east.

5.3 RESULTS

No significant massive sulphide was intersected by the drilling program. Lithologies only correlate in a general way with surface exposures and anticipated stratigraphy such that without the down-hole lithogeochemisrty it would be difficult to be certain whether the target had been adequately tested.

FX98-01 was extensively faulted and broken for most of its drilled length, a feature that would be unusual for the Wolf property. The degree of sheared and broken core in this hole is interpreted to indicate proximity to a major break oriented sub-parallel to the drill hole. A significant, northerly trending fault with mostly dip-slip motion would also explain the difficulty in following units from the Wolf property onto the Fox claims. The lithogeochemical profiles (Fig. 5.3) indicate a possible mineralized horizon in the vicinity of 116 to 135 m within sheared, gougy argillite and lapilli tuff. A lack of base metal anomalies at this location is unusual, unless the sulphide bearing rocks have been sheared out. There are low-level Mo, As, Hg and Fe anomalies suggestive of a mineralized zone, but it is the characteristic pattern of Ca, Mg, Mn, Ba, and Sr enrichment in the hanging wall followed by absence in the zone and low but increasing levels within the foot wall that marks this area as a Wolf-like VMS horizon. Further down the hole at 178 to 184 m there is a pyritic lithic ash tuff adjacent to a trachyte horizon (similar to distal Wolf mineralization) that is moderately anomalous in Zn, Pb, Mo, As and Hg. Lack of significant Ag, Cu, Sb and Au anomalies suggests that the zone is not overly significant, but this area could be a possible source rock for the surface geochemistry. An argillite unit at 310 to 312 m has geochemical patterns similar to the upper zone in this hole and together with its position at the base of a thick trachyte sequence suggests that it may correlate with the lower sulphide zone on the Wolf property. The geology and geochemistry indicate that this hole likely tested the favourable stratigraphy, faults notwithstanding, and that the alteration and mineralization is extremely distal. However, core geochemistry is unusually subdued relative to the surface geochemistry based on our experience on the Wolf property.

FX98-02 was spotted to intersect the mineralized horizon at a depth of 75 to 100m. Stratigraphy within the hole correlates reasonable well with surface geology. However the creek exposure of the semi-massive sulphide has a strongly pyritic trachyte in the footwall whereas in this hole the trachyte is not pyritic and occurs in the immediate hangingwall. Lithogeochemistry show traditional, but very flat trends for a mineralized horizon to correlate with the argillite-lithic ash tuff contact. Again chemistry of the core is too weak relative to surface; and although this argillite may correlate with the airborne EM anomaly, it is by no means certain that this is the correct target horizon.

FX98-03 intersected approximately 3 m of weakly mineralized semi-massive sulphide near the top of the hole. The mineralization occurs between lithic ash tuff and aphyric trachyte, not particularly diagnostic but still permissive stratigraphy. The lithogeochemical profiles display distinct anomalies of Zn, Mo, As, Hg, and Cu but Au,

Ag, Sb and Pb are not enriched. Patterns for the carbonate forming elements, Ca, Mg, Mn and Sr display typical hanging wall build-ups and footwall depletions. This is a bona-fide VMS zone albeit distal to mineralization (ie: greater than 1 km from potentially ore-grade mineralization). Scattered single element anomalies within the footwall are likely due to minor mineralization within fracture zones. The 'bathroom tile breccia' in the lower part of the hole is an unusual rock type and may represent a type of hydrothermal or vent breccia. Silicification of this unit is highly unusual within the belt.

FX98-04 was located to test the down-dip and on strike projection of the sulphide zone intersected in FX98-03. No sulphide zone was intersected and correlation of rock units between the holes is difficult. Correlation between the holes is more straightforward if the bathroom tile breccia is cross-cutting. Lithogeochemistry is very weak but allows for the argillaceous units to be correlated with an extremely distal VMS horizon. It is interesting to note that zinc, although at very low levels, steadily increases down the hole.

6. CONCLUSIONS AND RECOMMENDATIONS

6.1 CONCLUSIONS

Geological mapping and prospecting failed to locate any base metal mineralization within the Fox property. The favourable stratigraphy which hosts the Wolf deposit extends across the southern part of the Fox claims and has very significant associated soil anomalies. However, alteration and pyrite mineralization, particularly, within the trachyte units weakens along strike to the northwest. Geochemical anomalies of the size and tenor of those on the Fox claims have been demonstrated to have a significant mineralized source on the Wolf property. Neither airborne nor ground EM geophysics detected a conductor that correlated with the geochemical anomalies.

The presence of airborne EM anomalies in the Cominco Creek valley that do not extend along strike towards the Wolf property could reflect an increasing sedimentary component of the stratigraphy to the northwest or could also indicate that instrument elevation was not well maintained in more rugged topography.

Lithogeochemical profiles within the drill holes indicate the presence of weakly mineralized horizons that are very distal from potentially economic massive sulphide mineralization. The amount of base metal enrichment within the drill holes does not appear to be high enough to fully account for the strength of the soil geochemical anomaly, even when taking into account the concentration that takes place when sieving talus fines to -80 mesh. The lack of ground EM conductors associated with the soil anomaly is problematic.

The contour soil lines carried out in the northwestern part of the claim blocks suggest that the ferricrete zones and barite float are likely related to volcanogenic mineralized horizons. Geology in this area is similar to that of the Wolf property, although it is uncertain of how they correlate. Structural repetition, either by folding or faulting, is both plausible and favourable. The geochemical anomalies in this area are not as strong or consistent as within the gridded area but this is expected has this area is located on a dip-slope. The dip slope does mean that if massive sulphide mineralization is present its down-dip projection would be off the claim area.

6.2 RECOMMENDATIONS

An additional program for the Fox claims is recommended. A more detailed soil survey followed up with intense prospecting and possibly hand trenching may shed some light on the source of the geochemical anomaly within the current grid area. As topography places some constraints on how this anomaly should be drill tested the additional information would be required to effectively target any further drilling. Both geochemical surveys and ground geophysics should be extended to cover the area around and beyond drill hole FX98-02 as multiple horizons may be present in this area.

Geological mapping, a detailed soil grid and ground EM surveys are recommended for the northwest corner of the claim area, provided that additional claims are secured in the down-dip direction.

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APPENDIX I

GEOCHEMICAL CERTIFICATES

OF ANALYSIS

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE (604) 253-3158 FAX (604) 253-1716
(ISO 9002 Accredited Co.)

GEOCHEMICAL ANALYSIS CERTIFICATE

Atna Resources Ltd. PROJECT FOX File # 9803829

1550 - 409 Granville St., Vancouver BC V6C 1T2 Submitted by: P. Holbek

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	Hg ppb
FX 01-01	10	5	33	12	<.3	3	<1	260	3.96	13	<8	<2	6	48	<.2	3	<3	1	.56	.013	28	4	.14	58	<.01	<3	.66	<.01	.27	<2	2	90
FX 01-02	9	3	40	294	<.3	4	<1	617	4.71	16	<8	<2	7	84	.6	<3	<3	1	.96	.009	29	3	.26	59	<.01	<3	.89	.01	.25	<2	<1	415
FX 01-03	17	6	39	428	.4	12	<1	587	5.16	19	<8	<2	6	78	.7	<3	<3	1	1.03	.016	29	4	.21	57	<.01	<3	.78	.01	.31	<2	<1	560
FX 01-04	8	6	37	428	<.3	10	1	800	3.32	15	<8	<2	6	142	1.2	4	<3	2	1.19	.033	42	2	.39	114	<.01	<3	.53	<.01	.31	<2	<1	380
FX 01-05	6	4	8	45	.3	4	1	957	2.91	4	<8	<2	6	113	.2	<3	<3	1	2.35	.035	42	3	.46	102	<.01	<3	.59	.01	.31	<2	<1	45
FX 01-06	9	4	12	146	<.3	4	1	1204	3.37	2	9	<2	8	108	.4	<3	<3	1	2.35	.032	57	2	.65	123	<.01	<3	.69	<.01	.31	<2	<1	130
FX 01-07	9	5	4	38	<.3	2	1	324	2.26	<2	<8	<2	7	84	.3	<3	<3	<1	2.25	.034	33	4	.91	70	<.01	<3	.63	<.01	.31	<2	<1	25
FX 01-08	5	4	10	52	<.3	2	1	635	2.65	4	<8	<2	5	80	.3	<3	<3	<1	3.35	.034	22	2	1.04	115	<.01	<3	.81	.01	.26	<2	<1	50
FX 01-09	5	10	41	9	<.3	15	6	600	1.61	11	<8	<2	7	140	<.2	3	<3	3	4.34	.039	34	3	.56	131	<.01	<3	.56	<.01	.30	<2	<1	50
FX 01-10	5	39	35	15	.5	29	23	839	5.32	20	<8	<2	2	152	.3	<3	<3	10	4.35	.182	13	3	.68	87	<.01	<3	.56	<.01	.45	<2	<1	25
FX 01-11	4	14	8	32	.3	7	7	1162	3.98	10	<8	<2	12	95	.3	<3	<3	7	6.75	.068	106	3	.72	236	<.01	<3	.91	.01	.29	<2	1	60
FX 01-12	20	10	75	70	.9	9	1	354	8.88	51	<8	<2	14	24	<.2	6	<3	2	1.43	.041	102	3	.25	35	<.01	<3	.46	.01	.22	<2	2	135
FX 01-13	9	12	40	17	.7	2	<1	1159	7.35	26	<8	<2	9	84	.2	<3	3	3	5.07	.028	64	4	1.62	54	<.01	<3	.55	<.01	.17	2	<1	75
FX 01-14	12	23	88	7	1.0	28	1	293	5.98	64	<8	<2	5	21	.2	7	<3	10	1.46	.034	32	11	.50	50	<.01	<3	.40	<.01	.11	<2	1	155
RE FX 01-14	12	22	88	7	1.3	28	1	285	5.82	60	<8	<2	5	21	<.2	6	<3	10	1.40	.033	30	10	.49	49	<.01	<3	.39	<.01	.11	<2	1	140
RRE FX 01-14	12	21	83	6	1.3	28	1	277	5.72	61	9	<2	5	20	.2	7	<3	10	1.38	.035	30	10	.46	53	<.01	<3	.38	<.01	.11	<2	<1	140
FX 01-15	2	9	17	17	<.3	8	6	499	1.51	3	<8	<2	15	126	<.2	<3	<3	3	2.34	.084	65	4	.44	485	<.01	4	.54	<.01	.30	<2	<1	30
FX 01-16	5	15	45	30	<.3	31	14	739	3.32	11	<8	<2	6	124	.4	<3	<3	8	1.78	.139	20	6	.62	64	<.01	3	.76	.01	.37	<2	<1	25
FX 01-17	7	25	50	3	.8	26	8	209	3.77	14	<8	<2	5	94	.2	3	<3	2	1.06	.066	18	4	.32	42	<.01	<3	.45	.01	.31	<2	<1	95
FX 01-18	6	9	14	5	<.3	11	4	802	1.33	4	<8	<2	7	64	<.2	<3	<3	2	2.12	.053	29	4	.43	35	<.01	<3	.58	<.01	.25	<2	<1	15
STANDARD C3/AU-R	27	68	38	170	6.6	38	12	780	3.44	59	24	3	21	30	24.6	21	24	84	.57	.093	20	178	.63	156	.09	19	2.03	.04	.18	19	500	915
STANDARD G-2	1	3	<3	41	<.3	8	4	497	1.91	<2	<8	<2	4	73	.2	<3	<3	40	.60	.093	8	73	.57	219	.13	<3	.96	.08	.46	2	<1	10

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 2-2-2 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 MASSIVE SULFIDE 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: CORE AU* - IGNITED, AQUA-REGIA/MIBK EXTRACT, GF/AA FINISHED.(10 GM) HG ANALYSIS BY FLAMELESS AA.
Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: SEP 1 1998 **DATE REPORT MAILED:** Sept 9/98 **SIGNED BY.....** C.L.

D. TOYE, C.LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of the analysis only.

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GEOCHEMICAL ANALYSIS CERTIFICATE

Atna Resources Ltd. PROJECT FOX File # 9803913 Page 1

1550 - 409 Granville St., Vancouver BC V6C 1T2 Submitted by: P. Holbek

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	Hg ppb
FX 01-19	14	10	626	1296	2.1	17	5	746	4.16	16	<8	<2	7	101	6.4	6	<3	7	1.32	.062	36	8	.69	72	<.01	5	1.46	<.01	.25	<2	1	1385
FX 01-20	30	22	1459	8365	5.2	5	<1	392	6.84	67	<8	<2	7	39	30.0	24	4	1	.68	.005	27	4	.30	38	<.01	5	.38	<.01	.22	<2	2	6265
FX 01-21	2	6	28	53	<.3	<1	<1	556	3.11	3	<8	<2	13	85	<.2	<3	<3	<1	.87	.002	106	4	.62	89	<.01	6	1.04	<.01	.19	2	<1	70
FX 01-22	17	13	73	160	.9	2	<1	679	5.57	16	<8	<2	8	70	.7	<3	<3	1	.64	.003	74	3	.36	78	<.01	<3	.64	<.01	.18	<2	<1	195
FX 01-23	8	3	11	79	<.3	<1	<1	1535	5.14	2	8	<2	13	29	<.2	<3	<3	<1	.90	.015	100	3	.77	51	<.01	<3	1.46	<.01	.17	<2	<1	10
FX 01-24	2	2	6	55	<.3	1	<1	1678	4.83	<2	10	<2	12	57	<.2	<3	<3	<1	1.38	.015	90	2	.75	77	<.01	4	.85	<.01	.21	<2	<1	10
FX 01-25	1	2	13	133	<.3	<1	<1	1550	4.09	3	<8	<2	14	100	.2	<3	<3	<1	2.15	.010	140	1	.25	123	<.01	<3	.54	<.01	.22	<2	<1	20
FX 01-26	10	3	16	84	<.3	2	<1	1456	3.90	4	<8	<2	9	120	.3	<3	<3	<1	2.72	.019	85	1	.25	155	<.01	<3	.59	<.01	.26	<2	<1	10
FX 01-27	6	16	14	170	.5	13	6	1446	3.62	10	<8	<2	5	159	.9	<3	<3	2	4.46	.096	26	2	.38	131	<.01	<3	.82	<.01	.29	<2	<1	25
FX 01-28	5	4	17	131	<.3	3	<1	1858	4.04	3	<8	<2	6	64	.8	<3	3	<1	1.45	.013	43	2	.39	90	<.01	5	.83	.01	.29	<2	<1	<10
RE FX 01-28	5	5	19	131	<.3	3	<1	1925	4.20	3	<8	<2	7	66	.7	<3	<3	<1	1.51	.013	44	2	.40	92	<.01	5	.84	.01	.28	<2	<1	10
RRE FX 01-28	5	4	24	146	<.3	2	<1	1901	4.12	<2	<8	<2	5	65	.8	<3	<3	<1	1.48	.014	43	3	.39	90	<.01	<3	.81	.01	.28	<2	<1	15
FX 01-29	5	3	9	18	.3	2	<1	1816	3.90	<2	<8	<2	4	51	<.2	<3	<3	<1	1.59	.015	40	2	.55	42	<.01	<3	1.16	.01	.20	<2	<1	<10
FX 01-30	4	3	9	172	<.3	1	<1	2437	5.30	2	9	<2	4	63	.7	<3	3	<1	2.33	.014	34	2	.65	51	<.01	3	.56	.01	.25	<2	<1	20
FX 01-31	7	4	11	148	<.3	2	<1	1657	4.75	6	<8	<2	5	70	.8	<3	<3	<1	1.87	.015	43	2	.44	49	<.01	<3	1.06	.01	.22	<2	<1	15
FX 01-32	1	5	14	33	<.3	3	1	330	.83	2	<8	<2	8	17	.2	<3	<3	<1	.95	.081	10	5	.33	63	<.01	6	.39	<.01	.25	3	<1	<10
FX 01-33	6	8	29	405	.5	2	<1	1354	4.31	6	<8	<2	3	93	1.7	<3	<3	<1	3.00	.012	25	2	.56	68	<.01	4	.71	<.01	.29	<2	<1	50
FX 01-34	1	4	24	73	<.3	1	1	314	.63	2	<8	<2	8	24	.3	<3	<3	<1	1.07	.082	15	2	.12	46	<.01	7	.35	<.01	.20	<2	<1	<10
FX 01-35	8	8	18	34	.4	4	<1	1427	5.24	6	<8	<2	4	60	<.2	<3	<3	<1	1.81	.019	23	2	.55	74	<.01	<3	.51	<.01	.24	<2	<1	10
FX 01-36	8	14	22	851	.7	<1	<1	1666	5.31	12	<8	<2	5	115	3.9	3	<3	<1	3.13	.014	22	3	1.14	96	<.01	<3	.33	<.01	.24	<2	1	45
FX 02-01	4	8	8	28	<.3	2	2	1303	4.09	5	<8	<2	11	38	<.2	<3	<3	<1	2.23	.049	86	1	.25	135	<.01	4	.43	<.01	.26	<2	8	15
FX 02-02	6	5	8	7	<.3	1	1	483	2.45	5	<8	<2	22	69	<.2	4	<3	<1	3.08	.013	124	5	1.01	50	<.01	<3	.21	<.01	.16	3	3	45
FX 02-03	12	5	8	6	<.3	3	1	616	2.34	5	<8	<2	28	31	<.2	3	<3	<1	2.63	.008	197	4	.79	51	<.01	<3	.29	<.01	.20	<2	1	15
FX 02-04	10	4	12	10	<.3	2	<1	489	3.12	4	<8	<2	15	30	<.2	4	3	<1	2.27	.006	106	8	.62	28	<.01	4	.20	<.01	.16	3	1	30
RE FX 02-04	10	4	10	9	<.3	2	<1	492	3.15	3	<8	<2	15	30	<.2	3	3	<1	2.28	.006	106	8	.62	28	<.01	<3	.20	<.01	.18	3	1	45
RRE FX 02-04	10	4	11	9	<.3	3	<1	490	3.22	5	<8	<2	14	29	<.2	4	<3	<1	2.30	.006	107	6	.63	27	<.01	<3	.19	<.01	.17	<2	<1	25
FX 02-05	3	6	9	23	<.3	1	1	1119	3.76	<2	<8	<2	18	92	.2	<3	<3	<1	2.35	.033	113	2	1.03	114	<.01	3	.69	<.01	.26	<2	<1	25
FX 02-06	16	13	40	190	<.3	14	2	1408	4.64	18	<8	<2	11	148	1.7	5	<3	7	3.73	.037	54	2	.99	92	<.01	3	.39	<.01	.27	<2	<1	60
FX 02-07	4	10	21	16	<.3	9	7	481	2.18	9	<8	<2	18	68	<.2	<3	<3	2	1.27	.099	86	3	.38	75	<.01	9	.64	<.01	.31	<2	<1	<10
FX 02-08	4	7	13	30	<.3	6	4	1171	4.44	4	<8	<2	15	76	<.2	<3	<3	5	2.19	.073	72	6	.82	54	<.01	<3	.59	<.01	.24	<2	<1	15
FX 02-09	4	7	18	17	<.3	2	1	1267	3.94	5	<8	<2	16	82	<.2	3	<3	<1	1.49	.029	112	2	.37	59	<.01	3	.52	<.01	.31	<2	<1	10
FX 02-10	12	7	26	23	<.3	1	<1	1505	5.29	5	16	<2	11	104	<.2	<3	3	<1	1.56	.018	76	2	.62	58	<.01	3	.71	<.01	.27	<2	<1	<10
FX 03-01	3	9	18	66	.3	4	14	2178	5.91	6	<8	<2	5	231	.2	<3	<3	13	3.09	.250	29	2	1.12	49	<.01	7	.62	.01	.34	<2	<1	10
FX 03-02	17	7	34	245	<.3	3	1	2483	7.10	12	<8	<2	11	39	.6	3	<3	<1	.83	.013	61	2	.52	73	<.01	8	.41	<.01	.34	<2	<1	90
FX 03-03	13	9	62	867	<.3	2	<1	1854	11.71	23	<8	<2	8	35	1.9	5	<3	<1	.61	.013	44	2	.32	47	<.01	<3	.36	<.01	.29	<2	<1	310
STANDARD C3/AU-R	25	62	34	156	5.6	37	11	744	3.28	57	8	2	20	29	23.6	13	25	79	.54	.091	18	165	.61	151	.09	18	2.03	.04	.16	19	500	885
STANDARD G-2	1	2	4	38	<.3	6	4	477	1.83	<2	<8	<2	3	76	<.2	<3	<3	38	.59	.092	8	68	.56	226	.12	<3	1.03	.09	.46	2	1	<10

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 2-2-2 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 MASSIVE SULFIDE 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: CORE AU* - IGNITED, AQUA-REGIA/MIBK EXTRACT, GF/AA FINISHED.(10 GM) HG ANALYSIS BY FLAMELESS AA.
Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: SEP 8 1998 DATE REPORT MAILED: Sept 11/98 SIGNED BY..... D. TOYE, C.LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of the analysis only. Data ✓ FA ___

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	Hg ppb
FX 03-04	15	13	67	939	<.3	3	<1	1853	15.58	27	<8	<2	6	36	1.6	<3	<3	1	.70	.008	30	2	.33	36	<.01	<3	.30	<.01	.28	<2	1	385
FX 03-05	13	12	64	888	<.3	2	<1	1598	12.92	28	<8	<2	5	25	1.6	<3	<3	<1	.49	.010	34	2	.28	35	<.01	<3	.30	<.01	.27	<2	<1	340
FX 03-06	13	23	62	107	<.3	2	<1	674	11.99	30	<8	<2	4	15	<.2	<3	<3	1	.30	.009	28	2	.14	27	<.01	<3	.26	<.01	.23	<2	1	100
FX 03-07	6	4	19	57	<.3	2	<1	2288	5.64	3	<8	<2	12	78	.2	4	<3	<1	1.59	.010	102	6	.81	75	<.01	<3	.62	<.01	.23	<2	<1	10
FX 03-08	9	3	19	223	<.3	2	<1	1828	6.18	<2	<8	<2	10	86	.6	<3	<3	<1	1.77	.008	83	2	1.08	64	<.01	<3	1.65	<.01	.17	<2	<1	85
FX 03-09	4	3	9	35	<.3	1	1	1663	3.23	4	<8	<2	4	50	<.2	<3	<3	<1	1.05	.027	32	1	.28	109	<.01	<3	.38	.01	.23	<2	<1	<10
FX 03-10	16	2	7	56	<.3	1	1	1265	3.08	4	<8	<2	3	60	<.2	<3	<3	<1	1.26	.032	31	1	.33	142	<.01	<3	.48	<.01	.20	<2	<1	30
FX 03-11	8	3	5	111	<.3	1	1	950	2.37	3	<8	<2	4	84	<.2	<3	<3	<1	1.53	.031	36	1	.37	136	<.01	3	.34	<.01	.19	<2	<1	60
FX 03-12	6	3	13	23	<.3	2	1	984	2.32	3	<8	<2	7	56	<.2	<3	<3	<1	1.22	.026	47	1	.33	184	<.01	5	.35	<.01	.21	<2	<1	15
FX 03-13	4	3	41	139	.3	2	<1	1488	4.38	9	<8	<2	6	128	.3	7	<3	<1	1.26	.026	44	2	.46	169	<.01	<3	1.11	.02	.21	<2	<1	110
FX 03-14	4	6	22	330	<.3	4	<1	1937	4.30	5	<8	<2	7	142	.8	<3	<3	<1	.73	.023	75	8	.23	100	<.01	<3	.25	.03	.15	<2	<1	435
FX 03-15	5	4	11	65	<.3	1	<1	2277	5.18	3	<8	<2	15	158	<.2	<3	<3	<1	1.84	.010	88	4	.38	295	<.01	<3	.69	.02	.15	2	<1	25
RE FX 03-15	5	5	11	65	<.3	1	<1	2257	5.13	3	<8	<2	15	157	<.2	<3	<3	<1	1.82	.010	91	4	.38	299	<.01	<3	.69	.02	.14	<2	<1	15
RRE FX 03-15	5	5	10	63	<.3	4	<1	2267	5.07	3	<8	<2	15	158	.3	<3	<3	<1	1.80	.010	94	4	.37	346	<.01	<3	.64	.02	.15	<2	<1	25
FX 03-16	4	5	19	58	<.3	1	<1	1898	4.62	4	<8	<2	7	93	.2	3	<3	<1	.79	.017	43	6	.27	136	<.01	<3	.32	.03	.18	2	<1	25
FX 03-17	2	3	12	58	<.3	3	<1	2368	5.15	3	<8	<2	10	115	<.2	<3	<3	<1	.98	.019	65	3	.39	449	<.01	<3	.40	.03	.18	<2	<1	<10
FX 03-18	1	2	4	45	<.3	1	<1	1613	4.91	2	<8	<2	12	72	<.2	<3	<3	<1	.74	.020	115	3	.42	145	<.01	<3	.63	.01	.22	<2	<1	10
FX 03-19	5	4	13	52	<.3	3	<1	2289	5.22	5	<8	<2	9	104	<.2	<3	<3	<1	1.13	.020	59	4	.40	272	<.01	<3	.25	.03	.16	<2	<1	10
FX 03-20	3	3	5	67	<.3	1	<1	1878	5.34	<2	<8	<2	11	115	<.2	<3	<3	<1	1.01	.018	88	4	.40	312	<.01	<3	.56	.01	.16	<2	<1	<10
FX 03-21	2	4	14	23	<.3	3	<1	1187	3.38	3	<8	<2	6	91	<.2	3	<3	<1	.58	.016	40	3	.24	116	<.01	<3	.33	.03	.20	<2	5	10
FX 03-22	6	3	9	58	<.3	1	<1	2436	5.22	5	<8	<2	9	91	<.2	3	<3	<1	.97	.027	73	2	.42	144	<.01	<3	.41	.02	.21	<2	2	25
FX 03-23	2	3	7	50	<.3	2	1	2109	5.00	3	<8	<2	8	88	<.2	3	<3	<1	.98	.037	70	3	.38	144	<.01	<3	.69	.01	.24	<2	1	<10
FX 04-01	4	4	6	34	<.3	2	<1	2676	7.79	2	<8	<2	16	24	<.2	6	<3	1	.64	.010	131	6	.91	42	<.01	<3	.31	<.01	.16	2	1	15
FX 04-02	3	8	11	6	<.3	4	1	883	2.82	2	<8	<2	28	43	<.2	3	<3	1	2.63	.006	195	4	1.04	55	<.01	<3	.31	<.01	.20	<2	1	95
FX 04-03	7	11	17	12	<.3	3	1	1847	5.72	9	<8	<2	19	61	.2	5	<3	3	3.15	.006	154	4	1.35	50	<.01	<3	.29	<.01	.24	2	1	185
FX 04-04	29	25	87	6	.3	49	2	138	1.56	57	<8	<2	4	20	<.2	10	<3	57	.33	.023	22	7	.11	27	<.01	<3	.21	<.01	.14	<2	1	60
FX 04-05	5	16	8	33	<.3	5	<1	4040	10.96	18	8	<2	14	35	<.2	4	<3	4	1.98	.006	64	7	1.85	34	<.01	<3	.25	<.01	.21	3	<1	35
RE FX 04-05	5	17	6	35	<.3	4	<1	4001	10.76	16	<8	<2	13	35	<.2	3	<3	4	1.97	.005	63	6	1.83	33	<.01	<3	.24	<.01	.20	3	<1	40
RRE FX 04-05	5	15	7	33	<.3	7	<1	3992	10.67	16	<8	<2	13	33	<.2	<3	<3	4	1.79	.005	62	5	1.77	33	<.01	<3	.25	.01	.21	<2	<1	40
FX 04-06	41	34	58	12	.8	77	3	546	3.17	65	<8	<2	9	6	<.2	17	<3	93	.09	.017	46	7	.21	25	<.01	3	.22	<.01	.14	2	2	220
FX 04-07	3	15	22	11	.3	9	18	1394	4.76	9	<8	<2	<2	72	.3	7	<3	20	2.53	.281	23	3	.86	35	<.01	5	.51	<.01	.32	<2	<1	40
FX 04-08	7	12	25	60	<.3	5	8	2016	5.54	9	<8	<2	7	41	.6	4	<3	8	1.50	.124	42	5	.86	22	<.01	<3	.38	<.01	.24	2	<1	45
FX 04-09	7	5	3	26	<.3	4	<1	1933	5.26	<2	<8	<2	13	75	<.2	<3	<3	1	1.30	.021	89	4	.77	26	<.01	<3	.47	<.01	.21	<2	<1	<10
FX 04-10	14	9	29	17	<.3	4	1	1051	2.94	7	<8	<2	16	68	.3	3	<3	3	1.17	.015	80	3	.55	56	<.01	<3	.43	<.01	.24	<2	<1	25
FX 04-11	4	2	26	24	<.3	1	<1	3296	7.12	<2	<8	<2	15	262	.2	10	<3	1	3.27	.009	92	1	1.54	72	<.01	<3	.55	<.01	.18	<2	<1	<10
FX 04-12	6	6	9	10	<.3	3	2	1881	3.12	3	<8	<2	9	102	<.2	6	<3	<1	4.79	.008	55	2	1.49	53	<.01	<3	.26	<.01	.23	<2	<1	15
STANDARD C3/AU-R	25	62	33	153	5.3	35	11	715	3.19	56	17	2	20	28	23.1	17	23	77	.51	.088	18	160	.59	144	.08	18	1.97	.04	.14	19	529	865
STANDARD G-2	1	3	3	39	<.3	8	4	483	1.84	<2	<8	<2	4	75	<.2	<3	<3	38	.59	.093	8	71	.56	223	.12	<3	1.02	.10	.47	2	<1	<10

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

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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	Hg ppb
FX 04-13	2	5	4	31	.3	1	1	2367	3.99	2	<8	<2	14	12	<.2	5	3	<1	.86	.034	83	1	.68	61	<.01	10	.36	<.01	.27	<2	1	25
FX 04-14	2	3	3	35	.3	1	1	2329	4.33	3	<8	<2	13	13	.2	4	<3	1	1.08	.031	65	1	.76	60	<.01	3	.35	<.01	.25	<2	<1	15
FX 04-15	9	4	4	58	<.3	2	1	1864	4.15	3	<8	<2	8	10	.3	<3	<3	<1	1.03	.024	27	1	.69	75	<.01	7	.34	.01	.23	<2	<1	25
FX 04-16	34	5	6	75	<.3	2	<1	2184	5.75	<2	<8	<2	18	52	.2	<3	<3	1	1.59	.015	140	4	.73	109	<.01	7	.65	.01	.23	<2	<1	20
FX 04-17	9	8	9	114	.3	4	<1	1860	5.69	<2	<8	<2	18	31	.2	5	<3	1	.94	.006	147	3	.66	61	<.01	8	.98	<.01	.22	<2	<1	35
FX 04-18	4	7	22	109	.3	2	<1	1974	5.56	<2	<8	<2	18	65	.3	<3	<3	<1	1.47	.012	139	5	.61	69	<.01	7	.53	.01	.20	2	<1	40
FX 04-19	6	3	7	23	<.3	1	1	1605	3.76	6	<8	<2	9	52	<.2	<3	<3	<1	1.37	.027	58	1	.42	102	<.01	10	.39	<.01	.25	<2	<1	<10
FX 04-20	7	3	4	37	.5	1	1	2448	4.64	4	<8	<2	15	30	<.2	<3	<3	1	.85	.029	87	1	.41	115	<.01	3	.35	<.01	.26	<2	7	10
FX 04-21	18	4	28	319	.7	2	<1	2253	6.00	11	<8	<2	5	75	1.0	<3	<3	<1	2.20	.017	13	1	.73	89	<.01	7	.30	<.01	.22	<2	2	125
RE FX 04-21	18	5	32	336	.8	3	<1	2304	6.13	12	<8	<2	6	77	1.1	3	<3	1	2.26	.018	12	2	.75	89	<.01	4	.31	<.01	.23	<2	5	130
RRE FX 04-21	18	5	30	268	.8	2	<1	2340	6.00	13	<8	<2	4	80	1.0	4	<3	1	2.38	.016	11	3	.77	89	<.01	8	.29	<.01	.22	<2	2	120
FX 04-22	12	4	16	81	.6	3	<1	2657	4.87	11	<8	<2	5	180	.3	<3	<3	<1	2.86	.020	13	2	.84	117	<.01	3	.28	<.01	.19	<2	1	<10
FX 04-23	6	2	8	240	<.3	2	<1	2415	6.24	5	<8	<2	12	36	.7	<3	<3	1	.39	.022	53	2	.39	121	<.01	7	.32	<.01	.23	<2	<1	85
FX 04-24	9	5	79	82	.7	4	1	1238	3.68	10	<8	<2	8	133	.2	<3	<3	1	.86	.021	26	2	.29	137	<.01	7	.47	<.01	.21	<2	1	105
FX 04-25	3	4	15	129	.3	2	<1	599	2.49	5	<8	<2	7	79	.3	<3	3	1	.82	.016	33	2	.29	102	<.01	5	.93	.01	.15	<2	1	50
STANDARD C3/AU-R	24	62	32	152	6.0	36	11	708	3.11	55	18	<2	22	28	22.7	20	24	77	.51	.088	16	158	.58	143	.09	20	1.81	.03	.16	20	554	890
STANDARD G-2	1	4	3	40	<.3	7	4	487	1.86	<2	<8	<2	5	70	<.2	<3	<3	40	.58	.093	7	73	.57	218	.12	<3	.94	.07	.46	3	<1	10

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

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ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE (604) 253-3158 FAX (604) 253-1716
(ISO 9002 Accredited Co.)

GEOCHEMICAL ANALYSIS CERTIFICATE

Atna Resources Ltd. PROJECT FOX File # 9803061 Page 1

1550 - 409 Granville St., Vancouver BC V6C 1T2 Submitted by: Peter Holbek

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
L2+500E 1+80ON	31	6	46	59	<.3	5	1	171	5.89	16	10	<2	2	7	<.2	6	<3	27	.09	.076	77	8	.04	244	.02	<3	.68	.01	.04	<2
L2+500E 1+75ON	11	8	171	402	<.3	8	3	711	4.09	21	<8	<2	3	14	.5	<3	<3	13	.22	.078	87	12	.13	616	.01	<3	.94	.01	.05	<2
L2+500E 1+70ON	11	12	296	348	<.3	7	4	1145	4.98	27	<8	<2	2	16	.2	3	<3	17	.14	.105	93	7	.11	1332	.01	<3	.85	.01	.09	<2
L2+500E 1+65ON	16	13	391	509	.5	9	4	2181	7.49	56	<8	<2	10	21	.6	11	<3	13	.08	.084	140	6	.10	1010	.01	<3	.87	.02	.13	<2
L2+500E 1+60ON	14	13	184	1064	.5	12	4	2449	8.90	38	<8	<2	10	15	2.1	11	<3	12	.13	.083	126	7	.10	549	.01	<3	.99	.01	.08	<2
L2+500E 1+55ON	15	14	158	336	.4	12	9	2335	6.21	26	<8	<2	5	14	.6	6	<3	16	.20	.099	118	4	.13	1055	<.01	<3	.72	.01	.10	<2
L2+500E 1+40ON	16	18	68	157	<.3	16	4	1515	3.81	19	<8	<2	4	8	.6	<3	<3	47	.03	.052	107	13	.12	111	.02	<3	.78	<.01	.04	<2
L2+500E 1+35ON	9	10	18	72	<.3	14	6	732	3.73	9	9	<2	<2	9	<.2	<3	<3	17	.04	.090	73	9	.09	76	.01	<3	.72	<.01	.06	<2
L2+500E 1+30ON	7	6	14	62	<.3	6	3	756	3.11	5	<8	<2	2	8	<.2	<3	<3	7	.04	.099	124	5	.06	114	<.01	<3	.66	<.01	.06	<2
L2+500E 1+25ON	5	9	18	80	<.3	11	6	902	3.21	8	<8	<2	<2	12	<.2	<3	<3	14	.07	.173	38	5	.06	97	<.01	<3	.62	.01	.06	<2
RE L2+500E 1+25ON	5	8	19	80	<.3	11	6	922	3.18	7	<8	<2	<2	12	<.2	<3	<3	14	.07	.174	38	5	.06	97	<.01	<3	.62	.01	.06	<2
L2+500E 1+20ON	8	7	87	269	<.3	12	8	1704	7.17	9	<8	<2	5	62	<.2	<3	<3	9	.16	.128	49	5	.15	367	<.01	<3	1.56	.01	.34	<2
L2+500E 1+15ON	8	12	73	343	1.1	18	10	4060	7.91	21	<8	<2	4	38	<.2	5	<3	17	.39	.119	67	12	.17	374	<.01	<3	1.41	.01	.16	<2
L2+500E 1+10ON	7	5	39	108	<.3	7	4	1297	4.85	12	<8	<2	5	51	.3	3	<3	8	.15	.077	65	7	.19	228	<.01	<3	1.60	.01	.15	<2
L2+500E 1+05ON	11	8	63	173	<.3	9	4	1209	5.25	16	<8	<2	4	41	.2	<3	<3	14	.05	.085	74	9	.10	116	.01	<3	.90	.01	.11	<2
L2+500E 1+00N BL	11	12	41	155	<.3	11	4	1306	4.53	15	<8	<2	4	10	.3	<3	3	20	.04	.072	77	11	.18	62	.01	<3	1.27	.01	.06	<2
L2+650E 1+80ON	11	20	53	275	.5	58	19	1742	7.64	10	<8	<2	8	51	.6	7	<3	87	.46	.158	99	62	1.56	1696	.29	<3	2.35	.04	.29	<2
L2+650E 1+75ON	6	7	194	160	<.3	4	2	906	2.56	14	<8	<2	<2	15	.5	4	<3	14	.05	.069	54	5	.07	969	.01	<3	.81	.02	.11	<2
L2+650E 1+70ON	13	11	2434	380	3.8	6	4	1556	5.89	29	<8	<2	10	15	.8	13	<3	10	.03	.044	58	4	.05	301	.01	<3	.47	.01	.22	<2
L2+650E 1+65ON	14	12	3308	417	4.9	6	4	1942	6.47	31	<8	<2	10	14	.7	19	<3	10	.03	.051	64	4	.05	337	.01	<3	.49	.01	.25	<2
L2+650E 1+60ON	16	10	2481	324	9.7	6	6	1687	6.09	33	<8	<2	9	16	.9	14	<3	10	.04	.044	57	2	.04	164	<.01	<3	.38	.02	.36	<2
L2+650E 1+55ON	19	28	113	403	1.0	20	19	3862	6.78	23	<8	<2	7	16	1.9	9	3	30	.08	.114	140	6	.11	330	.01	<3	.75	.02	.07	<2
L2+650E 1+50ON	32	27	102	383	.9	20	18	4622	8.68	26	<8	<2	16	17	.9	7	<3	27	.05	.093	171	4	.10	194	.01	<3	.78	.01	.05	<2
L2+650E 1+45ON	31	22	77	391	1.6	12	3	7218	11.36	13	<8	<2	15	15	.8	10	<3	15	.14	.046	180	4	.18	296	.01	<3	.86	.01	.05	<2
L2+650E 1+40ON	17	40	37	729	<.3	8	2	1923	6.40	10	8	<2	19	9	1.3	4	<3	7	.10	.024	163	4	.12	89	<.01	<3	1.07	<.01	.06	<2
L2+650E 1+35ON	5	4	16	27	<.3	3	1	1542	2.34	2	12	<2	19	10	.4	<3	<3	<1	.06	.028	203	2	.09	202	<.01	<3	.91	<.01	.07	<2
L2+650E 1+30ON	9	13	26	111	<.3	19	6	1083	4.28	13	<8	<2	<2	10	.3	<3	<3	17	.05	.128	47	10	.13	80	.01	<3	.93	<.01	.05	<2
L2+650E 1+25ON	3	2	21	138	<.3	2	3	1682	4.26	<2	<8	<2	7	78	.4	<3	<3	<1	.60	.072	84	1	.43	115	<.01	<3	2.41	<.01	.08	<2
L2+650E 1+20ON	5	5	46	265	<.3	5	4	1356	2.68	7	<8	<2	2	13	.3	<3	<3	8	.08	.105	52	6	.11	68	<.01	<3	.87	<.01	.05	<2
L25+00E 9+50N	4	9	10	70	<.3	5	2	411	1.74	5	<8	<2	<2	8	<.2	<3	<3	16	.07	.094	31	6	.08	46	.01	<3	.69	.03	.06	<2
L25+00E 9+00N	9	11	25	152	<.3	8	4	861	4.40	16	<8	<2	<2	8	.2	<3	<3	18	.03	.089	69	8	.07	83	.01	<3	.66	<.01	.05	<2
L25+00E 8+50N	5	11	21	64	<.3	6	3	788	2.45	9	<8	<2	<2	8	.2	<3	<3	21	.06	.076	45	9	.08	74	.01	<3	.78	.01	.04	<2
L25+00E 8+00N	8	10	40	171	<.3	14	5	1444	4.79	12	<8	<2	8	9	.5	4	<3	20	.07	.062	75	16	.18	79	.03	<3	1.09	<.01	.06	<2
L25+00E 7+50N	7	14	29	86	.3	12	7	1040	3.69	15	<8	<2	8	11	.6	<3	<3	16	.08	.067	108	10	.14	305	.02	<3	.74	<.01	.11	<2
L25+00E 7+00N	6	9	22	90	<.3	10	6	1005	3.52	11	<8	<2	5	9	.2	<3	<3	16	.07	.061	87	11	.14	464	.01	<3	.78	<.01	.09	<2
STANDARD C3	27	67	38	170	5.8	38	12	809	3.50	58	15	4	21	30	25.1	20	25	85	.57	.093	18	182	.62	156	.09	18	1.97	.04	.17	17
STANDARD G-2	1	3	5	44	<.3	8	4	553	2.09	<2	<8	<2	4	77	.2	3	<3	44	.65	.101	7	83	.62	256	.13	<3	1.01	.08	.50	2

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 2-2-2 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 MASSIVE SULFIDE AND LIMITED FOR NA K AND AL.
- SAMPLE TYPE: SOIL Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: JUL 24 1998 **DATE REPORT MAILED:** July 29/98 **SIGNED BY** ..... D. TOYE, C.LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of the analysis only.

Data FA

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
L25+00E 6+50N	6	9	31	103	<.3	11	7	1435	4.24	16	<8	<2	2	10	1.1	<3	5	26	.06	.114	74	15	.14	139	.02	<3	.84	<.01	.06	<2
L25+00E 6+00N	5	9	21	92	<.3	12	5	537	3.30	12	<8	<2	<2	12	.6	<3	<3	29	.08	.064	56	17	.15	367	.01	<3	.95	<.01	.06	<2
RE L25+00E 6+00N	5	10	19	90	<.3	11	4	520	3.25	12	<8	<2	<2	12	.5	<3	<3	29	.08	.063	55	17	.14	360	.01	<3	.94	<.01	.05	<2
L25+00E 5+50N	7	7	24	91	<.3	9	3	1105	2.82	12	<8	<2	<2	22	.4	<3	<3	28	.22	.063	58	13	.13	528	.01	<3	.81	<.01	.07	<2
L25+00E 5+00N	4	8	17	97	<.3	13	5	518	3.43	10	<8	<2	<2	13	.8	<3	<3	24	.14	.129	43	23	.22	150	<.01	<3	.88	<.01	.08	<2
L25+00E 4+50N	4	8	16	80	<.3	7	4	288	2.42	10	<8	<2	<2	11	<.2	<3	<3	29	.02	.089	38	7	.07	73	<.01	<3	.83	<.01	.07	<2
L25+00E 4+00N E.O.L	5	8	19	87	<.3	12	6	688	3.42	8	<8	<2	<2	9	.7	<3	<3	21	.08	.104	71	17	.19	119	.01	<3	1.01	.01	.06	<2
L26+50E 9+50N	13	12	40	227	<.3	17	8	1448	4.03	19	<8	<2	8	14	1.3	<3	<3	15	.06	.056	114	10	.15	82	.01	<3	1.01	<.01	.06	<2
L2+650E 9+00N	14	14	94	315	.5	14	6	3902	5.43	22	<8	<2	7	9	1.8	<3	<3	20	.03	.069	91	10	.11	559	.01	<3	.84	<.01	.08	<2
L26+50E 8+50N	12	12	42	178	<.3	10	4	1443	3.59	20	<8	<2	<2	8	1.1	<3	<3	20	.03	.067	83	9	.08	127	.01	<3	.81	<.01	.07	<2
L26+50E 8+00N	13	11	39	185	<.3	7	2	1578	3.03	18	<8	<2	3	8	.8	<3	<3	16	.03	.065	101	6	.07	75	.01	<3	.74	.01	.07	<2
L2+650E 7+50N	19	14	101	190	1.0	7	2	362	3.07	31	<8	<2	4	10	.5	6	<3	15	.02	.059	143	6	.05	52	<.01	<3	.52	<.01	.08	<2
L26+50E 7+00N	8	8	31	85	<.3	4	1	166	1.63	17	<8	<2	<2	15	.4	<3	<3	16	.03	.062	67	5	.04	83	.01	<3	.64	.01	.05	<2
L26+50E 6+50N	10	12	40	127	.7	8	2	325	2.23	20	<8	<2	<2	13	.6	<3	<3	18	.04	.061	99	6	.08	76	.01	<3	.63	.01	.06	<2
L26+50E 6+00N	4	10	12	51	<.3	6	6	361	3.77	9	<8	<2	<2	6	.5	<3	<3	34	.02	.135	31	7	.08	181	<.01	<3	1.14	.01	.05	<2
L26+50E 5+50N	5	9	23	109	<.3	12	9	1166	5.13	15	<8	<2	<2	20	1.1	<3	<3	30	.23	.157	43	13	.18	412	<.01	<3	1.41	<.01	.06	<2
L2650E 5+00N	7	12	29	85	.4	17	8	3698	5.24	13	<8	<2	<2	10	.6	<3	<3	30	.06	.142	52	21	.26	210	.01	<3	1.63	.01	.09	<2
L26+50E 4+30N	1	3	4	17	<.3	1	1	124	1.16	<2	<8	<2	<2	8	<.2	<3	<3	10	.07	.071	14	2	.05	70	<.01	<3	.65	.02	.03	<2
L2650E 4+00N E.O.L	4	10	18	64	<.3	7	3	202	1.92	9	<8	<2	<2	16	<.2	<3	<3	26	.02	.060	37	5	.04	74	<.01	<3	.55	.01	.05	<2
L26+50E 1+50N	12	6	84	101	<.3	3	1	661	7.00	19	8	<2	11	44	.4	<3	<3	7	.01	.076	95	4	.08	170	<.01	<3	.83	.01	.24	<2
L26+50E 1+00N	8	10	38	74	<.3	12	5	1236	3.67	13	<8	<2	2	15	.5	<3	<3	20	.16	.061	59	13	.18	82	.01	<3	.84	.01	.04	<2
L26+50E 1+05N	16	14	65	170	<.3	13	6	2108	4.80	19	<8	<2	17	13	1.3	<3	<3	16	.07	.068	153	8	.16	88	.01	<3	.98	<.01	.07	<2
L26+50E 1+00N	11	10	54	167	<.3	9	4	738	3.53	20	<8	<2	2	44	.9	<3	<3	19	.04	.079	62	8	.12	72	<.01	<3	.93	<.01	.08	<2
STANDARD C3	27	66	37	167	5.7	37	12	788	3.37	59	18	2	23	30	25.3	17	24	83	.56	.092	17	174	.61	153	.09	20	1.94	.04	.15	15
STANDARD G-2	1	3	<3	43	<.3	8	4	546	2.06	<2	<8	<2	4	76	<.2	<3	<3	43	.63	.098	5	80	.61	236	.13	<3	1.02	.08	.49	2

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

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Data FA

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PH(604)253-3158 FAX(604)253-1716
(ISO 9002 Accredited Co.)

GEOCHEMICAL ANALYSIS CERTIFICATE

Atna Resources Ltd. PROJECT FOX File # 9803365 Page 1

1550 - 409 Granville St., Vancouver BC V6C 1T2 Submitted by: Peter Holbek

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	Hg ppb
L17+00E 10+00N	5	5	14	38	<.3	4	2	412	2.57	9	<8	<2	<2	5	.2	<3	<3	14	.02	.053	48	7	.05	42	.01	<3	.59	.02	.05	<2	50
L17+00E 9+50N	6	12	10	54	<.3	39	8	265	4.06	7	<8	<2	2	7	<.2	<3	<3	42	.04	.050	47	93	.85	53	.05	<3	2.01	.01	.11	<2	30
L17+00E 9+00N	6	12	17	58	<.3	42	11	659	5.01	7	<8	<2	<2	10	<.2	<3	<3	43	.05	.056	58	88	1.00	59	.06	<3	1.95	.01	.07	<2	35
L17+00E 8+50N	11	6	26	42	<.3	6	3	825	3.57	13	<8	<2	7	21	.2	<3	3	5	.12	.052	109	4	.06	98	.01	<3	.32	.01	.11	<2	60
L17+00E 8+00N	8	14	15	67	.3	21	6	669	3.97	10	<8	<2	<2	6	.2	<3	<3	33	.02	.062	62	56	.30	60	.02	<3	1.31	.01	.07	<2	45
L17+00E 7+50N	11	11	37	94	<.3	17	6	615	4.44	14	<8	<2	<2	13	<.2	<3	<3	26	.14	.065	67	35	.35	104	.01	<3	1.38	.01	.08	<2	35
L17+00E 7+00N	9	10	19	92	<.3	10	5	754	4.13	12	<8	<2	5	8	<.2	<3	<3	19	.03	.058	82	15	.13	63	.02	<3	.81	.01	.10	<2	35
L17+00E 6+50N	8	13	23	84	<.3	16	7	748	3.48	10	<8	<2	6	11	.2	<3	<3	18	.08	.046	87	24	.25	101	.02	<3	1.12	.01	.12	<2	30
L17+00E 6+00N	4	14	13	66	<.3	31	9	512	3.09	5	<8	<2	<2	9	<.2	<3	4	29	.05	.086	49	74	.79	76	.02	<3	1.55	.01	.08	<2	30
L17+00E 5+50N	3	13	20	60	<.3	33	12	546	3.92	6	<8	<2	<2	7	.2	<3	<3	34	.04	.088	39	99	.84	115	.01	<3	1.70	.01	.06	<2	40
L17+00E 5+00N	7	10	59	94	<.3	15	5	375	2.56	11	<8	<2	<2	11	.2	<3	3	25	.05	.064	75	48	.29	58	.02	<3	.90	.01	.07	<2	25
L17+00E 4+50N	2	18	12	80	<.3	49	16	960	4.61	4	<8	<2	<2	8	.5	<3	<3	47	.05	.109	40	186	1.14	115	.02	<3	2.22	.01	.07	<2	35
L17+00E 4+00N	3	5	8	42	<.3	6	2	225	1.17	<2	<8	<2	<2	9	.3	<3	<3	19	.06	.194	28	19	.06	78	.01	<3	.73	.01	.06	<2	80
L17+00E 3+50N	2	9	8	41	<.3	13	6	535	2.04	5	<8	<2	<2	11	.3	<3	<3	30	.09	.101	23	46	.23	91	.01	<3	.86	.01	.06	<2	25
L17+00E 3+00N	3	52	11	74	<.3	111	35	2124	7.41	12	<8	<2	<2	22	<.2	<3	<3	53	.40	.139	49	219	1.51	339	.01	<3	2.15	.01	.12	<2	65
L17+00E 2+50N	3	12	15	46	<.3	26	8	311	3.13	5	<8	<2	<2	6	.2	<3	<3	28	.05	.086	36	80	.71	56	.01	<3	1.63	.01	.07	<2	35
L17+00E 2+00N	3	15	12	61	<.3	32	10	459	3.67	3	<8	<2	<2	26	<.2	<3	<3	30	.52	.086	31	63	.86	154	.01	<3	1.50	.01	.06	<2	45
L17+00E 1+50N	3	11	9	74	<.3	26	7	357	2.89	3	9	<2	<2	33	.2	<3	<3	29	.60	.213	25	59	.60	186	.01	<3	1.62	.01	.06	<2	40
L17+00E 1+00N	2	9	7	41	<.3	16	5	330	2.02	2	<8	<2	<2	7	.2	<3	<3	26	.04	.083	17	43	.38	49	.01	<3	1.05	.02	.05	<2	40
L17+00E 0+50N	3	29	29	99	<.3	89	24	1056	5.34	8	<8	<2	7	15	<.2	<3	<3	58	.15	.083	109	124	1.83	150	.08	<3	2.46	.01	.13	<2	45
L17+00E 0+00N	1	14	8	50	<.3	28	7	238	2.31	3	<8	<2	<2	13	<.2	<3	<3	33	.13	.071	30	79	.61	485	.02	<3	1.41	.03	.05	<2	10
L17+00E 0+50S	1	25	21	69	<.3	71	22	814	5.04	4	<8	<2	<2	11	.2	<3	<3	54	.13	.084	42	220	1.48	121	.02	<3	2.43	.01	.06	<2	45
L17+00E 1+00S	3	29	31	115	.5	121	24	1491	5.28	6	<8	<2	8	18	.4	<3	3	46	.52	.074	146	275	2.18	972	.03	<3	2.37	.01	.10	<2	110
L17+00E 1+50S	4	20	11	111	<.3	73	16	481	4.70	4	<8	<2	<2	19	.3	<3	<3	47	.42	.152	30	246	1.57	288	.02	<3	2.42	.01	.07	<2	10
RE L17+00E 1+50S	4	22	10	115	<.3	77	17	507	4.81	4	<8	<2	<2	19	.4	<3	4	47	.43	.152	30	257	1.62	281	.02	<3	2.46	.01	.07	<2	<10
L17+00E 2+00S	1	20	46	50	<.3	65	15	2094	7.22	15	<8	<2	<2	43	<.2	<3	<3	35	2.84	.093	37	149	2.37	274	.02	<3	2.21	.01	.06	<2	110
L19+00E 14+00N	4	20	39	138	<.3	43	18	667	7.76	3	<8	<2	27	23	<.2	<3	<3	33	.38	.088	39	134	1.33	520	.03	<3	2.31	.01	.05	<2	20
L19+00E 13+50N	11	10	53	161	<.3	8	4	653	4.47	14	<8	<2	<2	24	<.2	<3	<3	22	.41	.123	119	18	.18	187	.01	<3	1.30	.01	.07	<2	1135
L19+00E 13+00N	3	7	11	74	<.3	17	5	200	2.65	<2	<8	<2	<2	21	<.2	<3	<3	23	.61	.082	34	41	.57	92	.02	<3	1.22	.01	.05	<2	45
L19+00E 12+50N	3	17	19	98	<.3	47	17	984	5.99	4	<8	<2	<2	6	.5	<3	<3	68	.03	.067	31	103	1.30	67	.05	<3	2.60	.01	.05	<2	60
L19+00E 12+00N	11	14	44	154	.4	19	7	1613	5.02	18	<8	<2	<2	15	.5	<3	<3	16	.21	.075	144	27	.31	212	.01	<3	.82	.01	.10	<2	45
L19+00E 11+50N	9	13	32	124	<.3	17	8	1320	4.58	16	<8	<2	<2	7	.2	<3	<3	28	.03	.070	92	44	.35	94	.02	<3	1.06	.01	.07	<2	35
L19+00E 11+00N	9	13	27	118	<.3	17	6	865	4.29	14	<8	<2	<2	8	.2	<3	<3	27	.03	.064	89	37	.41	123	.02	<3	1.16	.01	.08	<2	25
L19+00E 10+50N	10	6	27	38	<.3	11	4	413	3.55	12	<8	<2	4	13	<.2	<3	3	10	.18	.048	111	19	.18	50	.01	<3	.54	.01	.06	<2	20
L19+00E 10+00N	13	22	31	69	.7	33	10	1151	5.24	20	<8	<2	7	20	.2	<3	<3	19	.34	.072	132	44	.37	71	.03	<3	.65	<.01	.09	<2	80
STANDARD C3	24	61	36	161	5.2	35	12	764	3.40	53	24	2	18	29	22.9	17	19	78	.52	.088	17	164	.58	131	.08	15	1.88	.05	.18	15	910
STANDARD G-2	2	1	4	42	<.3	8	5	562	2.32	<2	<8	<2	2	78	<.2	<3	<3	41	.71	.095	8	81	.60	304	.13	<3	1.44	.26	.70	3	<10

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 2-2-2 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 MASSIVE SULFIDE AND LIMITED FOR NA K AND AL.
- SAMPLE TYPE: SOIL HG ANALYSIS BY FLAMELESS AA. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: AUG 10 1998 **DATE REPORT MAILED:** Aug 14/98 **SIGNED BY** D. TOYE, C.LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of the analysis only.

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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	Hg ppb
L19+00E 9+50N	7	18	17	63	<.3	26	9	1194	4.48	11	<8	<2	<2	7	<.2	<3	<3	47	.03	.079	57	69	.48	59	.04	<3	1.44	.01	.06	<2	65
L19+00E 9+00N	9	11	19	80	<.3	21	8	1240	4.65	10	<8	<2	4	6	<.2	<3	<3	27	.02	.049	74	52	.39	50	.03	<3	1.11	.01	.07	<2	35
L19+00E 8+50N	7	8	14	78	<.3	23	7	696	5.10	9	<8	<2	2	6	<.2	<3	<3	38	.03	.059	53	57	.46	61	.02	<3	1.34	.01	.06	<2	35
L19+00E 8+00N	10	9	20	104	.5	14	5	933	5.38	14	<8	<2	6	7	<.2	<3	3	16	.03	.050	76	32	.22	50	.01	<3	1.15	<.01	.06	<2	30
L19+00E 7+50N	5	9	27	69	.4	12	6	345	3.53	12	<8	<2	<2	10	<.2	<3	<3	41	.02	.043	34	30	.29	50	.02	<3	1.03	.01	.05	<2	25
L19+00E 7+00N	8	9	24	76	.4	8	4	524	3.53	13	<8	<2	2	8	<.2	<3	3	32	.01	.059	57	18	.08	38	.01	<3	.60	<.01	.05	<2	20
L19+00E 6+50N	2	5	8	27	.3	5	2	142	1.11	5	<8	<2	<2	6	<.2	<3	<3	19	.02	.043	30	17	.12	40	.01	<3	.62	.01	.06	<2	<10
L19+00E 6+00N	9	9	13	105	.3	7	3	1980	4.39	6	<8	<2	8	8	<.2	<3	<3	15	.07	.082	64	17	.23	83	.01	<3	1.59	.01	.07	<2	45
L19+00E 5+50N	5	9	18	66	.4	10	5	847	2.40	7	<8	<2	<2	8	<.2	<3	3	38	.03	.066	46	28	.15	100	.01	<3	.71	.01	.12	<2	20
L19+00E 5+00N	19	26	40	264	<.3	11	2	197	3.02	29	<8	<2	<2	25	.5	<3	3	26	.01	.076	31	7	.01	64	<.01	<3	.48	.01	.04	<2	15
L19+00E 4+50N	4	13	31	82	<.3	37	13	1129	5.81	13	<8	<2	<2	11	.2	<3	<3	66	.11	.098	33	78	.70	122	.05	<3	1.75	.01	.06	<2	55
RE L19+00E 4+50N	3	13	31	80	<.3	37	13	1083	5.66	12	<8	<2	<2	11	.2	<3	3	65	.11	.095	33	79	.68	118	.05	<3	1.69	.01	.06	<2	60
L19+00E 4+00N	3	17	31	96	.3	36	17	1601	4.12	15	<8	<2	<2	16	.5	<3	<3	39	.09	.155	37	59	.67	136	.01	<3	1.44	.01	.09	<2	40
L19+00E 3+50N	5	24	19	94	.4	50	16	1038	3.82	13	<8	<2	3	19	.5	3	3	39	.15	.104	44	75	.95	115	.02	<3	1.60	.01	.09	<2	40
L19+00E 3+00N	4	15	18	75	<.3	34	12	766	3.53	7	<8	<2	<2	38	.2	<3	<3	39	.96	.158	18	61	.73	363	.02	<3	1.29	.01	.06	<2	60
L19+00E 2+50N	3	11	10	43	<.3	19	7	309	2.75	5	<8	<2	<2	13	.2	<3	<3	42	.21	.108	17	48	.37	139	.02	<3	1.13	.01	.05	<2	35
L19+00E 2+00N	3	7	21	48	<.3	7	3	224	1.86	10	<8	<2	<2	12	.3	<3	<3	17	.09	.084	19	14	.07	71	.01	<3	.47	<.01	.06	<2	<10
L19+00E 1+50N	2	8	48	78	<.3	10	3	301	1.57	8	<8	<2	<2	53	.4	<3	3	26	.06	.130	22	20	.15	132	.01	<3	.82	.01	.08	<2	25
L19+00E 1+00N	6	11	21	86	<.3	18	7	407	2.85	13	<8	<2	2	20	.2	<3	<3	23	.25	.091	52	26	.28	187	.01	<3	1.03	.01	.08	<2	15
L19+00E 0+50N	4	11	15	59	.4	13	4	272	2.62	12	<8	<2	<2	10	<.2	<3	<3	27	.04	.066	44	23	.17	159	.01	<3	.89	.01	.08	<2	20
L19+00E 0+00N	6	20	22	80	.3	41	11	443	3.93	12	<8	<2	5	17	<.2	<3	<3	41	.14	.082	47	80	.84	293	.04	<3	1.62	.01	.09	<2	25
L19+00E 0+50S	4	20	19	75	.4	70	19	1086	4.98	7	<8	<2	<2	8	<.2	<3	<3	52	.08	.105	124	109	1.16	283	.01	<3	2.27	.01	.05	<2	40
L19+00E 1+00S	2	29	20	88	<.3	88	21	774	5.57	8	<8	<2	<2	6	.2	<3	<3	52	.06	.064	41	140	1.60	194	.02	<3	2.61	.01	.05	<2	55
L19+00E 1+50S	2	17	14	121	<.3	51	12	633	3.91	7	<8	<2	<2	12	.8	<3	<3	39	.17	.099	24	82	.92	127	.02	<3	1.68	.01	.05	<2	35
L19+00E 2+00S	1	16	16	95	<.3	34	9	1170	3.63	7	<8	<2	<2	55	.4	<3	<3	30	5.26	.130	23	44	3.28	190	.01	<3	1.16	.01	.05	<2	65
L21+00E 14+00N	1	5	6	44	.3	2	2	133	1.02	2	<8	<2	<2	16	<.2	<3	<3	20	.22	.063	24	5	.08	157	.04	<3	.65	.03	.03	<2	45
L21+00E 13+50N	6	11	26	148	<.3	12	5	1048	3.23	12	<8	<2	<2	6	.4	<3	<3	20	.05	.068	58	17	.17	91	.01	<3	.82	.01	.05	<2	45
L21+00E 13+00N	7	11	25	179	<.3	12	5	692	3.33	11	<8	<2	<2	9	1.0	<3	<3	26	.08	.089	57	20	.14	156	.01	<3	.88	.01	.07	<2	30
L21+00E 12+50N	3	10	15	28	.3	5	8	652	1.71	7	<8	<2	<2	15	<.2	<3	<3	12	.11	.100	21	7	.11	80	.01	<3	.67	.04	.07	<2	30
L21+00E 12+00N	5	7	22	60	<.3	8	4	707	2.43	8	<8	<2	<2	12	<.2	<3	<3	15	.09	.077	59	13	.14	142	.01	<3	.74	.01	.05	<2	30
L21+00E 11+50N	1	6	5	28	.3	5	2	134	.94	4	<8	<2	<2	11	<.2	<3	<3	14	.20	.055	18	17	.12	55	.02	<3	.70	.03	.04	<2	15
L21+00E 11+00N	6	18	32	99	<.3	36	13	2241	4.19	10	<8	<2	<2	8	.4	<3	<3	33	.09	.104	70	67	.51	272	.01	<3	1.13	.01	.06	<2	60
L21+00E 10+50N	6	18	30	128	<.3	27	11	1009	4.69	13	<8	<2	<2	5	.4	<3	3	30	.03	.083	65	43	.47	74	.01	<3	1.22	.01	.05	<2	50
L21+00E 10+00N	4	16	24	81	.4	15	8	1009	3.42	9	<8	<2	<2	6	.3	<3	<3	29	.06	.095	44	33	.30	64	.01	<3	.97	.01	.05	<2	25
L21+00E 9+50N	2	15	15	56	<.3	36	9	289	3.36	4	<8	<2	<2	11	.2	<3	<3	39	.14	.073	28	77	1.02	93	.01	<3	2.05	.01	.04	<2	15
STANDARD C3	24	62	38	158	5.7	35	13	775	3.41	58	17	3	21	29	23.2	21	17	77	.52	.087	19	166	.58	136	.08	17	1.87	.04	.17	15	890
STANDARD G-2	1	2	4	40	<.3	7	5	547	2.20	<2	<8	<2	3	79	<.2	<3	<3	39	.64	.093	7	77	.58	289	.13	<3	1.15	.14	.56	2	10

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

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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	Hg ppb
L21+00E 9+00N	2	11	7	40	<.3	26	8	377	2.79	3	<8	<2	<2	7	<.2	<3	3	44	.05	.051	36	76	.61	84	.02	<3	1.63	.01	.05	<2	35
L21+00E 8+50N	4	12	12	82	<.3	25	8	550	4.34	6	<8	<2	<2	5	.3	<3	5	30	.03	.068	45	95	.50	59	.01	<3	1.64	.01	.06	<2	50
L21+00E 8+00N	8	23	24	75	<.3	36	12	1193	5.22	15	<8	<2	<2	7	.2	<3	5	30	.05	.106	84	71	.70	56	.02	<3	1.33	.01	.06	<2	30
L21+00E 7+50N	4	10	14	47	<.3	22	7	499	5.00	10	<8	<2	2	5	<.2	<3	3	26	.06	.092	84	46	.46	50	.02	<3	1.13	.01	.05	<2	25
L21+00E 7+00N	3	23	21	92	<.3	53	18	926	4.62	8	<8	<2	2	18	.2	<3	3	39	.36	.080	51	105	1.30	94	.04	<3	1.81	.01	.06	<2	40
L21+00E 6+50N	2	21	11	47	<.3	45	11	415	3.34	5	<8	<2	<2	5	.2	<3	<3	38	.03	.065	22	81	.78	50	.02	<3	1.46	.02	.04	<2	20
L21+00E 6+00N	2	17	17	56	<.3	46	14	673	4.78	7	<8	<2	<2	8	<.2	<3	3	61	.06	.057	35	95	1.05	82	.02	<3	2.19	.01	.05	<2	40
L21+00E 5+50N	5	11	19	81	<.3	31	10	575	4.36	8	<8	<2	<2	6	<.2	<3	3	44	.04	.101	49	64	.70	52	.02	<3	1.47	.01	.07	<2	50
L21+00E 5+00N	2	16	13	62	<.3	48	13	465	3.84	9	<8	<2	<2	11	.2	<3	<3	41	.12	.198	25	130	1.18	90	.01	<3	1.86	.01	.06	<2	60
L21+00E 4+50N	7	14	31	60	<.3	17	12	1751	5.28	16	<8	<2	7	6	.2	<3	<3	14	.02	.120	90	18	.25	67	.01	<3	1.17	.01	.08	<2	35
L21+00E 4+00N	9	11	34	96	<.3	17	10	1376	5.12	34	<8	<2	9	11	.2	<3	4	16	.03	.057	66	17	.21	59	.01	<3	1.24	.01	.06	<2	50
L21+00E 3+50N	2	8	14	42	.3	2	2	849	.86	9	<8	<2	<2	79	<.2	<3	<3	39	.02	.084	9	1	.02	365	<.01	3	.42	.01	.07	<2	35
L21+00E 3+00N	4	9	18	69	<.3	10	5	202	2.53	6	<8	<2	<2	8	<.2	<3	3	46	.05	.050	28	20	.08	36	.05	<3	.39	.01	.06	<2	40
L21+00E 2+50N	12	13	36	180	<.3	29	6	1017	2.06	24	<8	<2	<2	13	.6	<3	<3	30	.23	.087	24	14	.08	129	<.01	<3	.49	.01	.07	<2	30
L21+00E 2+00N	3	33	25	87	.3	53	20	891	4.19	11	<8	<2	7	13	.3	<3	<3	48	.28	.093	57	61	1.08	212	.09	3	1.53	.01	.10	<2	70
L21+00E 1+50N	2	23	21	78	<.3	70	20	839	5.90	7	<8	<2	<2	12	.3	<3	3	62	.07	.057	27	144	1.61	69	.05	<3	2.88	.01	.06	<2	45
L21+00E 1+00N	3	4	11	25	<.3	4	2	132	.99	5	<8	<2	<2	11	<.2	<3	<3	18	.11	.047	34	10	.07	166	.01	<3	.64	.01	.05	<2	20
L21+00E 0+00N	24	6	59	23	.6	2	2	361	3.53	40	<8	<2	40	52	<.2	<3	5	3	.02	.056	203	5	.01	581	<.01	<3	.36	<.01	.12	2	90
L23+00E 14+00N	4	7	19	49	<.3	5	6	747	2.51	7	<8	<2	<2	12	<.2	<3	<3	19	.10	.078	45	7	.08	214	.01	<3	.64	.03	.06	<2	25
RE L23+00E 14+00N	5	9	18	50	<.3	5	6	738	2.54	7	<8	<2	<2	12	.2	<3	<3	21	.10	.076	44	9	.08	194	.01	<3	.63	.02	.05	<2	40
L23+00E 13+50N	1	2	6	7	.3	1	1	300	.55	<2	<8	<2	<2	8	<.2	<3	<3	14	.05	.033	25	2	.03	22	.01	<3	.23	.03	.03	<2	25
L23+00E 13+00N	14	15	72	136	.6	7	5	2043	5.29	12	<8	<2	14	12	.6	<3	4	17	.05	.064	194	7	.07	121	.01	<3	.58	.01	.07	<2	140
L23+00E 12+50N	14	18	47	88	1.3	10	6	2358	5.81	12	<8	<2	18	7	.3	3	6	16	.04	.066	342	15	.13	251	.02	<3	.85	.01	.06	<2	80
L23+00E 12+00N	11	24	46	124	.9	15	9	7539	14.50	22	<8	<2	9	12	<.2	<3	<3	21	.10	.078	241	7	.24	1093	.01	<3	1.14	.01	.08	<2	285
L23+00E 11+50N	8	10	28	107	.3	12	6	1355	4.12	10	<8	<2	<2	9	.3	<3	<3	28	.03	.082	95	19	.17	147	.02	<3	.92	.01	.08	<2	85
L23+00E 11+00N	12	12	21	79	.3	7	4	1239	3.04	9	<8	<2	4	8	.2	<3	<3	20	.06	.073	68	9	.13	103	.02	<3	.88	.02	.06	<2	40
L23+00E 10+50N	9	7	17	120	.3	7	4	755	3.67	11	<8	<2	3	8	.2	<3	5	14	.07	.062	118	10	.09	280	.01	<3	.70	<.01	.07	<2	45
L23+00E 10+00N	5	7	17	80	.3	8	3	450	2.71	8	<8	<2	<2	9	.3	<3	4	22	.06	.069	66	15	.10	63	.01	<3	.69	.01	.07	<2	40
L23+00E 9+50N	12	10	44	126	.4	11	5	1300	4.51	16	<8	<2	3	11	.4	<3	<3	17	.06	.064	95	11	.14	83	.01	<3	.99	.01	.08	<2	80
L23+00E 9+00N	8	7	21	107	.3	16	6	785	4.10	15	<8	<2	<2	6	<.2	<3	3	33	.05	.065	88	32	.29	101	.02	<3	.85	<.01	.08	<2	35
L23+00E 8+50N	10	10	23	106	.3	11	4	423	3.56	19	<8	<2	<2	7	<.2	<3	<3	22	.02	.065	84	17	.09	42	.01	<3	.63	<.01	.06	<2	50
L23+00E 8+00N	5	7	17	68	.4	5	3	755	2.30	7	<8	<2	<2	6	<.2	<3	4	30	.03	.051	51	6	.05	82	.02	<3	.53	.01	.05	<2	25
L23+00E 7+50N	9	14	45	116	.5	24	8	1212	5.69	21	<8	<2	7	9	.2	3	4	28	.10	.072	112	38	.39	124	.02	<3	1.06	.01	.08	<2	50
L23+00E 7+00N	15	17	45	134	.7	23	10	1570	6.77	19	<8	<2	9	9	.3	<3	4	27	.09	.072	114	32	.39	127	.03	<3	1.03	.01	.08	<2	65
L23+00E 6+50N	10	15	40	145	.5	18	8	1153	5.14	17	<8	<2	8	11	.2	4	3	26	.14	.057	96	28	.33	104	.04	<3	.85	.01	.07	<2	40
STANDARD C3	23	61	37	158	5.3	35	12	753	3.37	54	17	3	19	29	22.3	17	20	76	.52	.085	17	163	.57	133	.08	16	1.85	.04	.17	16	920
STANDARD G-2	1	2	4	40	<.3	8	5	548	2.21	<2	<8	<2	3	76	<.2	<3	<3	39	.64	.091	8	77	.58	275	.12	<3	1.12	.13	.55	2	<10

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

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Data f FA ___

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	Hg ppb
L23+00E 6+00N	1	8	7	22	.3	5	2	96	1.19	2	<8	<2	<2	23	<.2	<3	<3	22	.29	.128	33	7	.11	187	.02	<3	.87	.02	.03	<2	75
L23+00E 5+50N	9	9	33	80	.3	15	5	647	4.51	17	<8	<2	3	7	<.2	<3	3	25	.04	.077	94	28	.21	51	.02	<3	.82	<.01	.06	<2	25
L23+00E 5+00N	2	13	16	75	<.3	43	9	629	2.98	6	<8	<2	<2	31	<.2	<3	<3	37	.29	.130	48	91	.78	157	.02	<3	1.62	.01	.07	<2	20
L23+00E 4+50N	2	5	6	29	<.3	4	2	177	1.38	3	<8	<2	<2	10	<.2	<3	<3	18	.09	.091	24	11	.09	144	.01	<3	1.05	.01	.05	<2	20
L28+00E 18+00N	5	9	16	91	<.3	5	3	738	2.41	8	<8	<2	<2	6	<.2	<3	<3	20	.02	.059	47	6	.04	143	.01	<3	.68	.01	.05	<2	25
L28+00E 17+50N	5	7	25	83	<.3	6	4	1079	2.16	8	8	<2	<2	10	<.2	<3	<3	15	.03	.070	39	4	.05	67	.01	<3	.52	.02	.06	<2	55
L28+00E 17+00N	7	31	239	1742	.5	64	18	1219	5.82	29	<8	<2	6	12	2.4	3	3	46	.10	.074	59	85	.83	353	<.01	<3	1.95	.01	.09	<2	175
L28+00E 16+50N	6	20	1068	1609	7.4	6	5	922	13.11	39	<8	<2	7	5	.8	31	<3	19	.03	.075	53	7	.06	137	.02	3	.67	.01	.06	<2	1565
L28+00E 16+00N	2	5	17	33	<.3	2	2	255	.83	3	<8	<2	<2	7	<.2	<3	<3	10	.06	.041	19	2	.05	171	.02	<3	.56	.03	.03	<2	45
L28+00E 15+50N	3	9	17	81	<.3	4	3	554	1.47	5	<8	<2	<2	8	<.2	<3	<3	14	.07	.058	31	3	.06	54	.02	<3	.54	.03	.05	<2	30
L28+00E 15+00N	16	19	70	491	<.3	9	4	1459	4.55	21	<8	<2	5	7	.6	3	<3	21	.05	.061	88	9	.10	77	.01	<3	.88	.01	.05	<2	75
L28+00E 14+50N	19	21	44	546	.4	12	5	2186	5.48	18	<8	<2	12	8	.9	4	3	22	.04	.042	134	9	.12	100	.02	<3	.84	<.01	.06	<2	70
L28+00E 14+00N	16	12	20	109	.5	7	3	1065	4.44	13	<8	<2	8	6	<.2	3	<3	18	.02	.040	107	11	.06	54	.01	5	.70	.01	.04	<2	25
L28+00E 13+50N	36	13	57	97	<.3	19	11	2431	5.48	26	<8	<2	9	30	.2	<3	3	13	<.01	.065	79	3	.03	89	<.01	<3	.56	<.01	.10	<2	70
L28+00E 13+00N	10	17	139	765	<.3	8	6	317	17.09	38	<8	<2	3	380	<.2	<3	<3	2	.04	.277	37	2	.10	166	<.01	<3	1.82	.02	.66	<2	3560
L28+00E 12+50N	8	8	58	153	<.3	7	6	2423	6.80	14	<8	<2	4	24	<.2	<3	3	12	.07	.114	66	6	.13	177	<.01	<3	1.34	.01	.08	<2	50
L28+00E 12+00N	11	7	28	136	<.3	6	5	4599	5.00	12	<8	<2	11	10	.4	<3	4	12	.03	.060	111	5	.09	83	.01	<3	.66	.01	.06	<2	85
L28+00E 11+50N	12	10	45	58	<.3	14	7	883	3.40	21	<8	<2	2	11	.3	3	<3	20	.05	.073	53	9	.10	57	<.01	<3	.76	<.01	.06	<2	45
RE L28+00E 11+50N	12	11	44	59	<.3	14	7	858	3.41	22	<8	<2	2	11	.2	3	<3	20	.05	.072	55	9	.10	56	.01	<3	.76	<.01	.06	<2	40
L28+00E 11+00N	11	17	71	210	.5	14	15	1340	4.35	17	<8	<2	3	17	1.1	5	<3	35	.04	.193	72	7	.10	73	<.01	<3	1.06	.01	.07	<2	130
L28+00E 10+50N	5	4	9	33	<.3	4	2	1924	5.57	5	<8	<2	6	12	<.2	<3	<3	6	.38	.047	63	4	.34	179	<.01	<3	1.94	.01	.14	<2	35
L28+00E 10+00N	7	11	17	78	.3	10	5	2861	6.72	11	<8	<2	5	11	.3	<3	<3	16	.22	.062	72	12	.23	148	.01	<3	1.09	.01	.10	<2	120
L28+00E 9+50N	20	12	48	95	.9	6	2	959	3.11	24	<8	<2	18	10	.6	8	<3	10	.08	.037	181	10	.09	68	.01	<3	.51	<.01	.06	<2	270
L28+00E 9+00N	19	13	115	164	1.3	6	1	412	2.24	30	<8	<2	24	10	.8	11	<3	11	.02	.028	189	7	.02	45	<.01	4	.21	<.01	.08	<2	365
L28+00E 8+50N	12	10	45	79	1.1	6	1	198	1.65	24	<8	<2	2	14	.2	6	<3	13	.01	.041	105	6	.04	51	.01	<3	.38	<.01	.08	<2	160
L28+00E 8+00N	11	15	41	165	.6	12	3	536	2.95	24	<8	<2	<2	9	.6	5	<3	17	.04	.068	105	10	.09	48	.01	<3	.62	.01	.07	<2	85
L28+00E 7+50N	15	16	41	292	.8	25	6	855	4.20	31	<8	<2	10	16	.9	4	3	21	.05	.070	141	18	.19	86	.01	<3	1.01	<.01	.10	<2	105
L28+00E 7+00N	10	12	30	187	.3	14	6	662	3.54	19	<8	<2	<2	10	.6	<3	<3	20	.03	.083	72	13	.11	72	.01	<3	.80	.01	.08	<2	60
L28+00E 6+50N	8	6	11	59	.6	6	3	386	1.69	8	<8	<2	<2	7	.3	3	<3	21	.04	.119	74	9	.04	170	.01	<3	.75	.01	.07	<2	55
L28+00E 6+00N	1	2	<3	21	<.3	2	1	131	.82	<2	<8	<2	<2	6	<.2	<3	<3	13	.06	.055	11	4	.03	205	.01	<3	.52	.02	.03	<2	20
L28+00E 5+50N	3	7	6	47	<.3	6	4	536	3.03	7	<8	<2	<2	6	<.2	<3	<3	14	.02	.108	39	3	.03	1510	<.01	<3	.58	.01	.08	<2	110
L28+00E 4+50N	16	24	89	980	<.3	36	7	649	6.69	165	<8	<2	<2	7	2.6	10	5	29	.02	.234	21	13	.16	59	.01	<3	1.30	.01	.04	<2	60
L28+00E 4+00N	2	3	7	46	<.3	3	3	207	1.83	7	<8	<2	<2	5	.2	<3	<3	13	.03	.073	24	6	.06	49	.01	<3	.66	.01	.04	<2	15
L29+50E 18+00N	10	12	35	228	.4	8	5	699	5.59	24	<8	<2	2	4	<.2	3	3	15	.01	.091	71	9	.06	144	<.01	<3	.61	.01	.07	<2	30
L29+50E 17+50N	10	12	35	227	<.3	8	5	666	5.50	24	<8	<2	2	4	.2	3	4	16	.01	.092	73	9	.05	132	<.01	<3	.59	.01	.06	<2	20
STANDARD C3	25	63	35	163	5.6	36	13	786	3.53	59	22	3	20	29	23.2	21	17	78	.53	.087	18	165	.59	132	.08	18	1.88	.04	.17	16	890
STANDARD G-2	1	2	3	40	<.3	8	5	553	2.24	<2	<8	<2	4	83	<.2	<3	<3	40	.63	.096	8	82	.58	272	.14	<3	1.08	.12	.54	2	10

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

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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	Hg ppb
L29+50E 17+00N	9	8	23	126	<.3	8	4	1096	3.11	13	<8	<2	<2	4	.2	<3	<3	23	.01	.077	69	3	.04	103	.01	<3	.61	.01	.06	<2	40
L29+50E 16+50N	2	4	13	41	<.3	4	3	1229	1.37	5	<8	<2	<2	6	.2	<3	<3	16	.04	.053	16	7	.04	121	.01	<3	.40	.02	.05	<2	20
L29+50E 16+00N	16	21	83	42	.5	4	6	1447	7.42	33	<8	<2	42	8	<.2	3	6	5	.02	.044	295	9	.06	70	<.01	<3	.43	<.01	.06	<2	45
L29+50E 15+50N	39	15	257	59	.3	4	6	943	13.46	72	<8	<2	30	9	<.2	10	<3	4	.06	.048	199	6	.10	305	<.01	3	1.00	.01	.11	<2	150
L29+50E 14+50N	17	15	65	1521	<.3	15	10	2525	6.29	29	<8	<2	11	26	6.0	<3	4	14	.17	.068	102	1	.15	109	<.01	<3	.82	.01	.08	<2	355
L29+50E 14+00N	15	8	43	256	<.3	11	6	3003	4.57	18	<8	<2	15	21	2.2	<3	4	8	.11	.048	121	5	.08	90	<.01	<3	.49	.01	.06	<2	75
L29+50E 13+50N	15	8	43	261	<.3	11	7	3852	4.94	16	<8	<2	14	24	1.7	<3	3	7	.16	.053	113	2	.09	119	<.01	<3	.61	.01	.07	<2	55
L29+50E 13+00N	17	10	49	293	<.3	13	6	3094	4.60	21	<8	<2	19	20	3.2	<3	3	9	.12	.041	156	1	.07	84	<.01	<3	.44	.01	.08	<2	100
L29+50E 12+50N	17	10	59	324	<.3	14	6	3226	4.81	22	<8	<2	21	21	3.7	3	<3	10	.09	.041	163	1	.06	88	<.01	<3	.47	.01	.08	<2	170
L29+50E 12+00N	16	10	57	380	<.3	14	6	2881	4.80	24	<8	<2	21	24	4.5	3	<3	10	.09	.042	154	4	.06	82	<.01	<3	.44	<.01	.07	<2	170
L29+50E 10+00N	9	13	32	75	.5	9	5	2086	6.16	21	<8	<2	4	8	.3	4	4	15	.11	.046	54	7	.19	86	.01	<3	1.10	.01	.08	<2	90
L29+50E 9+50N	22	19	113	90	2.1	9	2	479	2.87	50	<8	<2	17	16	.5	13	4	14	.04	.040	195	6	.04	77	.01	<3	.39	.01	.10	<2	205
L29+50E 9+00N	20	24	76	330	1.1	26	4	777	3.84	37	<8	<2	10	26	1.3	6	5	27	.05	.061	196	15	.13	111	.02	<3	.65	.01	.12	<2	130
RE L29+50E 9+00N	19	23	74	331	.9	26	4	786	3.84	38	<8	<2	10	26	1.2	7	4	28	.05	.061	196	17	.13	112	.02	<3	.65	.01	.12	<2	130
L29+50E 8+50N	15	16	59	154	1.0	18	4	453	2.71	27	<8	<2	4	11	.6	5	4	25	.07	.053	78	21	.22	45	.02	<3	.78	.01	.07	<2	150
L29+50E 8+00N	17	13	50	130	.7	14	3	303	3.38	42	<8	<2	3	30	.7	7	4	22	.04	.065	82	12	.11	167	.01	<3	.53	.01	.15	<2	270
L29+50E 7+50N	7	11	29	145	<.3	15	5	466	2.99	21	<8	<2	2	15	.6	3	3	27	.05	.065	60	21	.18	92	.02	<3	.92	.01	.07	<2	55
L29+50E 7+00N	8	12	26	109	<.3	16	6	542	3.33	19	<8	<2	2	21	.5	3	3	28	.12	.096	59	19	.22	77	.02	<3	.99	.01	.08	<2	15
L29+50E 6+50N	5	9	14	59	<.3	8	5	460	2.40	10	<8	<2	<2	7	.3	<3	3	23	.03	.100	39	10	.09	84	.01	<3	.88	.01	.07	<2	20
L29+50E 6+00N	5	10	16	66	<.3	8	5	1346	2.77	12	<8	<2	<2	6	.2	<3	3	25	.02	.106	49	12	.03	125	<.01	<3	.42	<.01	.07	<2	20
L29+50E 5+50N	1	28	7	67	<.3	125	27	751	4.90	6	<8	<2	<2	13	.2	<3	5	124	.15	.088	14	285	2.95	85	.04	<3	3.08	.01	.15	<2	15
L29+50E 5+00N	1	3	9	19	<.3	3	2	1247	.80	<2	<8	<2	<2	6	<.2	<3	3	16	.04	.037	4	4	.04	87	.01	3	.21	.02	.03	<2	<10
L29+50E 4+50N	5	12	112	79	<.3	8	6	1732	2.18	11	<8	<2	<2	12	.3	<3	3	22	.10	.186	19	6	.05	112	<.01	<3	.62	.01	.10	<2	50
L29+50E 4+00N	8	15	56	62	.3	16	7	2370	1.55	23	<8	<2	<2	8	<.2	4	3	22	.03	.064	32	7	.03	141	<.01	<3	.36	.01	.07	<2	45
L31+00E 18+00N	6	15	30	300	.3	19	8	1236	3.97	10	<8	<2	9	8	1.0	<3	4	11	.22	.059	39	7	.13	107	<.01	4	.55	.01	.06	<2	55
L31+00E 17+50N	7	25	395	1056	.3	72	74	932	9.07	28	<8	<2	11	8	8.7	8	5	2	.90	.029	11	1	.36	101	<.01	<3	.58	.01	.08	<2	20
L31+00E 17+00N	4	7	20	139	<.3	8	3	359	2.88	7	<8	<2	3	8	.3	<3	<3	14	.13	.074	44	10	.16	178	<.01	<3	1.05	.01	.06	<2	35
L31+00E 16+50N	14	23	514	4188	.7	19	12	4992	11.07	33	<8	<2	15	18	8.8	7	5	9	.20	.090	217	1	.10	770	<.01	<3	2.07	.01	.10	<2	1165
L31+00E 16+00N	21	22	208	768	.5	13	11	2078	7.15	41	<8	<2	13	11	2.1	5	5	9	.10	.087	123	4	.08	663	<.01	<3	.69	.01	.10	<2	720
L31+00E 15+50N	16	21	305	900	.6	13	10	2449	7.91	37	<8	<2	13	11	2.2	6	7	8	.06	.088	112	1	.08	674	<.01	<3	.80	.01	.12	<2	1240
L31+00E 15+00N	6	11	47	209	<.3	6	5	1454	3.78	14	<8	<2	2	50	.4	<3	3	10	.62	.113	41	6	.13	379	<.01	4	1.10	.02	.05	<2	110
L31+00E 14+50N	14	13	64	140	<.3	15	13	5891	7.98	31	<8	<2	8	26	.2	4	6	10	.14	.076	64	2	.08	350	<.01	4	.54	.01	.09	<2	95
L31+00E 13+50N	12	11	63	212	<.3	15	12	5755	8.56	25	<8	<2	8	23	.3	4	3	7	.12	.083	57	<1	.08	328	<.01	<3	.62	.01	.10	<2	100
L31+00E 13+00N	11	10	65	227	<.3	15	12	5587	8.81	24	<8	<2	8	28	.2	4	4	7	.15	.081	55	1	.09	367	<.01	<3	.92	.01	.13	<2	130
L31+00E 12+50N	10	9	49	254	<.3	15	12	6060	8.59	23	<8	<2	7	32	.2	3	4	6	.18	.078	50	<1	.09	416	<.01	<3	.74	.01	.13	<2	80
STANDARD C3	24	62	33	163	5.3	36	13	785	3.47	56	14	2	19	29	23.0	18	17	78	.53	.088	18	163	.58	132	.09	15	1.85	.04	.17	16	870
STANDARD G-2	1	2	<3	41	<.3	8	5	557	2.24	<2	<8	<2	4	83	<.2	<3	<3	41	.63	.095	8	79	.59	275	.13	<3	1.08	.12	.54	2	<10

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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	Hg ppb
L31+00E 12+00N	13	11	57	176	<.3	15	12	6155	8.72	24	<8	<2	9	30	.6	3	<3	6	.15	.073	52	3	.09	481	<.01	<3	.80	.01	.16	<2	115
L31+00E 10+00N	9	12	36	147	<.3	17	6	498	2.82	15	<8	<2	3	14	.8	3	<3	31	.07	.062	53	21	.20	49	.03	<3	.87	.01	.06	<2	65
L31+00E 9+50N	5	11	18	93	<.3	12	4	252	2.26	10	<8	<2	<2	9	.5	<3	3	34	.07	.071	38	17	.14	50	.02	<3	.84	.01	.06	<2	55
L31+00E 9+00N	8	14	35	107	<.3	16	5	325	2.89	23	<8	<2	3	16	.6	<3	4	32	.05	.063	62	23	.22	71	.02	<3	1.08	.01	.09	<2	60
L31+00E 8+50N	4	12	23	70	<.3	12	5	331	2.46	12	<8	<2	<2	10	.5	<3	3	33	.06	.075	46	17	.16	55	.02	<3	.96	.01	.07	<2	45
L31+00E 8+00N	6	13	25	112	<.3	18	6	440	2.86	16	<8	<2	5	11	.7	<3	<3	29	.08	.055	66	23	.21	62	.03	<3	1.04	.01	.06	<2	20
L31+00E 7+50N	8	9	12	59	<.3	8	3	219	2.27	14	<8	<2	<2	5	.2	3	3	29	.02	.070	66	10	.03	52	.01	<3	.42	<.01	.07	<2	20
L31+00E 7+00N	4	13	12	75	<.3	22	12	735	4.17	10	<8	<2	<2	12	.7	<3	4	28	.16	.132	42	34	.43	88	.01	<3	1.65	.01	.08	<2	20
L31+00E 6+50N	5	10	14	60	<.3	9	5	484	3.40	9	<8	<2	<2	7	.4	<3	<3	22	.05	.131	46	16	.10	84	.01	<3	.84	<.01	.07	<2	40
L31+00E 6+00N	5	11	14	55	<.3	14	9	976	3.67	10	<8	<2	2	16	.5	<3	4	24	.23	.139	48	17	.23	125	.02	<3	1.05	.01	.08	<2	15
L31+00E 5+50N	7	15	22	88	<.3	14	6	670	3.64	10	<8	<2	<2	10	.3	<3	4	30	.05	.190	36	14	.07	183	<.01	<3	.86	.01	.09	<2	75
L31+00E 5+00N	5	9	43	73	<.3	9	11	7194	2.52	10	<8	<2	<2	6	.3	<3	<3	29	.02	.080	43	4	.04	611	.01	<3	.54	.01	.07	<2	35
L31+00E 4+50N	1	3	12	28	<.3	2	3	2276	.77	2	<8	<2	<2	6	.2	<3	<3	11	.04	.076	5	1	.02	116	<.01	<3	.28	.02	.05	<2	10
L31+00E 4+00N	1	19	13	60	<.3	28	13	996	2.63	13	<8	<2	<2	8	.4	<3	<3	49	.04	.168	11	68	.50	68	.01	<3	1.37	.02	.05	<2	35
L32+50E 18+00N	6	23	30	342	<.3	14	12	1474	5.45	12	<8	<2	13	2	.9	3	3	4	.02	.048	27	3	.06	158	<.01	<3	.53	<.01	.05	<2	45
L32+50E 17+50N	5	12	59	398	<.3	6	6	948	4.42	9	<8	<2	4	3	.6	<3	4	6	.05	.104	56	5	.06	107	<.01	<3	.56	<.01	.06	<2	30
RE L32+50E 17+50N	5	12	67	428	<.3	6	6	991	4.76	8	<8	<2	3	4	.7	3	4	6	.05	.113	61	5	.06	115	<.01	<3	.60	<.01	.06	<2	25
L32+50E 17+00N	7	33	86	2186	.4	3	3	4212	7.59	38	<8	<2	7	8	15.5	3	3	3	.14	.038	69	<1	.17	354	<.01	<3	.72	.01	.09	<2	120
L32+50E 16+50N	9	20	448	959	1.2	3	2	3769	7.23	27	<8	<2	6	7	4.4	<3	<3	3	.10	.028	54	<1	.13	297	<.01	<3	.60	.01	.07	<2	185
L32+50E 16+00N	7	15	74	1039	.4	8	3	4033	4.94	24	<8	<2	4	4	3.5	<3	<3	16	.03	.055	65	2	.11	130	.01	<3	.97	.01	.07	<2	30
L32+50E 15+50N	53	26	195	80	<.3	11	12	1421	9.88	180	<8	<2	8	8	.3	9	3	10	.01	.181	65	3	.05	80	<.01	<3	1.09	.01	.07	<2	70
L32+50E 15+00N	101	38	90	395	.5	29	5	1162	5.03	56	<8	<2	6	7	1.1	8	3	12	.07	.115	75	8	.02	80	<.01	<3	.29	<.01	.04	<2	135
L32+50E 14+50N	16	18	219	699	.6	8	7	1008	5.22	26	<8	<2	8	14	.9	6	4	10	.14	.078	117	7	.11	1980	<.01	<3	.97	.01	.10	<2	865
L32+50E 14+00N	14	16	260	221	1.3	5	3	305	16.94	41	<8	<2	<2	33	.2	12	<3	10	.01	.218	23	2	.05	137	.01	<3	.40	.01	.81	<2	130
L32+50E 13+50N	3	6	46	183	<.3	3	3	476	2.17	7	<8	<2	<2	15	.2	<3	<3	15	.17	.067	18	3	.07	179	.01	<3	.80	.03	.04	<2	30
L32+50E 13+00N	9	6	36	166	<.3	4	4	3093	4.25	13	<8	<2	13	16	.6	<3	<3	2	.17	.036	109	2	.13	160	<.01	<3	.76	<.01	.07	<2	140
L32+50E 12+50N	7	11	36	266	<.3	16	9	3521	5.28	14	<8	<2	5	21	.8	<3	<3	7	.19	.086	46	1	.10	149	<.01	<3	.69	.01	.06	<2	115
L32+50E 10+00N	5	10	13	57	<.3	13	4	616	2.36	12	<8	<2	<2	9	.3	<3	4	28	.06	.061	37	17	.17	69	.02	<3	.72	.01	.06	<2	50
L32+50E 9+50N	7	12	25	68	<.3	12	5	1532	3.30	10	<8	<2	<2	9	.5	<3	3	29	.07	.086	65	16	.11	272	.02	<3	.93	.01	.08	<2	60
L32+50E 9+00N	5	9	20	60	<.3	12	4	674	3.15	9	<8	<2	3	8	.3	<3	<3	28	.06	.046	48	18	.16	55	.03	<3	.91	.01	.05	<2	20
L32+50E 8+50N	4	13	21	105	<.3	17	7	1275	3.12	10	<8	<2	6	10	.6	<3	4	31	.07	.057	50	21	.23	68	.04	<3	1.02	.01	.06	<2	30
L32+50E 8+00N	5	16	21	165	<.3	20	7	882	2.89	14	<8	<2	6	10	.4	<3	<3	28	.08	.054	51	24	.25	75	.04	<3	1.05	.01	.06	<2	65
L32+50E 7+50N	6	16	26	126	<.3	15	8	1694	3.48	14	<8	<2	3	9	.4	<3	3	37	.06	.091	68	22	.16	95	.03	<3	1.02	.01	.08	<2	20
L32+50E 7+00N	3	8	9	31	<.3	7	3	244	1.46	6	<8	<2	<2	7	<.2	<3	<3	21	.05	.046	25	10	.10	70	.02	<3	.72	.01	.04	<2	<10
L32+50E 6+50N	4	10	18	49	<.3	10	6	363	2.79	14	<8	<2	<2	8	.2	<3	3	25	.05	.071	34	16	.08	86	.01	<3	.66	<.01	.05	<2	10
STANDARD C3	24	62	35	160	5.4	35	13	774	3.42	56	19	3	20	29	22.6	19	18	78	.52	.087	18	167	.58	132	.08	17	1.86	.04	.17	16	915
STANDARD G-2	2	2	4	40	<.3	7	5	546	2.19	<2	<8	<2	4	82	<.2	<3	<3	39	.63	.093	8	77	.58	269	.13	<3	1.06	.11	.52	2	<10

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

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Data 4 FA ___

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	Hg ppb
L32+50E 6+00N	4	9	18	108	<.3	8	6	1076	2.41	8	<8	<2	<2	7	.4	<3	<3	28	.02	.073	27	15	.07	57	.01	<3	.72	.01	.04	<2	45
L32+50E 5+50N	2	9	9	39	<.3	5	3	183	1.66	4	<8	<2	<2	5	<.2	<3	<3	23	.02	.059	18	13	.08	37	.01	<3	.69	.01	.03	<2	30
L32+50E 5+00N	1	8	5	42	<.3	3	2	95	.83	2	<8	<2	<2	29	<.2	<3	<3	17	.39	.102	8	3	.08	51	.02	<3	.75	.03	.03	<2	30
L34+00E 18+00N	4	42	43	327	<.3	44	15	425	2.70	14	<8	<2	3	3	.7	<3	<3	21	.05	.072	9	16	.18	60	<.01	<3	.72	<.01	.04	<2	45
L34+00E 17+50N	11	15	163	561	.8	11	4	2699	5.74	23	<8	<2	6	10	2.1	<3	<3	11	.07	.080	96	11	.18	410	<.01	<3	1.40	.01	.10	<2	155
L34+00E 17+00N	9	14	125	356	.3	13	5	1718	5.28	26	<8	<2	6	11	1.1	4	<3	16	.07	.058	75	18	.24	738	.01	<3	1.29	.01	.15	<2	110
L34+00E 16+50N	14	16	104	263	.3	13	6	1698	4.43	19	<8	<2	3	10	1.0	<3	3	15	.09	.070	78	15	.18	656	<.01	<3	1.17	.01	.07	<2	160
L34+00E 16+00N	8	14	67	229	<.3	13	6	2856	3.79	14	<8	<2	<2	8	1.2	<3	3	25	.11	.096	66	18	.14	329	.01	<3	.87	.01	.07	<2	95
L34+00E 15+50N	6	12	53	508	<.3	36	7	1785	5.53	26	<8	<2	2	10	1.5	<3	<3	27	.15	.107	63	36	.28	355	.01	<3	1.78	.01	.06	<2	60
L34+00E 15+00N	14	9	45	140	.3	6	3	5754	5.31	15	<8	<2	14	11	.7	<3	3	8	.15	.048	122	5	.27	389	<.01	<3	1.78	.01	.10	<2	55
RE L34+00E 15+00N	14	9	44	132	<.3	5	3	5411	4.95	13	<8	<2	13	10	.6	<3	<3	8	.14	.045	114	8	.25	366	<.01	<3	1.65	.01	.09	<2	50
L34+00E 14+50N	5	9	9	68	<.3	2	2	947	3.49	14	<8	<2	3	5	.3	<3	<3	8	.07	.041	28	8	.03	121	.01	<3	.25	.01	.05	<2	25
L34+00E 14+00N	14	18	281	2257	.5	9	8	4921	6.86	23	<8	<2	19	13	10.0	<3	<3	5	.14	.056	79	5	.13	300	<.01	<3	.73	.01	.12	<2	185
L34+00E 13+50N	14	15	298	215	<.3	6	8	523	7.51	28	<8	<2	10	13	.2	9	<3	11	.02	.085	34	1	.06	299	<.01	<3	.36	.01	.19	<2	1885
L34+00E 13+00N	9	12	32	184	<.3	21	13	2781	4.47	24	<8	<2	7	12	1.0	<3	<3	10	.17	.088	52	5	.10	283	<.01	<3	.54	.01	.08	<2	110
L34+00E 12+50N	10	14	40	142	<.3	14	9	3338	4.89	21	<8	<2	8	13	.7	<3	<3	10	.10	.082	65	6	.09	117	.01	<3	.49	.01	.06	<2	120
L34+00E 12+00N	16	20	55	250	<.3	30	18	4924	6.15	28	<8	<2	9	17	1.1	<3	<3	7	.11	.107	73	5	.08	176	<.01	<3	.56	.01	.06	<2	130
L34+00E 11+50N	15	12	44	158	<.3	12	7	5827	5.55	19	<8	<2	9	14	.9	<3	3	10	.06	.067	80	1	.09	332	.01	<3	.63	.01	.07	<2	110
L34+00E 11+00N	4	11	19	73	<.3	17	7	1275	2.93	13	<8	<2	2	11	.3	<3	<3	30	.12	.072	33	25	.23	126	.02	3	.83	.01	.05	<2	45
L34+00E 10+50N	6	12	26	86	<.3	10	11	8476	3.96	9	<8	<2	<2	9	.9	<3	<3	20	.08	.185	31	7	.06	761	<.01	<3	.79	.01	.09	<2	105
L34+00E 10+00N	4	12	12	51	<.3	17	6	718	3.35	17	<8	<2	2	9	.4	<3	<3	34	.07	.042	41	21	.21	104	.04	<3	1.12	.01	.05	<2	30
L34+00E 9+50N	4	11	21	54	<.3	9	8	3228	2.48	9	<8	<2	<2	7	.2	<3	<3	26	.03	.086	34	9	.03	593	.01	<3	.58	.01	.05	<2	20
L34+00E 9+00N	4	11	10	52	<.3	9	4	557	2.54	9	<8	<2	<2	7	.2	<3	3	31	.04	.053	35	18	.08	72	.02	<3	.79	<.01	.05	<2	50
L34+00E 8+50N	4	13	16	75	<.3	17	5	688	2.62	9	<8	<2	3	8	.4	<3	3	31	.07	.044	44	25	.24	70	.05	<3	.99	.01	.05	<2	35
L34+00E 8+00N	5	12	13	67	<.3	13	5	619	2.93	10	<8	<2	4	7	.4	<3	<3	26	.05	.040	59	22	.18	50	.03	<3	.75	.01	.05	<2	30
L34+00E 7+50N	10	12	20	83	<.3	10	6	7591	5.91	20	<8	<2	2	8	.8	<3	<3	17	.03	.101	49	10	.15	313	.01	<3	1.42	.01	.11	<2	80
L34+00E 7+00N	7	10	15	72	<.3	7	4	3058	6.32	13	<8	<2	4	6	.7	<3	5	11	.09	.103	40	9	.23	108	<.01	<3	1.89	<.01	.08	<2	75
L34+00E 6+50N	6	13	20	83	<.3	10	5	1301	3.54	11	<8	<2	4	15	.4	<3	5	28	.04	.080	40	13	.19	86	.01	<3	1.36	.01	.06	<2	20
L34+00E 6+00N	4	9	18	84	<.3	9	3	237	1.17	10	<8	<2	<2	16	.5	<3	<3	20	.07	.094	18	10	.10	41	.01	<3	.71	.01	.05	<2	15
L34+00E 5+50N	3	13	11	81	<.3	11	5	396	1.80	7	<8	<2	<2	14	.3	<3	<3	21	.05	.079	23	16	.08	65	.01	<3	.52	.01	.06	<2	15
L34+00E 5+00N	5	20	19	107	<.3	14	7	372	2.66	12	<8	<2	<2	22	.2	<3	3	34	.02	.115	35	17	.08	79	.01	<3	.75	<.01	.09	<2	30
L35+50E 18+00N	9	24	79	507	<.3	22	8	1285	3.51	26	<8	<2	3	20	2.1	4	4	11	.18	.113	31	2	.05	90	<.01	<3	.46	.01	.07	<2	45
L35+50E 17+50N	8	22	68	412	<.3	18	6	1053	2.99	21	<8	<2	2	18	1.6	3	3	12	.17	.103	27	6	.05	90	<.01	<3	.45	.01	.07	<2	50
L35+50E 17+00N	23	36	189	760	.7	23	3	816	2.89	58	<8	<2	3	20	3.4	6	4	87	.12	.093	40	5	.04	119	<.01	<3	.50	.01	.07	<2	40
L35+50E 16+50N	45	61	283	1876	1.7	31	8	4008	7.08	111	<8	<2	8	25	16.1	11	<3	75	.16	.086	68	3	.08	359	<.01	<3	.81	.01	.14	<2	205
STANDARD C3	26	63	37	160	5.2	35	13	751	3.32	58	19	3	21	28	22.9	20	19	76	.52	.085	17	170	.57	131	.08	17	1.81	.04	.17	16	870
STANDARD G-2	1	4	4	42	<.3	8	5	521	2.14	<2	<8	<2	4	77	<.2	<3	<3	41	.61	.091	8	80	.57	270	.13	<3	1.01	.10	.51	2	10

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Data 4 FA ___

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	Hg ppb
L35+50E 16+00N	17	21	423	3432	1.9	8	4	12429	9.89	17	<8	<2	14	17	23.7	<3	<3	7	.09	.039	187	6	.15	305	<.01	5	1.61	<.01	.08	<2	210
L35+50E 15+50N	8	5	484	990	2.1	2	2	5174	10.44	35	<8	<2	11	10	3.7	<3	<3	1	.05	.022	82	<1	.21	91	<.01	<3	1.77	.01	.13	<2	510
L35+50E 15+00N	11	11	122	392	.6	6	2	2811	4.59	15	<8	<2	20	7	3.1	<3	<3	4	.04	.031	172	3	.12	82	<.01	<3	1.33	.01	.06	<2	500
L35+50E 14+50N	7	5	55	459	.3	5	4	5382	6.87	11	<8	<2	20	10	1.7	<3	<3	4	.20	.042	89	1	.19	309	<.01	<3	.79	.01	.07	<2	85
RE L35+50E 14+50N	6	5	54	449	.3	5	4	5286	6.70	12	<8	<2	19	10	1.6	<3	<3	4	.19	.042	86	<1	.18	300	<.01	<3	.76	<.01	.07	<2	95
L35+50E 14+00N	3	2	25	255	<.3	2	2	2713	2.84	3	<8	<2	21	7	.7	<3	<3	1	.33	.044	49	<1	.14	160	<.01	<3	.47	<.01	.06	<2	50
L35+50E 13+50N	22	6	348	119	.5	3	2	158	5.67	64	<8	<2	9	51	.4	9	<3	9	.02	.073	64	<1	.03	144	.01	<3	.21	.01	.39	<2	145
L35+50E 13+00N	14	4	127	568	<.3	2	3	2146	7.04	15	<8	<2	9	7	.6	<3	<3	5	.02	.048	38	<1	.04	776	<.01	<3	.40	.01	.05	<2	475
L35+50E 12+50N	21	26	72	476	.4	12	25	7353	8.18	38	<8	<2	12	22	1.6	<3	<3	6	.32	.069	62	<1	.23	558	<.01	<3	1.06	<.01	.07	<2	260
L35+50E 12+00N	4	11	13	67	<.3	14	5	703	3.01	8	<8	<2	2	8	.4	<3	3	24	.08	.063	36	11	.27	108	.01	<3	1.25	<.01	.04	<2	35
L35+50E 11+50N	5	10	18	69	<.3	10	5	1386	3.34	10	<8	<2	<2	6	.4	<3	<3	33	.04	.076	39	13	.06	183	.01	<3	.59	<.01	.06	<2	65
L35+50E 11+00N	3	9	7	62	<.3	13	4	800	3.11	7	<8	<2	<2	8	.5	<3	<3	28	.08	.058	35	13	.17	114	.02	<3	.92	<.01	.05	<2	30
L35+50E 10+50N	3	11	12	66	<.3	15	6	899	3.18	8	<8	<2	2	10	.5	<3	<3	29	.10	.066	37	16	.21	154	.02	<3	.91	.01	.06	<2	40
L35+50E 10+00N	5	11	21	92	<.3	10	5	447	2.66	9	<8	<2	<2	19	.3	<3	<3	25	.02	.066	29	9	.08	53	.01	<3	.71	<.01	.05	<2	15
L35+50E 9+50N	3	11	15	85	<.3	12	7	1869	2.80	7	<8	<2	2	7	.3	<3	<3	28	.04	.076	32	14	.16	95	.02	<3	.87	<.01	.05	<2	50
L35+50E 9+00N	3	12	16	75	<.3	13	6	532	2.78	8	<8	<2	2	12	.3	<3	<3	26	.06	.088	34	13	.25	64	.01	<3	1.15	.01	.06	<2	25
L35+50E 8+50N	4	15	18	93	<.3	14	6	1185	3.47	11	<8	<2	7	32	.6	<3	<3	31	.06	.073	43	10	.18	105	.03	<3	.88	.01	.06	<2	30
L35+50E 8+00N	6	5	6	84	.3	6	3	2677	6.61	3	<8	<2	9	32	.5	<3	<3	6	.27	.035	102	3	.24	645	<.01	<3	1.66	<.01	.06	<2	55
L35+50E 7+50N	5	6	9	82	<.3	7	3	2168	5.99	2	<8	<2	8	34	.5	<3	<3	7	.27	.040	97	2	.25	622	<.01	<3	1.65	<.01	.06	<2	50
L35+50E 7+00N	7	16	31	217	<.3	16	7	1484	2.91	19	<8	<2	<2	80	1.1	<3	<3	34	.02	.103	37	5	.11	114	.01	<3	.80	.01	.08	<2	25
L35+50E 6+50N	3	11	14	74	<.3	9	5	266	2.31	10	<8	<2	<2	9	<.2	<3	<3	30	.03	.106	27	7	.07	67	.01	<3	.77	<.01	.05	<2	50
L35+50E 6+00N	4	12	22	63	<.3	11	6	222	2.25	13	<8	<2	<2	10	<.2	<3	3	30	.02	.085	22	4	.05	35	<.01	<3	.53	<.01	.04	<2	30
L37+00E 18+00N	14	26	92	501	.7	33	5	1617	2.96	33	11	<2	10	22	4.2	5	<3	25	.20	.099	43	2	.06	151	<.01	<3	.42	.01	.06	<2	50
L37+00E 17+50N	15	31	152	771	.8	25	4	2204	3.31	33	<8	<2	11	20	7.8	3	<3	36	.15	.091	41	1	.06	145	.01	<3	.67	.02	.07	<2	70
L37+00E 17+00N	33	64	244	1254	1.3	44	4	1842	4.33	80	<8	<2	12	47	17.2	8	<3	95	.17	.111	55	<1	.05	203	<.01	<3	.57	.01	.09	<2	115
L37+00E 16+50N	43	63	2158	3555	4.1	55	9	6128	10.35	105	<8	<2	8	20	25.5	10	<3	30	.04	.081	72	4	.07	415	.01	<3	.88	.01	.09	<2	355
L37+00E 16+00N	8	19	139	424	1.0	15	6	4225	6.00	25	<8	<2	2	8	2.7	<3	<3	14	.05	.111	60	6	.10	237	.01	<3	1.09	.01	.10	<2	290
L37+00E 15+50N	7	10	86	218	1.7	9	5	6978	8.31	27	<8	<2	8	17	1.0	<3	<3	14	.12	.068	78	11	.29	1830	.01	<3	1.98	<.01	.09	<2	215
L37+00E 15+00N	22	11	221	103	10.1	3	2	165	12.62	199	<8	<2	11	11	.2	21	<3	6	.01	.038	63	3	.04	122	.01	<3	.49	.01	.78	<2	335
L37+00E 14+50N	4	13	37	104	.3	15	6	583	3.07	12	<8	<2	3	13	.4	<3	<3	45	.09	.061	54	25	.22	147	.03	<3	1.12	.01	.06	<2	95
L37+00E 14+00N	13	6	40	787	<.3	2	2	2475	7.98	21	<8	<2	10	4	1.9	3	<3	<1	.05	.033	96	<1	.04	192	<.01	<3	.39	<.01	.05	<2	65
L37+00E 13+50N	10	14	60	1135	.6	4	5	5416	10.93	28	<8	<2	7	10	1.6	4	<3	4	.25	.069	81	1	.08	426	<.01	<3	.35	<.01	.05	<2	425
L37+00E 13+00N	6	10	57	125	<.3	14	5	225	2.77	13	<8	<2	4	20	.4	<3	<3	30	.06	.037	24	15	.24	778	.03	<3	.91	.01	.16	<2	1655
L37+00E 12+50N	4	10	26	152	<.3	11	5	664	2.77	10	<8	<2	<2	13	.4	<3	3	26	.07	.062	51	12	.19	2278	.01	<3	.97	<.01	.05	<2	70
L37+00E 12+00N	3	11	22	109	<.3	8	3	412	2.24	9	<8	<2	<2	7	.2	<3	<3	38	.04	.107	23	11	.05	160	.01	<3	.58	<.01	.05	<2	70
STANDARD C3	25	62	35	161	5.4	35	12	765	3.42	55	21	3	21	28	23.2	18	17	77	.52	.087	17	160	.58	143	.08	18	1.82	.04	.16	15	865
STANDARD G-2	2	2	<3	41	<.3	9	5	533	2.19	<2	<8	<2	4	72	<.2	<3	<3	39	.60	.095	7	69	.59	252	.13	<3	.96	.08	.49	2	<10

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

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Data___ FA ___

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	Hg ppb
L37+00E 11+50N	4	12	27	116	<.3	19	10	623	4.26	7	8	<2	2	10	.6	<3	3	38	.12	.170	28	22	.39	270	.01	<3	1.57	<.01	.06	<2	60
L37+00E 11+00N	3	16	18	147	<.3	15	6	479	3.21	7	<8	<2	<2	9	.5	<3	<3	22	.06	.094	32	11	.18	124	.01	<3	1.13	<.01	.06	<2	40
L37+00E 10+50N	4	10	22	101	<.3	8	4	641	2.13	9	<8	<2	<2	8	.2	<3	<3	25	.04	.103	29	11	.05	545	<.01	<3	.68	<.01	.06	<2	35
L37+00E 10+00N	4	13	17	101	<.3	12	5	796	3.12	7	<8	<2	<2	9	.4	<3	<3	24	.03	.109	28	10	.11	80	.01	<3	.78	<.01	.09	<2	55
L37+00E 9+50N	4	12	15	69	<.3	11	6	603	2.75	10	<8	<2	<2	10	.2	<3	<3	25	.06	.081	29	7	.18	43	.01	<3	.88	<.01	.11	<2	40
L37+00E 9+00N	5	9	20	120	<.3	9	5	1142	3.92	10	<8	<2	2	9	.5	<3	<3	12	.03	.078	29	4	.13	66	<.01	<3	1.22	<.01	.06	<2	30
L37+00E 8+50N	4	10	10	79	<.3	8	5	508	2.59	9	<8	<2	<2	6	<.2	<3	<3	25	.02	.067	30	4	.05	47	.01	<3	.66	<.01	.05	<2	15
L37+00E 8+00N	4	9	12	64	<.3	10	5	346	2.52	6	<8	<2	<2	5	.2	<3	<3	33	.02	.067	26	14	.12	49	.01	<3	.82	<.01	.05	<2	30
L37+00E 7+50N	3	11	19	88	<.3	13	9	489	3.31	9	<8	<2	<2	12	.6	<3	<3	34	.09	.102	25	15	.32	89	.01	<3	1.07	<.01	.07	<2	20
L37+00E 7+00N	4	15	13	91	<.3	16	11	465	3.53	8	<8	<2	<2	11	.5	<3	<3	41	.05	.102	24	18	.26	76	.01	<3	1.06	<.01	.07	<2	20
L37+00E 6+50N	4	18	13	91	<.3	14	10	663	3.25	9	<8	<2	<2	16	.3	<3	<3	50	.07	.186	20	23	.13	130	.01	<3	.96	<.01	.08	<2	55
L37+00E 6+00N	3	12	7	72	<.3	12	6	385	3.20	5	<8	<2	<2	10	.3	<3	<3	32	.03	.067	31	20	.15	76	.01	<3	.92	<.01	.07	<2	30
L38+50E 18+00N	9	20	97	580	<.3	12	5	1470	3.61	17	<8	<2	<2	9	2.5	<3	<3	19	.06	.092	45	4	.09	118	.01	<3	.68	.01	.06	<2	40
L38+50E 17+50N	12	13	108	290	<.3	18	4	1619	2.86	25	<8	<2	4	17	1.6	<3	<3	16	.11	.084	45	4	.05	133	<.01	<3	.48	.01	.06	<2	30
L38+50E 17+00N	9	11	55	231	<.3	20	4	1337	2.47	26	<8	<2	4	16	1.2	<3	<3	16	.16	.098	38	<1	.04	110	<.01	<3	.34	<.01	.06	<2	45
L38+50E 16+50N	8	10	83	429	.9	10	6	3063	6.40	19	<8	<2	8	19	1.6	<3	<3	8	.20	.060	93	5	.14	252	<.01	3	1.03	.01	.07	<2	100
L38+50E 16+00N	13	17	104	620	.6	20	5	2176	4.65	38	<8	<2	6	20	3.0	3	<3	17	.23	.080	63	6	.07	171	<.01	4	.53	.01	.08	<2	40
RE L38+50E 16+00N	11	16	107	622	.5	20	5	2230	4.65	34	<8	<2	5	21	3.2	3	<3	16	.25	.082	61	1	.07	176	<.01	<3	.52	<.01	.08	<2	40
L38+50E 15+50N	8	6	43	219	.3	7	4	4603	6.57	16	<8	<2	10	15	.8	<3	<3	10	.16	.057	115	8	.23	331	<.01	<3	1.51	<.01	.08	<2	70
L38+50E 14+50N	10	9	267	1450	.3	7	4	1866	7.06	25	<8	<2	10	9	2.3	<3	<3	8	.12	.055	83	5	.12	304	.01	5	.59	.01	.09	<2	380
L38+50E 14+00N	4	19	310	1575	.3	22	3	2289	5.35	13	<8	<2	4	52	2.5	3	<3	6	7.50	.026	28	7	4.51	186	.01	<3	.47	.01	.06	<2	780
L38+50E 13+50N	16	6	82	552	<.3	1	2	1070	8.47	28	<8	<2	13	5	.6	<3	<3	2	.04	.080	127	<1	.04	106	<.01	<3	.48	<.01	.07	<2	220
L38+50E 13+00N	14	11	33	714	<.3	11	5	1194	8.69	16	<8	<2	9	17	.5	<3	<3	8	.04	.054	60	<1	.04	1596	<.01	5	.42	.01	.06	<2	190
L38+50E 12+50N	22	5	86	135	<.3	<1	1	1074	5.01	9	<8	<2	25	4	.4	<3	<3	<1	.03	.006	85	<1	.01	50	<.01	<3	.13	<.01	.04	<2	135
L38+50E 12+00N	4	9	19	127	<.3	11	5	430	2.81	11	<8	<2	<2	9	.5	<3	<3	24	.05	.078	26	15	.14	119	.01	<3	.79	.01	.06	<2	15
L38+50E 11+50N	4	9	20	112	<.3	10	5	461	3.01	9	<8	<2	<2	7	.4	<3	<3	21	.04	.100	24	11	.13	83	<.01	<3	.87	<.01	.05	<2	40
L38+50E 11+00N	1	18	16	87	<.3	17	6	329	1.72	4	<8	<2	3	18	.3	<3	<3	26	.23	.098	27	17	.29	140	.04	4	.91	.01	.07	<2	30
L38+50E 10+50N	2	19	20	96	<.3	25	8	622	2.45	7	<8	<2	5	17	.3	<3	<3	35	.16	.096	35	26	.34	110	.06	<3	1.18	.01	.07	<2	35
L38+50E 10+00N	3	12	11	95	<.3	13	5	672	3.15	7	<8	<2	<2	12	.3	<3	<3	22	.09	.088	35	10	.19	93	.01	<3	1.20	.01	.05	<2	25
L38+50E 9+50N	2	13	14	88	<.3	15	5	494	2.71	8	<8	<2	<2	15	.4	<3	<3	24	.14	.077	42	14	.19	85	.02	3	.81	.01	.06	<2	25
L38+50E 9+00N	3	12	13	81	<.3	11	4	167	1.79	9	<8	<2	<2	17	<.2	<3	<3	23	.04	.081	25	5	.06	60	<.01	<3	.46	<.01	.06	<2	20
L38+50E 8+50N	3	15	18	96	<.3	15	6	523	2.35	12	<8	<2	<2	17	.4	<3	<3	23	.10	.101	41	12	.14	113	.01	3	.80	.01	.08	<2	20
L38+50E 8+00N	2	15	22	110	<.3	16	6	468	2.31	11	<8	<2	<2	21	.4	<3	<3	21	.11	.141	25	12	.11	84	<.01	3	.62	.01	.08	<2	15
L38+50E 7+50N	3	18	19	96	<.3	15	7	595	2.29	12	<8	<2	<2	43	.2	<3	<3	20	.07	.091	32	5	.10	100	.01	<3	.61	<.01	.08	<2	35
L38+50E 7+00N	6	19	16	118	<.3	16	11	1019	3.74	14	<8	<2	<2	20	.4	<3	<3	24	.15	.100	50	10	.16	126	.01	<3	.92	.01	.08	<2	25
STANDARD C3	24	61	37	161	5.3	35	12	754	3.43	54	16	2	21	29	22.8	17	17	77	.52	.087	17	162	.58	131	.08	15	1.83	.04	.16	15	880
STANDARD G-2	<1	<1	<3	42	<.3	8	5	540	2.23	<2	<8	<2	3	72	<.2	<3	<3	40	.62	.094	7	76	.60	255	.13	<3	.96	.08	.49	2	<10

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

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Data 4 FA ___

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	Hg ppb
L38+50E 6+50N	3	13	9	86	<.3	11	7	409	2.84	8	<8	<2	<2	12	.2	<3	<3	26	.03	.087	30	1	.09	68	<.01	<3	.83	<.01	.06	<2	25
L38+50E 6+00N	2	14	9	98	<.3	14	6	301	2.54	10	<8	<2	<2	11	<.2	<3	<3	24	.03	.069	27	5	.09	67	<.01	<3	.80	<.01	.05	<2	35
L40+00E 18+00N	2	11	16	133	<.3	17	5	422	2.53	10	<8	<2	<2	6	.3	<3	<3	24	.03	.067	31	39	.24	68	.01	<3	.88	<.01	.04	<2	30
L40+00E 17+50N	3	6	12	70	<.3	4	3	470	1.53	5	<8	<2	<2	7	<.2	<3	<3	17	.02	.047	21	4	.03	86	.01	<3	.49	.01	.04	<2	35
L40+00E 17+00N	4	7	14	87	<.3	5	3	417	1.62	6	<8	<2	<2	8	<.2	<3	<3	18	.02	.050	23	4	.03	100	.01	<3	.49	.01	.04	<2	30
L40+00E 16+50N	6	10	21	119	<.3	9	3	537	2.71	10	<8	<2	<2	8	<.2	<3	<3	23	.01	.067	38	4	.03	78	.01	<3	.44	.01	.05	<2	35
L40+00E 16+00N	4	15	31	176	<.3	35	11	1116	5.38	17	<8	<2	3	9	.5	<3	<3	45	.05	.107	34	69	.40	119	<.01	<3	1.58	.01	.05	<2	40
RE L40+00E 16+00N	4	15	33	172	<.3	34	11	1085	5.26	15	<8	<2	3	9	.4	<3	<3	44	.05	.105	33	69	.39	117	<.01	<3	1.55	<.01	.05	<2	35
L40+00E 15+50N	7	7	99	619	<.3	5	3	1039	4.42	19	<8	<2	<2	8	1.0	<3	<3	11	.05	.079	52	5	.08	143	<.01	<3	.68	.01	.07	<2	90
L40+00E 15+00N	7	12	56	230	<.3	10	6	2014	3.40	12	<8	<2	2	13	.6	<3	<3	13	.08	.088	44	5	.11	1071	.01	<3	.76	.01	.09	<2	120
L40+00E 14+50N	5	8	19	121	<.3	9	4	710	3.24	12	<8	<2	<2	7	.4	<3	<3	18	.02	.078	35	15	.11	150	.01	<3	.94	<.01	.05	<2	45
L40+00E 14+00N	10	8	135	752	<.3	7	4	1170	5.52	18	<8	<2	7	14	1.0	<3	3	10	.10	.045	65	3	.08	795	.01	<3	.49	<.01	.14	<2	735
L40+00E 13+50N	3	13	16	102	<.3	13	4	388	2.56	14	<8	<2	2	9	.3	<3	<3	23	.02	.086	22	8	.05	102	<.01	<3	.70	<.01	.04	<2	40
L40+00E 13+00N	5	10	18	116	<.3	12	4	390	2.58	16	<8	<2	<2	8	.3	<3	<3	22	.02	.090	23	4	.04	122	<.01	<3	.70	.01	.05	<2	30
L40+00E 12+50N	5	9	19	102	<.3	10	3	382	2.26	9	<8	<2	<2	8	.2	<3	<3	17	.04	.080	21	6	.05	99	<.01	<3	.44	<.01	.05	<2	40
L40+00E 12+00N	5	9	24	91	<.3	13	3	629	1.90	14	<8	<2	4	11	.2	<3	<3	11	.06	.065	37	1	.05	51	<.01	<3	.37	<.01	.04	<2	50
L40+00E 11+50N	2	13	17	84	<.3	10	6	849	2.77	7	<8	<2	2	14	.4	<3	<3	13	.16	.098	32	4	.12	93	<.01	<3	.63	<.01	.05	<2	40
L40+00E 11+00N	4	12	24	79	<.3	9	5	587	2.27	10	<8	<2	<2	10	<.2	<3	<3	19	.05	.107	22	4	.06	47	<.01	<3	.59	<.01	.05	<2	25
L40+00E 10+50N	5	15	74	152	<.3	13	6	970	2.52	14	<8	<2	3	22	.5	<3	<3	17	.15	.120	23	5	.08	93	<.01	<3	.65	<.01	.06	<2	90
L40+00E 10+00N	4	20	13	112	<.3	17	13	724	3.67	11	<8	<2	2	20	.4	<3	<3	28	.19	.096	33	9	.20	144	.01	<3	1.03	.01	.06	<2	25
L40+00E 9+50N	4	15	10	125	<.3	14	6	356	2.65	12	<8	<2	<2	8	.5	<3	<3	28	.04	.153	20	8	.04	75	<.01	<3	.49	<.01	.07	<2	50
L40+00E 9+00N	4	16	12	110	<.3	15	6	348	2.78	12	<8	<2	<2	12	.3	<3	<3	25	.04	.155	25	9	.07	92	<.01	<3	.68	<.01	.08	<2	30
L40+00E 8+50N	4	20	15	124	<.3	18	9	674	3.22	10	<8	<2	<2	21	.5	<3	<3	24	.07	.091	33	13	.13	118	<.01	<3	.79	<.01	.07	<2	35
L40+00E 8+00N	5	20	16	125	<.3	17	9	1122	3.12	10	<8	<2	<2	19	.4	<3	3	28	.06	.145	30	11	.10	126	<.01	<3	.76	<.01	.09	<2	35
L40+00E 7+50N	4	20	13	118	<.3	17	11	625	3.25	10	<8	<2	<2	28	.6	<3	<3	27	.17	.116	30	11	.17	109	.01	<3	.80	<.01	.10	<2	30
L40+00E 7+00N	5	20	13	130	<.3	17	9	578	3.64	10	<8	<2	2	20	.5	<3	<3	22	.09	.091	32	11	.14	83	.01	<3	.88	<.01	.09	<2	20
L40+00E 6+50N	6	33	30	184	.3	25	10	1285	4.12	14	<8	<2	4	37	1.0	<3	<3	25	.12	.111	46	13	.23	125	.01	<3	1.10	.01	.13	<2	70
L40+00E 6+00N	3	23	17	117	<.3	15	5	323	2.82	15	<8	<2	2	41	.4	<3	<3	28	.03	.114	32	14	.10	122	<.01	<3	1.09	<.01	.06	<2	30
L41+50E 18+00N	10	11	58	181	.4	15	6	1084	3.00	33	<8	<2	2	12	.5	<3	<3	61	.03	.162	27	32	.11	88	<.01	3	.73	.01	.06	<2	65
L41+50E 17+50N	10	11	61	183	<.3	16	5	1140	3.00	35	<8	<2	<2	12	.5	<3	<3	61	.03	.168	26	35	.11	90	<.01	<3	.74	.01	.06	<2	65
L41+50E 16+50N	2	7	29	153	<.3	4	2	300	1.75	7	<8	<2	<2	6	.2	<3	<3	16	.02	.050	21	7	.03	52	.01	3	.54	.02	.03	<2	40
L41+50E 16+00N	5	9	71	380	<.3	6	3	665	3.55	16	<8	<2	<2	6	.5	<3	<3	14	.02	.061	43	9	.06	77	<.01	<3	.66	.01	.05	<2	75
L41+50E 15+50N	5	8	39	117	<.3	7	6	2554	2.16	7	<8	<2	<2	9	.5	<3	<3	20	.02	.110	26	5	.04	186	<.01	4	.63	.01	.06	<2	40
L41+50E 15+00N	8	8	84	239	.3	7	5	3341	4.02	16	<8	<2	2	9	.9	<3	<3	13	.04	.104	40	4	.05	728	<.01	<3	.53	.01	.14	<2	90
L41+50E 14+50N	8	13	55	299	.3	12	6	1125	4.67	19	<8	<2	6	16	1.0	<3	3	13	.07	.071	58	10	.10	1094	.01	<3	.56	<.01	.10	<2	130
STANDARD C3	25	61	35	158	5.1	35	12	741	3.33	54	19	3	21	28	22.8	17	17	76	.51	.084	17	161	.58	132	.08	16	1.79	.04	.16	16	900
STANDARD G-2	1	2	<3	41	<.3	8	5	529	2.13	<2	<8	<2	4	71	<.2	<3	<3	39	.60	.094	7	77	.58	260	.14	<3	.94	.07	.48	2	<10

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

All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of the analysis only.

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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	Hg ppb
L41+50E 14+00N	4	11	18	94	<.3	11	5	607	2.49	15	<8	<2	<2	9	.3	<3	<3	23	.02	.095	15	14	.06	62	.01	<3	.61	.01	.04	<2	25
L41+50E 13+50N	3	13	20	91	<.3	15	6	635	2.62	13	<8	<2	<2	9	.4	<3	<3	23	.02	.115	20	30	.15	63	.01	<3	.79	.01	.04	<2	15
L41+50E 13+00N	11	11	40	145	<.3	8	4	987	4.22	17	<8	<2	<2	9	.5	<3	3	10	.04	.084	55	3	.07	82	<.01	<3	.59	<.01	.05	<2	165
L41+50E 12+50N	12	7	51	107	<.3	5	2	339	3.78	20	<8	<2	3	12	.5	<3	<3	8	.02	.085	48	1	.06	95	<.01	<3	.76	.01	.11	<2	120
L41+50E 12+00N	17	10	100	179	<.3	15	6	1885	5.15	30	<8	<2	6	22	.8	<3	3	11	.01	.094	64	3	.04	84	<.01	<3	.66	<.01	.09	<2	65
L41+50E 11+50N	8	16	28	117	.3	24	6	633	2.18	19	<8	<2	10	22	.7	<3	<3	13	.38	.116	18	1	.09	106	<.01	<3	.39	<.01	.06	<2	35
L43+00E 18+00N	6	12	23	177	<.3	11	4	414	2.77	11	<8	<2	<2	6	.6	<3	<3	37	.01	.061	43	18	.07	51	.01	<3	.58	<.01	.04	<2	20
L43+00E 17+50N	4	9	29	110	<.3	8	3	333	2.01	8	<8	<2	2	8	.2	<3	<3	26	.03	.079	22	14	.08	50	.01	<3	.59	.01	.05	<2	15
L43+00E 17+00N	10	8	125	745	<.3	5	3	940	6.19	29	<8	<2	<2	8	.5	<3	<3	12	.04	.080	74	6	.04	68	<.01	<3	.56	<.01	.09	<2	35
L43+00E 16+50N	16	11	53	146	<.3	10	4	172	2.20	22	<8	<2	<2	7	.3	<3	<3	57	.01	.080	43	10	.04	41	<.01	<3	.48	<.01	.04	<2	15
L43+00E 16+00N	15	12	55	168	<.3	12	4	223	2.54	24	<8	<2	<2	7	.4	<3	3	60	.02	.094	46	9	.04	46	<.01	<3	.52	<.01	.04	<2	25
L43+00E 15+50N	6	10	34	141	<.3	8	3	237	2.50	16	<8	<2	<2	9	.2	<3	<3	20	.06	.060	35	5	.03	55	<.01	3	.29	.01	.05	<2	<10
L43+00E 15+00N	13	17	309	396	.5	13	6	1124	7.13	27	<8	<2	3	11	.4	<3	<3	19	.02	.164	50	11	.10	143	<.01	<3	.77	<.01	.07	<2	95
L43+00E 14+50N	27	26	459	596	1.8	7	4	483	14.78	33	<8	<2	9	9	.7	16	<3	14	.04	.093	87	5	.03	49	<.01	<3	.36	<.01	.06	<2	870
L43+00E 14+00N	14	14	68	321	<.3	8	5	1173	6.57	18	<8	<2	6	22	.7	<3	<3	7	.09	.087	62	1	.08	162	<.01	<3	.58	<.01	.09	<2	220
L43+00E 13+50N	9	16	48	116	<.3	18	7	665	4.11	17	<8	<2	3	8	.3	<3	<3	21	.02	.093	41	28	.23	61	<.01	<3	.89	<.01	.05	<2	15
L43+00E 13+00N	9	34	24	167	<.3	17	19	1567	7.19	13	<8	<2	3	30	.3	<3	<3	15	.47	.170	64	2	.21	109	<.01	<3	1.16	.01	.19	<2	65
RE L43+00E 13+00N	8	34	26	165	<.3	17	19	1557	7.17	15	<8	<2	3	29	.3	<3	<3	15	.47	.170	64	5	.21	108	<.01	<3	1.16	.01	.19	<2	65
L43+00E 12+00N	3	15	16	81	<.3	7	5	749	2.28	9	<8	<2	2	15	.3	<3	3	13	.15	.084	20	2	.08	57	.01	<3	.58	.02	.06	<2	25
L43+00E 11+50N	5	35	28	218	<.3	17	8	907	3.07	14	<8	<2	4	48	.7	<3	<3	18	.09	.089	34	4	.09	87	<.01	<3	.64	.01	.11	<2	35
L43+00E 11+00N	5	37	32	218	.3	17	8	719	2.93	18	<8	<2	5	62	.7	<3	<3	18	.14	.094	35	8	.14	89	<.01	4	.89	.01	.14	<2	65
STANDARD C3	24	62	32	160	5.2	35	13	748	3.39	55	17	<2	21	28	22.8	17	20	77	.52	.085	17	165	.58	136	.08	16	1.82	.04	.16	15	900
STANDARD G-2	1	2	3	40	<.3	8	5	515	2.12	<2	<8	<2	4	71	<.2	<3	<3	38	.58	.090	7	71	.56	230	.14	<3	.93	.08	.47	2	<10

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

All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of the analysis only.

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APPENDIX II

Geophysical Report

GEOPHYSICAL REPORT
FOX PROPERTY
YUKON TERRITORY
FOR
ATNA RESOURCES LTD
BY
DELTA GEOSCIENCE LTD

DEC. 14, 1998. GRANT A. HENDRICKSON, P.GEO.

GEOPHYSICAL REPORT

FOX PROPERTY

YUKON TERRITORY

FOR

ATNA RESOURCES LTD

BY

DELTA GEOSCIENCE LTD

DECEMBER 14, 1998.

GRANT A. HENDRICKSON, P.GEO.

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APPENDIX:

<u>250 Meter Coil Separation:</u>

Horizontal Co-Planar Loop E.M. Plan, 220Hz .. .. .. Fig. #
Horizontal Co-Planar Loop E.M. Plan, 440Hz .. .. .. Fig. #
Horizontal Co-Planar Loop E.M. Plan, 880Hz .. .. .. Fig. #
Horizontal Co-Planar Loop E.M. Plan, 1760Hz .. .. .. Fig. #
Horizontal Co-Planar Loop E.M. Plan, 3520Hz .. .. .. Fig. #
Horizontal Co-Planar Loop E.M. Plan, 7040Hz .. .. .. Fig. #

INTRODUCTION

At the request of Atna Resources Ltd., Delta Geoscience Ltd has conducted horizontal co-planar loop electromagnetic surveys over the Fox claims. The newly discovered (Atna 1997) zinc-lead-silver Wolf deposit, which is located on the immediate east side of the Fox claims, has drawn attention to the adjacent properties, particularly those on strike. Atna has the Fox property under option from Cominco.

The property is located in the centre of the Yukon, approximately fifty kilometers southeast of the dormant Ketza River mine. As this brief report is to be appended to Atna's geological reports, no location, claim maps or geological discussion will be included.

The Maxmin electromagnetic system developed by Apex Parametrics Ltd was used for this survey. The system utilised was the much improved 1-9 model introduced in the spring of 1998.

Access to the grid was by helicopter from the base camp Atna established at the Ketza mine site.

During the period July 11, 13-17 and July 28th, Delta Geoscience conducted nineteen kilometers of multi-frequency horizontal coplanar loop E.M. survey. To ensure a good depth of investigation a large coil separation was employed for all the basic coverage. Productivity was typically 2.5 km per day.

The topography of the survey area is quite typical of the Yukon, with rugged alpine terrain. Fortunately most of the survey work was conducted above the tree line. The topography itself presented no problems, however there were numerous significant scree slopes.

PERSONNEL

Grant Hendrickson - Senior Geophysicist-Supervisor.

Kristian von Fersen - Senior Technician.

Jan Dobrescu - Junior Geophysicist.

EQUIPMENT

1 - Apex Parametrics 1998 1-9 Electromagnetic System.

1 - NEC Versa Field Computer.

1 - Hewlett Packard 250C Colour Plotter/Printer.

4 - Spare Coil Separation Cables.

DATA PRESENTATION AND EQUIPMENT DESCRIPTION

The horizontal coplanar loop E.M. data is presented as stacked profile plans of the inphase and quadrature components for each frequency. Basic E.M. coverage was carried out at a coil separation of 250 meters and six frequencies: 220Hz, 440Hz, 880Hz, 1760Hz, 3520Hz and 7040Hz.

All survey maps are presented at 1:5000 scale in this report.

Profile data is presented increasing to the right (East) from a base level (value at the line position). The inphase response is plotted as a solid line, whereas the dashed line shows the corresponding quadrature response.

The manufacturer's specifications and capability sheets for the new 1998 1-9 Maxmin system and related software package follow.

APEX MAXMIN I+9 EM SYSTEM

I+ designation, with improved transmitter efficiency and increased dipole moments, 1998

❒ Designed for groundwater and mineral exploration, and for geoengineering applications, continuing and expanding the concepts of the earlier and highly popular MaxMin models.

❒ Frequency span is extended to nine octavely spaced frequencies from 110 to 28160 Hz, with 11 coil separations from 12.5 to 400 or 10 to 320 metres. These and other developments result in greater performance, more applications and enhanced interpretation.

❒ Advanced spheric and powerline interference rejection is still further improved, resulting in faster and more accurate surveys, particularly at the larger coil separations.

❒ MaxMin Computer or MMC, which is described in a separate data sheet, is offered for digital data processing, display, storage and transfer. The MMC displays and stores the in-phase and quadrature readings, their standard deviations, and the corresponding apparent ground conductivity values. Rough terrain surveys are also simplified with the MMC.

❒ MaxMin Pro data interpretation and presentation software program is available for layered earth parametric soundings and discrete conductor surveys done with MaxMin.



TRANSMITTER



RECEIVER + MMC

APEX MAXMIN COMPUTER MMC

❒ The MMC interfaces with MaxMin EM System receivers for digital data processing, display, storage and transfer, enhancing survey productivity and data accuracy.

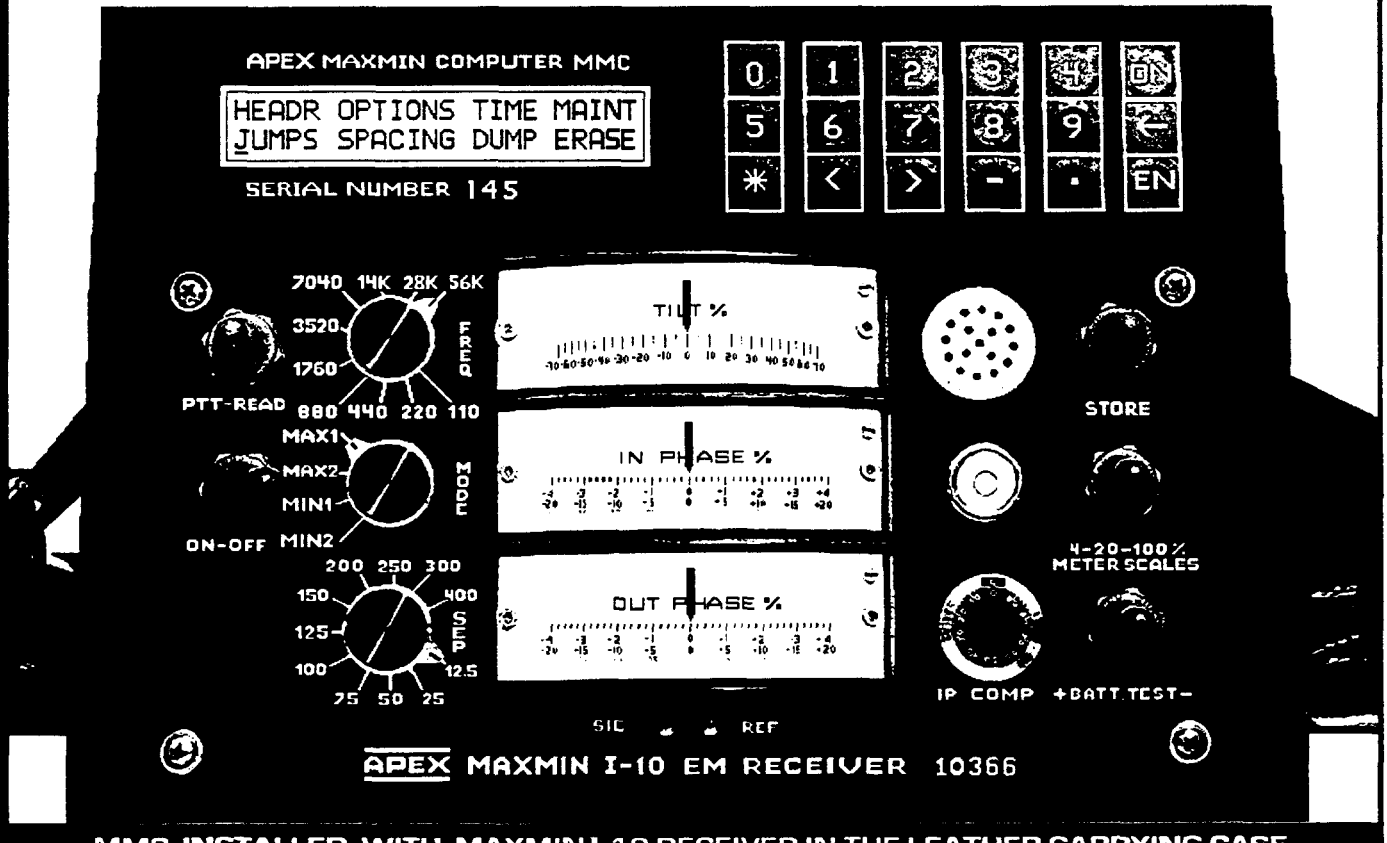
❒ Digital display and logging of in-phase (real) and quadrature (imaginary) readings with standard deviations, the corresponding apparent ground conductivity values, line, station, terrain slope and coil tilt information.

❒ Easy fingertip operation by read and store switches on MaxMin receiver front panel, with digital averaging for improved signal to noise ratio.

❒ Rough terrain surveys are simplified with the use of built-in tilt meter, slope entry and computed coil orientation and separation information.

❒ Data transfer, formatting, correcting and viewing programs are supplied for personal computers. Program for computing multi-frequency best-fit apparent conductivities and fit errors is provided.

❒ MaxMin Pro data interpretation and presentation software program is available for multi-layer parametric or geometric soundings and for discrete conductor surveys done with MaxMin EM and MMC.



MMC INSTALLED WITH MAXMIN I-10 RECEIVER IN THE LEATHER CARRYING CASE

APEX

MAXMIN PRO DATA INTERPRETATION PROGRAM

LAYERED EARTH INTERPRETATION.

THIN PLATE INTERPRETATION.

ACCEPTS APEX .MMD FILES, COMPATIBLE WITH MAXMIN COMPUTER.

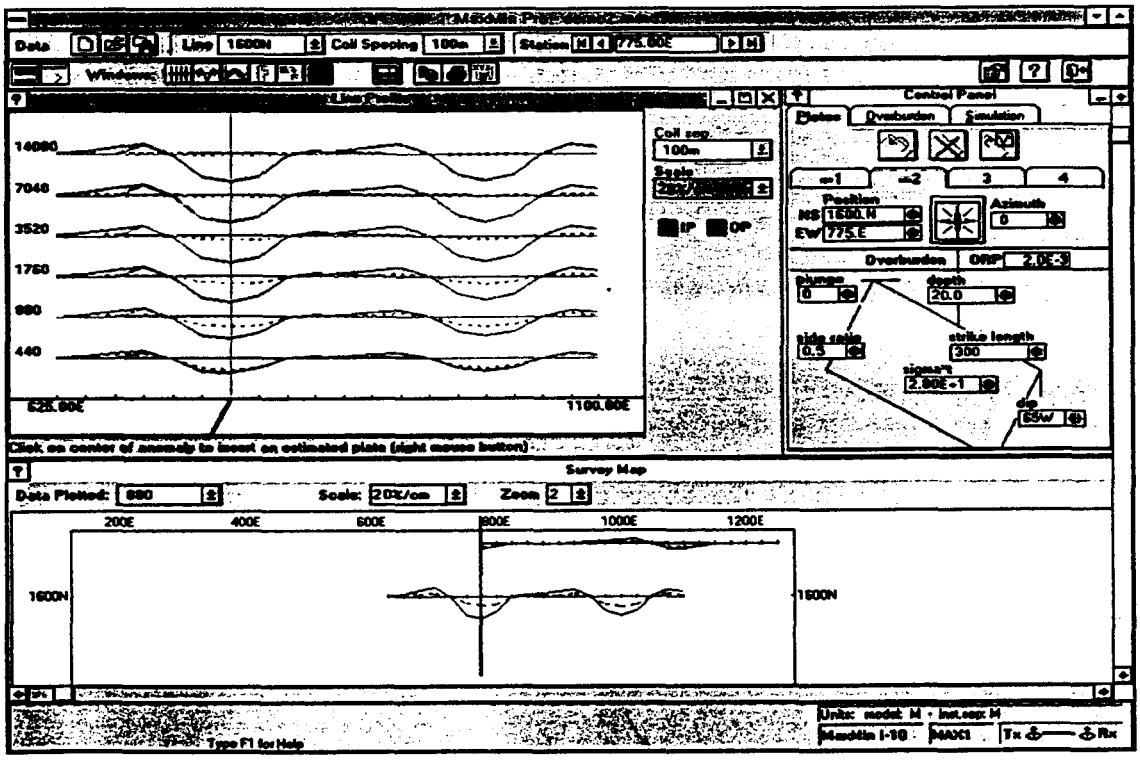
USER-FRIENDLY WINDOWS® BASED OPERATOR INTERFACE.

CLIPBOARD SUPPORT FOR DATA TRANSFER TO OTHER PROGRAMS.

ON-LINE DOCUMENTATION.

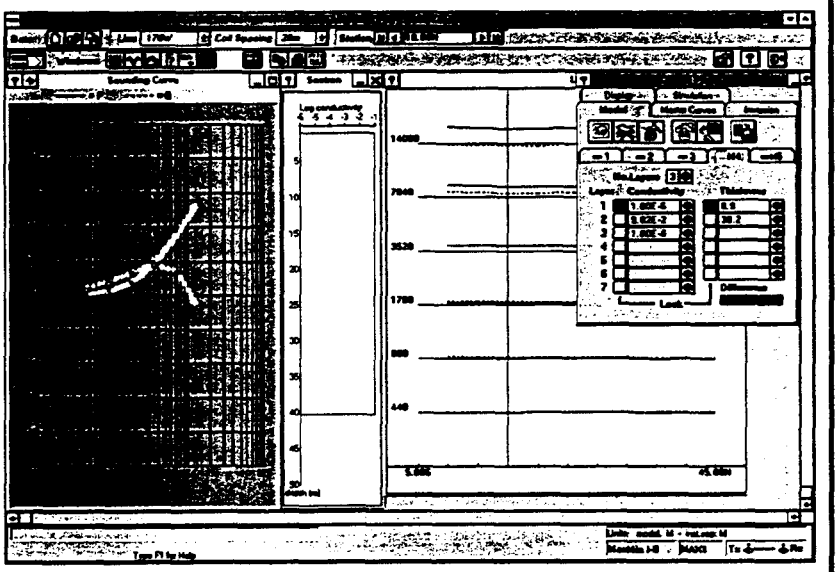
PLATE INTERPRETATION:

- Computing engine derived and improved from classical U of Toronto PLATE program.
- Up to 4 plates.
- Graphical insertion of plates.
- Plates positioned in survey grid coordinates.
- Automated curve matching for quick preliminary anomaly interpretation.
- Corrects for overburden conductivity.
- Up to 4 overburden zones.
- Graphical entry of overburden zones.



LAYERED EARTH INTERPRETATION:

- Semi-automated curve matching with half-space, 2 and 3 layer models.
- Forward modeling and Inversion.
- Up to 7 layers models.
- Parameter locking or constrained range for inversion.
- Complete inversion statistics output.
- Parametric (frequency), geometric (spacing), or mixed mode sounding.
- Data masking: can reject bad data points or use only quadrature.
- Optional normalization to low frequency in-phase to correct for geometrical errors.



ADDITIONAL MAXMIN PRO FEATURES:

SIMPLIFIED DATA INPUT:

- Automatically extracts data and survey information from the .MMD file.
- Graphical entry of plates.

SUPPORT FOR ALL OF THE MAXMIN MAXIMUM COUPLED MODES.

VERSATILE DISPLAY AND DATA VIEWS:

- In-phase and in-quad vs. frequency sounding.
- Phasor (Argand) diagram.
- Survey map (zoomable).
- Stacked line profile.
- Vertical conductivity section.
- Inversion statistics.
- Persistent display shows several models at once.
- User configurable window placement.

EASY DATA POINT SELECTION:

- Tape deck style line and station selectors or
- Selection by mouse click on survey map.

MODEL DATA BASE:

- Automatic creation of a model data base.
- Allows for interpretation in multiple sessions as previous results are saved.

VERSATILE OUTPUT CAPABILITIES:

- File output, including Geosoft .XYZ format.
- Printed report.
- Windows® clipboard for transfer to other applications.

ON-LINE DOCUMENTATION:

- Full featured Windows® Help hypertext documentation.

HARDWARE PROTECTION:

- Uses a «dongle» rather than software protection.

System requirements: Any xx86 computer running Windows® 3.1 or later, Windows 95®, or Windows NT® 3.5 or later with 2MB of disk space. A mouse or other pointing device is essential. While not absolutely essential, a color monitor of at least SVGA resolution is highly recommended. VGA is the minimum supported resolution. Floating point support is very highly recommended. Printer port is essential for printing and for connecting the hardware protection key.

A DEMONSTRATION PROGRAM IS AVAILABLE ON REQUEST

1998 - 04 - 14

APEX PARAMETRICS LIMITED

Telephone: 1 905 - 852 5875 Fax: 1 905 - 852 9688

P. O. Box 818, Uxbridge, Ontario, Canada L9P 1N2

MAXMIN COMPUTER MMC SPECIFICATIONS:

OPERATING SYSTEM:	Menu driven user-friendly hierarchial operating system, interfacing with MaxMin EM System receiver and with personal computers.
DISPLAY:	Extended temperature Liquid Crystal Display, with two lines of 24 alphanumeric characters each.
KEYBOARD:	18 tactile pushbutton keys
BEEPER:	To provide audible operator guidance and to speed up operations, especially in very cold weather.
CLOCK CALENDAR:	Date and Time (year, month, day, hour and minute).
COIL TILT:	Tilt display, with built in tilt sensor and measurement, with 0±99% topographic grade range and with 1% resolution.
IN-PHASE & QUADRATURE:	0±199.9% autoranging programmable gain system with 0.1% resolution for displayed data and 0.01% resolution for stored data.
APPARENT CONDUCTIVITY:	0.1 to 3276 milliSiemens (millimho) per metre available conductivity range, with conductivity arrived at using the quadrature, in-phase, frequency and coil separation data.
PROCESSOR:	16 bit low power CMOS CPU and bus at 6 MHz clock rate.
MEMORY:	ROM: 16 Kb, expandable to 64 Kb. RAM: 256 Kb, static CMOS.
PHYSICAL SIZE:	24.2 x 17.3 x 4.3 cm, to fit inside the MaxMin receiver leather case notebook pocket.
CARRYING WEIGHT:	1.0 Kilogram.
BATTERIES:	Two 9V-0.6Ah alkaline batteries. Battery life 28 hours continuous duty, less in cold weather. Optional 1.2 Ah lithium batteries recommended for very cold temperature operation. One lithium 3 Volt memory back-up battery, type 2032.
CONNECTIONS:	19 pin bayonet connector receptacle to connect to MaxMin receiver with the supplied tubular aluminum connectors. One each of DB25S and DB9S data transfer cords supplied for downloading data to personal computer serial ports.
TEMPERATURE RANGE:	Minus 30 to plus 60 degrees Celsius. Temperature sensing, measurement and display built-in.

Specifications are subject to changes without prior notification.

1998-04-01

Telephone: 1 905 852 5875 Facsimile: 1 905 852 9688 P. O. Box 818, Uxbridge, Ontario, Canada L9P 1N2

APEX PARAMETRICS LIMITED Airport: Toronto International

MAXMIN I+9 ELECTROMAGNETIC SYSTEM SPECIFICATIONS:

FREQUENCIES: 110, 220, 440, 880, 1760, 3520, 7040, 14080 and 28160 Hz.

COIL SEPARATIONS:
SET No. 1: 12.5, 25, 50, 75, 100, 125, 150, 200, 250, 300 and 400 metres (the standard set).
SET No. 2: 10, 20, 40, 60, 80, 100, 120, 160, 200, 240 and 320 metres (selected with grid switch inside the receiver).
SET No. 3: 50, 100, 200, 300, 400, 500, 600, 800, 1000, 1200 and 1600 feet (selected with grid switch inside the receiver).

TRANSMITTER DIPOLE MOMENTS:

110 Hz:	250 Atm²	3520 Hz:	120 Atm²
220 Hz:	245 Atm²	7040 Hz:	60 Atm²
440 Hz:	240 Atm²	14080 Hz:	30 Atm²
880 Hz:	230 Atm²	28160 Hz:	15 Atm²
1760 Hz:	220 Atm²		

MODES OF OPERATION:
MAX 1: Horizontal loop or slingram - transmitter and receiver coil planes horizontal and coplanar.
MAX 2: Vertical coplanar loop mode - transmitter and receiver coil planes vertical and coplanar.
MIN 1: Perpendicular mode 1 - transmitter coil plane horizontal and receiver coil plane vertical.
MIN 2: Perpendicular mode 2 - transmitter coil plane vertical and receiver coil plane horizontal.

PARAMETERS MEASURED: In-phase and quadrature componets of the secondary magnetic field, in % of primary field.

READOUTS: Analog direct edgewise meter readouts for in-phase, quadrature and tilt. Additional digital LCD readouts provided in the optional MMC computer. Interfacing and controls are provided for ready plug-in of the MMC.

RANGES OF READOUTS: Switch activated analog in-phase and quadrature scales: 0±4 %, 0±20 % and 0± 100 %, and digital 0±199.9 % autorange with optional MMC. Analog tilt 0±75 % and 0±99 % grade with MMC.

RESOLUTION: Analog in-phase and quadrature 0.1 to 1 % of primary field, depending on scale used, digital 0.01 % with autoranging MMC; tilt 1 % grade.

REPEATABILITY: 0.01 to 1 % of primary field, typical, depending on frequency, coil separation and conditions.

SIGNAL FILTERING: Powerline comb filter, continuous spheric noise clipping, autoadjusting time constant, and more.

WARNING LIGHTS: Receiver signal and reference warning lights to indicate potential error conditions.

SURVEY DEPTH PENETRATION: From surface down to 1.5 times coil separation for large horizontal target and 0.75 times coil separation for large vertical target, values typical.

REFERENCE CABLE: Lightweight unshielded 4/2 conductor teflon cable for maximum operating temperature range and for minimum pulling friction.

INTERCOM: Voice communication link provided for operators via the reference cable.

TEMP. RANGE: Minus 40 to plus 60 degrees Celsius, operating.

RECEIVER BATTERIES: Four standard 9 V - 0.6 Ah alkaline batteries. Life 20 hours continuous duty, less in cold weather. Optional 1.2 Ah extended life lithium batteries available (recommended for very cold weather).

TRANSMITTER BATTERIES: Rechargeable gel-type lead-acid 12 V -14 Ah batteries (4 x 6 V - 7.2 Ah) in nylon belt pack.

TRANSMITTER BATTERY CHARGERS: 14.8 V - 2.5 A nominal output with automatic switching to 13.8 V float mode after battery pack is charged . Operation from 110 - 120 and 220 - 240 VAC, 50/60/400 Hz , and from 10 - 14 VDC supplies.

RECEIVER WEIGHT: 8 Kg carrying weight (including the two ferrite cored receiver coils), 9 Kg with MMC computer.

TRANSMITTER WT: 15 Kg carrying weight.

SHIPPING WEIGHT: 60 Kg plus reference cables at 3 Kg per 100 metre, plus optional items if any. Shipped in two aluminum lined field/shipping cases.

STANDARD SPARES: Spare transmitter battery pack, spare transmitter battery charger, two spare transmitter retractile connecting cords, spare set of receiver batteries.

OPTIONS AND ACCESSORIES, PLEASE SPECIFY:
- MMC, Optional MaxMin Computer
- Data interpretation and presentation programs
- Reference cables, lengths as required
- Reference cable extension adapter
- Handheld inclinometer for rough terrain
- Receiver extended life lithium batteries
- Transmitter ni-cad battery and charger option
- Receiver rechargeable battery & charger option
- Minimal, regular or extended spare parts kit

Specifications are subject to changes without prior notification.

1998 - 04 - 01

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P. O. Box 818, Uxbridge, Ontario, Canada L9P 1N2
APEX PARAMETRICS LIMITED
Airport: Toronto International

SURVEY PROCEDURE

Atna personnel ensured that a grid was established prior to the arrival of the Delta Geoscience crew. Survey lines and stations were established by slope chaining out from tie lines on the north and south side of the properties. This procedure, while quite rapid, results in some significant mis-ties between lines, particularly when the topography is undulating and locally quite severe. The data was corrected by a software procedure developed by Apex Parametrics for slope chained lines.

The depth of investigation of a horizontal coplanar loop E.M. system (like the Maxmin) is considered to be 1.5 times the coil separation for a large horizontal target and 0.75 times the coil separation for a large vertical target. These figures are for the typical conductivity values seen in Canadian massive sulphide deposits. The depth of investigation for smaller targets and/or poorer conductivity mineralization would of course be proportionally less.

Bear in mind that the response parameter of a horizontal co-planar loop E.M. system is due to the product of the following components: $(\mu_o \omega l \sigma s)$

where μ_o = permeability of free space = $4\pi \times 10^{-7}$ henry/m.

ω = $2\pi f$ = rotational frequency.

l = coil separation (meters)

σ = conductivity (Seimens/meter)

s = thickness of conductor (meters)

Note that increases in the coil separation have the same effect as increasing the frequency on the response parameter. With large coil separations the system became

more sensitive to deep conductors, although the individual resolution ability for shallow, closely spaced conductors is lessened.

If the response parameter becomes too high, the system becomes unstable (overly sensitive) with large amplitude changes for very minor changes in conductivity. This high frequency problem will occur with large coil separations and weakly conductive host rocks, i.e. argillaceous metasediments. Clearly this conductive host problem limits the ability of any E.M. system to properly evaluate the response of a deep weak conductor. One is obliged to base the interpretation on the lower frequency data. As expected, there was a steady attenuation of the E.M. responses with lower frequencies throughout this survey.

The depth extent of conductors discussed in this report is listed as poor, moderate or good and is relative to the coil separation. Dip resolution is also relative to the coil separation.

The quadrature response of the E.M. system remains largely unaffected by coil separation and orientation errors (due to bad grid chaining) and does respond to the poorer quality conductors better than the inphase. These two facts have proven useful in the evaluation and outlining of the moderate to weak strength conductivity targets detected in this survey. The inphase response will focus on the better conductivity zones within a conductive zone. Good inphase data does however require good quality grid chaining. In mountainous terrain some grid chaining problems are unavoidable. To further eliminate the noise due to chaining errors, the lowest frequency inphase data (220Hz) can be subtracted from the higher frequency in-phase data. This procedure should only be used when the conductors of interest are weak to moderate conductivity,

i.e. virtually a zero response on the inphase at 220Hz. This procedure is technically correct since coil separation errors generally have the same amplitude regardless of the frequency. The subtraction process can therefore largely eliminate chaining errors from the more important higher frequency inphase data, without adversely affecting the anomalous bedrock conductor responses. This procedure was not used, nor necessary on the Fox data due to the slope correction procedures used by the Maxmin and significant inphase amplitudes at the lowest frequency.

The conductor technical parameters listed herein and the areal extent of the conductors shown on the accompanying map, are largely based on the 440Hz data. Note however that the estimation of the apparent width, depth and conductivity of the individual conductors is very frequency dependent. The 440Hz frequency does limit somewhat the host response, while still maintaining a significant amplitude response from the conductors of interest.

DISCUSSION OF THE DATA

Several conductive horizons were outlined in this survey. The surface trace of these conductors is shown on the 440Hz Data Plan. Starting from the east end of the grid, the conductors are numbered 1 through 8. The long strike length and weak to moderate conductivity of many of these conductive zones suggest formational and/or structural conductors, i.e. argillaceous carbon-rich metasediments and/or thrust faults. The apparent strike changes that occur with a shallow dipping horizon with major topography change may be a guide to whether or not a conductor is formational or structural.

There is some weak evidence that NNE oriented faulting has offset the conductive horizons.

A large area in the centre of the grid at 1200N, 3100E was not surveyed due to the very severe terrain, cliffs and extensive unstable talus.

CONDUCTOR #1:

- a moderate shallow conductor that extends along the north edge of the survey from 4300E to at least 3100E.
- conductivity appears better at the east end where the conductivity thickness product reaches 7 Seimens.
- moderate south dip?
- depth to top averages 10 meters.
- Conductive fault structure?

CONDUCTOR #2:

- a broad (50m) moderately good conductor centered at 1100N on L.4000E.

- conductivity thickness product 30 Seimens.
- depth to top 10 meters.
- dip moderately steep to the south.
- strike length uncertain due to possible fault complications and incomplete survey coverage to the east.

CONDUCTOR #3:

The discrete nature of this relatively deep conductor is of interest. It's possible that faults oriented to the NNE at 3700E and again at 3300E have uplifted this area. Host rocks for this conductor, which is centered at 1175N, 3650E appears to be more resistive, which could indicate an increase in the felsic component of the geology.

- depth extent good.
- dip approx. 30 deg. To the south.
- depth to top 75 meters.
- conductivity product 7 Seimens.
- limited strike length (300 meters).

CONDUCTOR #4:

- a thin very weak conductive zone centered at 3000E, 675N.
- strike length approx. 800 meters.
- conductivity thickness product 3 Seimens.
- depth to top 20 meters.
- moderate south dip.

CONDUCTOR #5:

- a moderate strength conductor occurring at the extreme south end (300N)of lines 2650E and 2500E, which was only partially defined.
- depth to top 10 meters.
- conductive thickness product 8 Seimens.

CONDUCTOR #6:

- a very shallow weak conductor or poor depth extent situated at the extreme north end (1180N) of lines 1900E, 2100E and 2300E, that is only partially defined.
- depth to top 6 meters.
- conductivity thickness product 4 Seimens.
- strike length at least 600 meters, but open to the west.

CONDUCTOR #7:

- a shallow thin moderate strength conductor centered at 460N, 1700E that remains open to the west.
- conductive thickness product 10 Seimens.
- moderate south dip.
- depth to top 12 meters.

CONDUCTOR #8:

- a shallow moderate strength conductor that is open to the west. May be related to conductor #5 discussed above.
- moderate south dip.
- depth to top 40 meters.
- conductivity thickness product 12 Seimens.

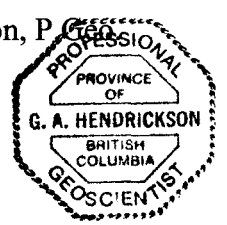
CONCLUSIONS AND RECOMMENDATIONS

Without detail geological and geochemical information, it is hard to establish the significance of these relatively shallow conductors. There are many indications all of these conductors are formational or structural in nature.

Conductor #3, although of limited strike length, should be studied carefully with the detailed geology. It's possible to have a steeply plunging cylindrical-shaped zone of mineralization giving rise to this type of conductor.

Magnetic field strength data, airborne or ground if available, would also help in the evaluation of the exploration significance of these conductive anomalies.

Grant A. Hendrickson, P.Geo.



REFERENCES

Apex Parametrics, 1998: Technical Manuals on the Maxmin System.

Ketola, M., and Puranen, M., 1967: Type Curves for the Interpretation of Horizontal Loop E.M. anomalies over tabular bodies. Geological Survey of Finland, Report on Investigations, N:01.

STATEMENT OF QUALIFICATIONS

Grant A. Hendrickson

- B.Science, University of British Columbia, Canada, 1971. Geophysics option.

- For the past 27 years, I have been actively involved in mineral exploration projects throughout Canada, the United States, Europe, Central and South America and Asia.

- Registered as a Professional Geoscientist with the Association of Professional Engineers and Geoscientists of the Province of British Columbia, Canada.

- Registered as a Professional Geophysicist with the Association of Professional Engineers, Geologists and Geophysicists of Alberta, Canada.

- Active member of the Society of Exploration Geophysicists, European Association of Geoscientists and Engineers, and the British Columbia Geophysical Society.

Dated at Delta, British Columbia, Canada, this 16 day of DEC, 1998.

Grant A. Hendrickson, P.Geol

PROFESSIONAL ENGINEERS
PROVINCE OF BRITISH COLUMBIA
G. A. HENDRICKSON
GEOSCIENTIST

APPENDIX III

DIAMOND DRILL LOGS

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DRILLHOLE : DDHFX98_01

PROJECT IDEN : FOX
COLLAR NORTHING: 3690.00
START DATE : 98/ 8/21
COLLAR EASTING : 4960.00
TOTAL LENGTH : 359.70
COMPLETION DATE : 98/ 8/24
COLLAR ELEVATION: 1689.00
CORE/HOLE SIZE : NQ
GEOLOGGED BY : PMH + PMH
GRID AZIMUTH : 0.00

SURVEY FLAG	SURVEY POINT LOCATION	FORESIGHT	AZIMUTH (DEGREES)	VERTICAL ANGLE (DEGREES)	NORTHING	EASTING
000	0.00		14.00	-45.00		
001	355.00		16.00	-52.00		

K	F L A G	- INTERVAL - (UNITS = FT) FROM	TO	CORE RECOVERY (%)	% ROCK TYPE	TYPIFYING MINERALS TM 1	TM 2	QAL MAT QM1	TEXTURES TX 1	TX 2	GRAIN CHARACS F	C	%	M	FRACTURE # TK	STRUCTUR-1 T	ID	STK	DIP	ALTERATION MINS H A QZ	H A BI	H A CY	H A CB	H A MG	ANY A XX	ORE-TYPE MINS H A PY	H A CP	H A GL	ANY A YY	SUMMARY
K	F			ROCK QUAL DESIG	FOR MEM AGE	EN V	RT Q	LC- COL	TM 3	QM2	TX 3	TX 4	S O R D	R N P C	S H	O /	DIP SML	F I	T 2	ID	STK AZM STRUCTUR-2	DIP RT	KF H A	MU H A	CL H A	EP H A	HE H A	HA H A	PR H A	MO H A	SL H A	HA H A
P		0.00	6.00			CASE										P													
P	FLT	6.00	9.80	26.0		FLTZ		GG8	GG	SH						P													
L				.0		9G																							
R		6.00	9.80	Toothpaste like 'core'; gouge appears to be derived from a mix																									
R		6.00	9.80	of ARGL, FXTR and possibly VSST.																									
P		9.80	20.00	93.0	CB	TRBX	CL	FX	LF7	CB	FR	N	7	P		P									<+				J2
L				10.0		AG		PY2	BX			A	C							P=	J=								
R		9.80	20.00	Appears to be a crackle breccia derived from altered FXTR;																									
R		9.80	20.00	however, it could be a primary texture. Frags are angular to																									
R		9.80	20.00	eliptical, and locally rounded, aphanitic and altered to a pale																									
R		9.80	20.00	green. Frags closely packed in a matrix of chlorite and																									
R		9.80	20.00	pyrite.																									
P		20.00	36.40	95.0	CB	TRBX	PY	CL	LF6	CB						P									P1				D2
L				20.0		NN		GR1												F1	J1								
R		20.00	36.40	Similar to previous interval only half the core is black Bx																									
R		20.00	36.40	with black or green frags in a black or green matrix. It looks																									
R		20.00	36.40	like the matrix and frags could be an alteration product of the																									
R		20.00	36.40	other. Narrow fault-gouge zones throughout.																									
P		36.40	48.70	96.0	CB	LATF	MS	CL	LF4	PM	CB	K	4	N		P													J2
L				20.0		EV	CB	5A	PY2			E	O							P2	J=								
R		36.40	48.70	Similar to previous interval, rock is a pyritic crackle breccia																									
R		36.40	48.70	derived from grit to LLTF, compromise with LATF. Some coarse																									
R		36.40	48.70	Fx suggests partly trachyte flow but perhaps these are just																									
R		36.40	48.70	frags. Some ARGL chips and pyritic frags as well. Alteration																									
R		36.40	48.70	reduces rock to waxy pale green crackle breccia with pyritic																									
R		36.40	48.70	matrix. Quite unusual!																									
P		48.70	57.70	83.0		ARGL			GR1	LM	BD					P	BD	50											
L				15.0		SD	3A			IB	TB																		

FOX

DRILLHOLE/TRAVERSE : DDHFX98_01 (CONTINUED)

K	F L A G	- INTERVAL - (UNITS = FT) FROM	TO	CORE RECOV-ERY (%)	% M I X	ROCK TYPE	TYPI-FYING TM 1	TM 2	QAL MIN MAT QM1	TEX-TURES TX 1	TX 2	GRAIN CHARACS F	C	%	M	FRAC-TURE #	TK	STRUCTUR-1 T	ID	STK AZM	DIP RT	ALTERATION MINS H A QZ	H A BI	H A CY	H A CB	H A MG	ANY MIN XX	ORE-TYPE MINS H A PY	H A CP	H A GL	ANY MIN YY	SUMMARY
K	F L G			ROCK QUAL DESIG	FOR MEM AGE	EN V	RT Q	TM LC- 3 COL	QM2	TX 3	TX 4	S O R	R N D	S H P	O / C	DIP SML	F I	T 2	ID	STK AZM	DIP RT	KF	MU	CL H	EP H	HE H	HA H	PR H	MO H	SL H	HA H	
																								A	A	A	A	A	A	A	A	
R		48.70	57.70		A mix of ARGL and GYWK; locally interbedded and thinly bedded.																												
R		48.70	57.70		Interval begins in rubble and is broken throughout indicating																												
R		48.70	57.70		faulting within interval or in general proximity.																												
N		48.70	57.70			4	GYWK									N																
P		57.70	72.90	97.0			LATF	GG	PY	LF4	FR	LM	K	4	O	P		T	BD		70						D=				
L				15.0				7G		MS2	SH			E	O								$2									
R		57.70	72.90		Essentially same rock as previous LATF but alteration is not as																												
R		57.70	72.90		severe and primary textures are preserved. Still extensively																												
R		57.70	72.90		broken and interval begins with very sheared tectonic Bx.																												
R		57.70	72.90		Interbedded GYWK layers.																												
P	FLT	72.90	81.70	93.0			FLTZ	GR	FX	GG6	SH	BX				P								P2				D=				
L				10.0				9G		QX=	GG	PP											P2									
R		72.90	81.70		Mostly fault gouge derived from adjacent units; QPTR and ARGL.																												
N		72.90	81.70			5	QPTR									N																
P	MIN	81.70	92.00	97.0			LLTF	CB	PY	MS3	FR	SH	L	3	N	P		T	TL		75		<+	P=			D+				
L				35.0				GA		LF3	BX	GC		R	O				FT		75	P3								L)	
R		81.70	92.00		Very intensely altered, primary textures faint, appears to be																												
R		81.70	92.00		fragmental, although some frags could be tectonic bx. Sp with																												
R		81.70	92.00		laminated Py in lower 3m of interval.																												
P		92.00	94.00	100.0			ARGL	CB		GR1	LM	TB				P		T	BD		75			<=			L=				
L				30.0				1A		PY=									FT		70										
R		92.00	94.00		Both contacts are sheared parallel to bedding. Very thin																												
R		92.00	94.00		laminae of pyrite.																												
P		94.00	101.80	99.0			XLAT	CB	QX	MS2	FG	LM				P											<+		J1			
L				30.0				7A		PY1	BX												P2									
R		94.00	101.80		Very fine grained ash tuff with 10-20% crystals and rare lithic																												
R		94.00	101.80		fragments. Pyrite infills localized crackle breccia. 50cm FT																												
R		94.00	101.80		gouge @ 96.8m																												
P		101.80	115.50	94.0			LLTF	PY	CB	LF3	FR	SH	L	3	O	P		T	LC		20	<+		<=	3=		O=				
L				24.0				9A		MS2	BX			E	O				TL		80		P2	F+							
R		101.80	115.50		Difficult to know what this rock is but best guess is																												
R		101.80	115.50		fragmental volc, LLTF. Lower part of interval is tectonic																												
R		101.80	115.50		breccia. Broken up altered core might also be FXTR and/or																												
R		101.80	115.50		ASHT. Lower part of interval has Py spots to 1cm that look																												
R		101.80	115.50		like replacement rather than frags.																												
P	FLT	115.50	124.60	65.0			ARGL	PY	CB	GG5	SH	GG				P		T	LM	80		<=		<=			L1				
L				.0				NN		GR1	LM	IB																				

FOX

DRILLHOLE/TRAVERSE : DDHFX98_01 (CONTINUED)

K E Y	F L A G	- INTERVAL - (UNITS = FT) FROM	TO	CORE RECOV-ERY (%)	% MEM I X	ROCK TYPE	TYPI-FYING TM 1	TM 2	QAL MIN MAT QM1	TEX-TURES TX 1	TX 2	GRAIN CHARACS F	C	%	M P	FRAC-TURE # TK	STRUCTUR-1 T	ID	STK AZM	DIP RT	ALTERATION MINS H A QZ	H A BI	H A CY	H A CB	H A MG	ANY MIN XX	ORE-TYPE MINS H A PY	H A CP	H A GL	ANY MIN YY	SUMMARY
K E Y	F L G			ROCK QUAL DESIG	FOR MEM AGE	EN V	RT Q	LC- 3 COL	TM	QM2	TX 3	TX 4	S O R	R N D	S H P	O / C	DIP SML	F I	T 2	ID	STK AZM	DIP RT	KF	MU	CL H	EP H	HE H	HA H	PR H	MO H	SL H	HA H
																									A	A	A	A	A	A	A	A
R		115.50	124.60																												
R		115.50	124.60																												
P		124.60	128.50	98.0		FXTR	PY	AM	FX2	SH	FG					P			UC		45	<+		<1			72			
L				.0			7A		GG3	MP	AM								LC		15		P1								
R		124.60	128.50																												
R		124.60	128.50																												
N		124.60	128.50			6	FLTZ									N															
P		128.50	135.30	75.0		ARGL	PY	CB	GG5	SH	GG					P			FT		30			<1			72			
L				.0			NN		GR2	VN									LC		45										
R		128.50	135.30																												
N		128.50	135.30			6	FLTZ									N															
P		135.30	140.40	98.0		LXTF	MS		LF3	FR	PM	L	3	N		P						<+		<+			D+			
L				20.0	PC		9G		QX1	SH			R	O									P2								
R		135.30	140.40																												
R		135.30	140.40																												
P	FLT	140.40	159.80	99.0		LLTF	PY	GG	LF5	FR	PM	K	5	N		P			FO		50						F+			
L				5.0			7G		MS2	GG			E	O									P2								
R		140.40	159.80																												
R		140.40	159.80																												
R		140.40	159.80																												
R		140.40	159.80																												
P		159.80	177.70	98.0		FXTR			PY2	MP						P						<=		<=			D2			
L				35.0	IN		5A		FX2																						
R		159.80	177.70																												
R		159.80	177.70																												
N		170.00	177.70			7	FLTZ									N															
P	MIN	177.70	190.00	50.0		LATF	SX	GG	LF2	SH	IB	L	2	N		P												L2		L)	
L				.0	EX		3A		PY2	FR	GG		E	O									P1							L+	
R		177.70	190.00																												
R		177.70	190.00																												
R		177.70	190.00																												
R		177.70	190.00																												
R		177.70	190.00																												
N		177.70	184.00			5	FLTZ									N															
P		190.00	213.80	99.0		APTR	CB	CL	KF4	AP	BX					P						<+		3=			D.			
L				10.0	IN		9G		EP=	IB													31	P=							
R		190.00	213.80																												

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DRILLHOLE/TRAVERSE : DDHFX98_01 (CONTINUED)

```
   F   - I N T E R V A L -  CORE      %      TYPI- QAL  TEX- GRAIN FRAC-       STRUCTUR-1 ALTERATION MINS  ORE-TYPE MINS
K  L (UNITS = FT)           RECOV-    M ROCK FYING MIN TURES CHARACS TURE                 H  H  H  H  H ANY H  H  H ANY
E  A                         ERY      I      TM TM MAT TX TX F C % M          T ID STK DIP  A  A  A  A  A MIN A  A  A MIN
Y  G   F R O M  -  T O      ( % )     X TYPE  1  2 QM1  1  2 F F C P  # TK    1    AZM  RT QZ BI CY CB MG XX PY CP GL YY  SUMMARY
- --- -----.--   -----.--    ----.- -- - ---- -- -- --- -- -- - - - - - -- -- -  - -- --- --- -- -- -- -- -- -- -- -- -- --  - - - -
K  F                        ROCK   FOR EN RT    TM QM2 TX TX S R S O DIP F    T ID STK DIP KF MU CL EP HE HA PR MO SL HA
E  L                        QUAL   MEM  V  Q LC- 3      3  4 O N H / SML I    2    AZM  RT       H  H  H  H  H  H  H  H
Y  G                        DESIG  AGE       COL            R D P C          STRUCTUR-2        A  A  A  A  A  A  A  A

R       190.00     213.80        Interspersed fragmental and massive units.  Some coarse
R       190.00     213.80        fragmental.  Looks like flow, or even healed tectonic, breccia;
R       190.00     213.80        possibly coarse pepperites.  More chloritic alteration than is
R       190.00     213.80        common.
N       190.00     213.80             3 LLTF                              N

P       213.80     238.00    100.0       LLTF CL CB LF4 FR WD   L 4 O       P    FO      80 <)        3=       D.
L                             60.0            7G    MS1 PS PM     E O            TL      80    P1 P+
R       213.80     238.00        Pale green streaky lapilli tuff.  Frags from 1 to 60mm but most
R       213.80     238.00        in the 2-10mm range.  Large exotic clasts are scattered
R       213.80     238.00        throughout.  Locally, fine mud chips are observed.  Moderate
R       213.80     238.00        sericite and carbonate alteration.  Low Py content, however,
R       213.80     238.00        this looks like PLTF without the pyritic fragments.  Loacally
R       213.80     238.00        grades into narrow layers of ASH/GYWK.

P FLT   238.00     239.50             FLTZ       GGX                      P

P       239.50     252.30     90.0       LLTF CB GR LF3 FR WD   K 3 M       P    BD      85           31       D+
L                             25.0            7G    MS2 $T IB     F O            FO      85    $2
R       239.50     252.30        As previous interval but finer grained, better sorted, and
R       239.50     252.30        interbedded with minor argillite and greywacke.
N       239.50     252.30             2 ARGL                              N

P       252.30     303.40    100.0       APTR CB CL EP1 AP MX                P              <+       3+       <+
L                             90.0      IN    7G    AM1 BX IB                                 <+ P1             J.
R       252.30     303.40        Pale to lime green aphanitic trachyte.  Intercalated with GYWK
R       252.30     303.40        with a "thermal-shock" breccia with minor Sp in the breccia
R       252.30     303.40        matrix.  Locally, very amygdaloidal and pervasive dark green
R       252.30     303.40        serpentine-like alteration.  Sp sparesly distributed in
R       252.30     303.40        fractures and 'amygdules' or carb clasts.

P       303.40     310.70    100.0       APTR QZ CB CL2 AP MT                P              <=       31       D)
L                             65.0      IN    3G    MS2 VN                                 P2 P2
R       303.40     310.70        Altered to dark green, soft 'chloritic' rock.  Textures as in
R       303.40     310.70        previous interval are preserved.  Could be tuffaceous near the
R       303.40     310.70        lower contact.

P       310.70     312.60     99.0       ARGL LF PY GR1 FG      L = N        P                                7+
L                              5.0            NN    XF1             R O
R       310.70     312.60        Black argillite with about 10% white xtal frags and 5% stray
R       310.70     312.60        lithic clasts.

P       312.60     318.40    100.0       XATF       XF4 FG                   P    BD      70                       D.
L                                        7A    LF=
```

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DRILLHOLE/TRAVERSE : DDHFX98_01 (CONTINUED)

KEY	FLAG	FROM	TO	CORE RECOVERY (%)	%MIX	ROCK TYPE	TYPIFYING 1	TYPIFYING 2	QAL MIN MAT	QM1	QM2	TEXTURES 1	TEXTURES 2	GRAIN CHARACS F	C	%	M	FRACTURE # TK	STRUCTUR-1 T	ID	STK AZM	DIP RT	ALTERATION MINS H QZ	H BI	A CY	H CB	A MG	H XX	ANY MIN	ORE-TYPE MINS H PY	A CP	H GL	ANY MIN YY	SUMMARY
K	F			ROCK QUAL DESIG	FOR MEM AGE	EN V	RT Q	LC- COL	TM 3			TX 3	TX 4	S O R	R N D	S H P	O / C	DIP SML	F I	T 2	STRUCTUR-2														
R		312.60	318.40		Very fine grained Qz/Fx xtal ash. A few stray lithic clasts could also be called a GYWK but the lower 1.5m is coarser grained with subrounded Fx to 4mm (approx. 10%) in a fine grained ground mass.																														
P		318.40	330.70	100.0		QPTR			QX+			FG		IB				P					<+				3+			D)			
L				45.0	SSU		AG		EP=			MT															Q+	P=					
R		318.40	330.70		Weakly porphyritic with rare Qz grains. Lime green aphanitic rock fades in and out of grey aphanitic rock, locally a suggestion of ash layers (??). Also dark green patches (alteration?). Still, typical of SSU. 10cm pyritic fault gouge @ 320.4m.																														
N		318.40	330.70			2 ASHT												N															
P		330.70	336.90	100.0		VSLT			MS2			FG		LM				P		LM		80								D.			
L				.0			5A		LF)			FO												P2									
R		330.70	336.90		Medium grey volcanic siltstone. Very fine grained, soft, and rare lithic clasts.																														
P		336.90	343.40	100.0		APTR			EP1			FG		BX				P					<+				<+			D.			
L				35.0			5G		AP																		<)	P1					
R		336.90	343.40		Pistachio green aphyric trachyte, sandwiching 70cm of graphitic argillite. Contact area with ARGL is pyritic.																														
P		343.40	347.00	97.0		ARGL	CB		GR1			AP		LM				P		LM		65								L)			
L				.0		SD	NN		PY)											FO		65											
R		343.40	347.00		Jet black ARGL, thin slivers of Py. Becomes finer grained and more graphitic at bottom.																														
P		347.00	356.50	100.0		ASHT	PY	CB	LF1			FG		MM	J	1	N	P					<=				3=			D+			
L				40.0			9G		MS1			MV			E	O																	
R		347.00	356.50		Pistachio green to grey. Very fine grained, looks trachytic but wispy monomictic frags, foliation and grading into GYWK at base indicate a tuffaceous rock. Much harder than VSLT.																														
P		356.50	359.70	96.0		ARGL			GR2			FG		SH				P		FO		70								D.			
L				.0		SD	NN		XF2			GG																					
R		356.50	359.70		As previous, jet black with very fine white xtals (Fx?). Foliated and sheared, locally crumpled and gougey.																														

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DRILLHOLE/TRAVERSE : DDHFX98_01 (CONTINUED)

S U M M A R Y R E M A R K S

It was anticipated that the hole would collar in FXTR and intersect the upper mineralized horizon within the first 75m. Not! The hole collared in an unusual fragmental composed of highly altered FXTR in an argilliceous matrix; possibly some form of debris flow or tectonic mix-master. This is followed by almost 100m of interbedded epivolcaniclastic, pyroclastic and sedimentary rocks, all of which may be a hanging wall sequence not seen before. From 124m to 250m is a sequence of pyritic trachyte sills/flows interlayered with pyroclstic rocks and culminating in a 'mineralized' lithic ash tuff.
From 0 to 250m, rocks are characterized by extensively broken, gougey and sheared core. These rocks have been subjected to considerable brittle strain. Possibly drilled parallel to fault? The lower 90m of the hole is the SSU: interlayered aphyric sills, ash and sediments, ending in an argillaceous sequence. The lower mineralized horizon is not present. Possibly enough Sp to explain the geochem anomaly. In general, the lithologies and condition of the core in this hole is a big surprize and dissappointment. It is difficult to correlate this hole with 97-04 along strike 600m away.

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DRILLHOLE/TRAVERSE : DDHFX98_02

PROJECT IDEN : FOX
COLLAR NORTHING: 5005.00
START DATE : 98/ 8/25
COLLAR EASTING : 3970.00
TOTAL LENGTH : 143.30
COMPLETION DATE : 98/ 8/26
COLLAR ELEVATION: 1448.00
CORE/HOLE SIZE : NQ
GEOLOGGED BY : PMH + PMH
GRID AZIMUTH : 0.00

SURVEY FLAG	SURVEY POINT LOCATION	FORESIGHT	AZIMUTH (DEGREES)	VERTICAL ANGLE (DEGREES)	NORTHING	EASTING
000	0.00		50.00	-45.00		

K	F L A G	- INTERVAL - (UNITS = FT) FROM	TO	CORE RECOVERY (%)	% M I X	ROCK TYPE	TYPIFYING 1	TYPIFYING 2	QAL MIN MAT	TEXTURES 1	TEXTURES 2	GRAIN CHARACS F	C	% M	P	FRACTURE # TK	STRUCTUR-1 T	ID	STK AZM	DIP RT	ALTERATION MINS H A QZ	H A BI	H A CY	H A CB	H A MG	ANY MIN XX	ORE-TYPE MINS H A PY	H A CP	H A GL	ANY MIN YY	SUMMARY
K	F L G	ROCK QUAL DESIG	FOR MEM AGE	EN V	RT Q	LC-COL	TM 3	QM2	TX 3	TX 4	S O R D	R N P C	H /	SML	DIP I	F	STRUCTUR-2 T	ID 2	STK AZM	DIP RT	KF	MU	CL H	EP H	HE H	HA H	PR H	MO H	SL H	HA H	
P		0.00	4.60			CASE										P															
P		4.60	11.70	90.0		LLTF	MS	XF	LF3	FR	WD	L	3	O		P	TL		50							P2				F+	
L				15.0		PC	AG		CB2	PM			E	O			FO		45	P2											
R		4.60	11.70			Fairly coarse, poorly to moderately sorted, lapilli tuff.																											
R		4.60	11.70			Moderate to intense carbonate-musc. alteration. Trace dissem.																											
R		4.60	11.70			Py but most Py in Sx-rich frags. Although polymict, frags are																											
R		4.60	11.70			quite similar. Weak welded texture.																											
P		11.70	32.00	93.0		FXTR	QZ	PY	FX3	MP	FG					P					V=				A+				D)	
L				10.0		IN	7A		AM=	WS																					
R		11.70	32.00			Fine-grained micro-porphyry, loacally amygdaloidal (near upper																											
R		11.70	32.00			contact) low pyrite FXTR. Very broken core throughout.																											
P	FLT	32.00	33.40			FLTZ			GG5							P															
L							7A																								
N		32.00	33.40		5	FXTR										N															
P		33.40	74.00	75.0		FXTR	CB		FX4	PP	GG					P					<+				3=				D2	
L				10.0		IN	7A		PY2	SM												P=								
R		33.40	74.00			Quite broken and faulted. Unit has almost pink hue to it																											
R		33.40	74.00			(K-Spar or He?) and Py is extremely fine-grained but coarsens																											
R		33.40	74.00			and increases with depth.																											
P		74.00	92.40	100.0		LLTF	CB	XF	LF4	FR	PM	L	4	O		P	TL		60	<+						P2				D+	
L				55.0		PC	7G		MS2	GC			S	O								P2					P=				
R		74.00	92.40			Unit grades from finer fragments on top to coarser frags below.																											
R		74.00	92.40			Rock is polymict but majority of clasts are likely from the																											
R		74.00	92.40			same eruption. Rare pyritic frags. Bottom of interval has																											
R		74.00	92.40			increasing ARGL frags and matrix becomes increasingly																											
R		74.00	92.40			argillaceous over 1.5m.																											
P		92.40	103.80	65.0		ARGL			GR2	GC	LM					P	LM		60							<+					
L				5.0		SD	NN		LF2	FR	IB						LM		50												

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DRILLHOLE/TRAVERSE : DDHFX98_02 (CONTINUED)

K E Y	F L A G	FROM	TO	CORE RECOVERY (%)	% MIX	ROCK TYPE	TYPIFYING TM 1	TYPIFYING TM 2	QAL MIN MAT QM1	TEXTURES TX 1	TEXTURES TX 2	GRAIN CHARACS F	C	%	M	FRACTURE # TK	STRUCTUR-1 T	ID	STK AZM	DIP RT	ALTERATION MINS H A QZ	H A BI	H A CY	H A CB	H A MG	ANY MIN XX	ORE-TYPE MINS H A PY	H A CP	H A GL	ANY MIN YY	SUMMARY
K E Y	F L G			ROCK QUAL DESIG	FOR MEM AGE	EN V	RT Q	LC-3 COL	QM2	TX 3	TX 4	S O R	R N D	S H P	O / C	DIP SML	F I	T 2	ID	STK AZM	DIP RT	KF	MU	CL H	EP H	HE H	HA H	PR H	MO H	SL H	HA H	
																			STRUCTUR-2					A	A	A	A	A	A	A	A	
R		92.40	103.80																											
R		92.40	103.80																											
R		92.40	103.80																											
					Unit begins as a fragmental with argillaceous matrix for 1.5m then becomes an interlayered green siltstone and black argillite. Lower 1.5m is sheared and extremely graphitic.																											
P		103.80	107.90	90.0		LLTF			LF7	FR	CS	L	7	N		P								P1		D+				
L				10.0		PC			AG			PM		R	C							P=							D.		
R		103.80	107.90																											
R		103.80	107.90		Clast supported, polymict fragmental. Clasts have fuzzy borders and appear to merge into other clasts. Could be																											
R		103.80	107.90		epiclastic. Some sulphide clasts and trace of Sp. Core is																											
R		103.80	107.90		very broken. Narrow (20-50cm) dykes of PPTR.																											
P		107.90	114.80	99.0		PPTR			CL	CB	PX2	PP	SE			P								H=		D=				
L				20.0		IN			3A		FX2												Z1							
R		107.90	114.80		Possibly a new unit. Rock is dark to light gray with medium																											
R		107.90	114.80		grained black phenocrysts, some of which are rounded, others																											
R		107.90	114.80		are stubby and rectangular, pyrox, Hbl or altered Fx?? Fx are																											
R		107.90	114.80		fine grained to micro and are anhedral and chlorite altered.																											
P		114.80	143.30	99.0		DBRF			CB	XF	LF5	FR	PM	L	5	P		P							D1		D)				
L				60.0		EC			AG		MS1	PS	CS		S	C							P1	F+							
R		114.80	143.30		Top of unit has 30cm of caorse grnd & brecciated PPTR (was core																											
R		114.80	143.30		put into box backwards? I think so!) and 1.5m further down 60cm																											
R		114.80	143.30		of ARGL. Lith is clast supported, polymictic, poorly sorted																											
R		114.80	143.30		fragmental with large rounded to small angular fragments.																											
R		114.80	143.30		Could be equivalent to GMBX except that most frags are not																											
R		114.80	143.30		trachyte.																											

S U M M A R Y R E M A R K S

Hole was drilled to test area inbetween massive Py+ARGL in creek and geochem anomaly to southeast, along trend of airborne conductor. Drillhole collared in moderately altered LLTF followed by 60m of FXTR which was "dry" at the upper contact but became more pyritic with depth. Below FXTR is LLTF-DBFL; starts as pyroclastic but becomes more epiclastic with depth. At the pyro-epiclastic transition there is a sedimentary horizon including 1.5m of graphitic ARGL (=conductor). The lower part of hole is polymictic debris flow. Relative to Creek exposure FXTR has switched position (footwall to HW) and m may have truncated mineralized horizon.

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FOX

DRILLHOLE/TRAVERSE : DDHFX98_03

PROJECT IDEN : FOX | START DATE : 98/ 8/27 | COMPLETION DATE : | GEOLOGGED BY : LHW + PMH
COLLAR NORTHING: 4730.00 | COLLAR EASTING : 3641.00 | COLLAR ELEVATION: 1468.00 | GRID AZIMUTH : 0.00
TOTAL LENGTH : 184.70 | CORE/HOLE SIZE : NQ

SURVEY FLAG	SURVEY POINT LOCATION	FORESIGHT	AZIMUTH (DEGREES)	VERTICAL ANGLE (DEGREES)	NORTHING	EASTING
000	0.00		44.00	-45.00		
001	18.30		45.50	-45.00		
002	175.60		49.00	-46.00		

KEY	FLAG	FROM	TO	CORE RECOVERY (%)	% MINERALIZATION / ROCK TYPE	TYPIFYING MINERALOGY 1	TYPIFYING MINERALOGY 2	QUALITATIVE MINERALOGY QM1	TEXTURES 1	TEXTURES 2	GRAIN CHARACTERISTICS	FRACTURE	STRUCTURE-1	ALTERATION MINS	ORE-TYPE MINS	SUMMARY
K E Y	F L A G	F R O M	T O	(%)	X TYPE	1	2	QM1	1	2	F F C P	# TK	T ID STK DIP AZM RT	A A A A A QZ BI CY CB MG	A ANY A A A XX PY CP GL	
K E Y	F L G	FOR MEM AGE	EN RT V Q	ROCK QUAL DESIG	TM QM2	LC- 3 COL	TX TX 3 4	S R S O DIP F O N H / SML I R D P C					T ID STK DIP 2 AZM RT STRUCTUR-2	H H H H H H H H H H EP HE HA PR MO SL HA A A A A A A A A	H ANY A A MIN A A A MIN YY	
P		0.00	6.10		CASE							P				
P		6.10	14.70	85.0	XATF	FX		CB2	FG	WD	J 1 K	P	TL 40	32		
L				25.0		AT		MF1	ST		F O			D1		
R		6.10	14.70	Cb-altered, welded XATF. Crystals are predominantly wispy Cl												
R		6.10	14.70	with minor Fx. Cb is pervasive and also forms 7% spots. Lower												
R		6.10	14.70	contact is gradational.												
P		14.70	20.60	85.0	LATF	PY	CB	LF2	FR	HL	L 2 N	P	FO 65	3=	P2	
L				40.0		AG		MS2	FO		F O			$2 $1		
R		14.70	20.60	Ms+Cl altered LATF. Lithic frags are vague due to alteration.												
R		14.70	20.60	Moderately to strongly foliated. Lower contact gradational.												
P	MIN	20.60	24.30	100.0	SMSX	LF	CB	PY4	FR	HL	M 1 P	P	FO 55	31	P4	
L				95.0	EX			MS2	FO	GC	E O			$2 $=		D.
R		20.60	24.30	Foliated, fragmental SMSX (mineralized LLTF). Frags are												
R		20.60	24.30	distinct to vague; partial to wholy replaced frags by Ms.												
R		20.60	24.30	Minor euhedral Fx (0.3 to 1.0mm).												
P		24.30	46.70	80.0	APTR	FX		CB2	ST	FG	P	V)		32		
L				60.0		AT		CL2	SA	GC		V2				
R		24.30	46.70	Cb-spotted APTR with minor Fx. Chlorite occurs in patchy zones												
R		24.30	46.70	throuhgout interval. Cb occurs as amydaloidal spots as well as												
R		24.30	46.70	variable 0.2-0.5mm veinlets. Colour varies from light tan-gray												
R		24.30	46.70	to dark green (where Cl altered). Lower contact gradational.												
R		24.30	46.70	Interval is quite broken.												
P		46.70	71.50	95.0	LATF	CB	GR	PY1	FR	HL	L 2 N	P	FO 50	3=	D1	
L				40.0		3A		CL1	FO		F O			$= $1		
R		46.70	71.50	Cl-altered LATF with argillaceous matrix. Graphitic ARGL at												
R		46.70	71.50	46.7m for 1m and 64.4 for 1.1m. High volcanic ash component												
R		46.70	71.50	(>50%). Lithic frags are vague due to alteration and contacts												

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FOX

DRILLHOLE/TRAVERSE : DDHFX98_03 (CONTINUED)

KEY	FLAG	FROM	TO	CORE RECOVERY (%)	% MIX	ROCK TYPE	TYPIFYING TM 1	TYPIFYING TM 2	QAL MIN MAT QM1	TEXTURES TX 1	TEXTURES TX 2	GRAIN CHARACS F	C	% M	P	FRACTURE # TK	STRUCTUR-1 T	ID	STK AZM	DIP RT	ALTERATION MINS H A	H A	H A	H A	H A	ANY H MIN A	H A	H A	ANY H MIN	ORE-TYPE MINS	SUMMARY
R		46.70	71.50																												
																															are gradational.
P		71.50	73.60	95.0		ARGL	LF		GR1	FG	FO		L	=	N		P		FO	55								D=		
L				50.0		SD	NN		PY=	FR	GC																				
R		71.50	73.60																												Tuffaceous argillite with minor vague lithic frags and f-grnd
R		71.50	73.60																												dissem Py.
P		73.60	85.20	75.0		ASHT	CB		VA9	FG	FO						P		FO	55			<+							
L				50.0		PC	7A		CL+	WS	SC											H+									
R		73.60	85.20																												Well foliated, fine graind ash. Cl replaces mafic frags or
R		73.60	85.20																												crystals (?). Lower contact sharp, however to broken to
R		73.60	85.20																												measure contact angle. Lower part of interval quite broken.
P		85.20	164.10	98.0		BTBX	MS	QZ	LF5	BX	CG		N	5	R		P					P=		P3		BA	D+			
L				85.0			YG		CB3	HL	PS		A	C								H3				J=		D.		
R		85.20	164.10																												Bathroom tile breccia. A fragmental rock with angular to
R		85.20	164.10																												rounded, poorly sorted fragemnts, altered and silicified. Very
R		85.20	164.10																												unusual both in texture and alteration. Yellow green and would
R		85.20	164.10																												make nice looking quarry stone. Minor interstitial barite and
R		85.20	164.10																												strong Ms-Cb alteration of fragments. Some fragments are
R		85.20	164.10																												Qz-phyric. Cut by QPTR at 113.9-118.9; 138.3-140.4; and
R		85.20	164.10																												152.2-154.6m. QPTR is qz-phyric, tan coloured and contacts are
R		85.20	164.10																												relatively sharp but do not display chilled margins.
P		164.10	187.80	98.0		LLXT	CB	MS	LF2	FR	HL		L	3	M		P		FO	70	Y3			32			D+		
L				90.0			TG		QX3	CG	FO		E	O								$2									
R		164.10	187.80																												Poorly sorted LLXT. Fragments are flattened in uppermost 6.4m
R		164.10	187.80																												of interval (strongly foliated) and more angular throughout the
R		164.10	187.80																												rest of the interval. Approx. 10% euhedral Fx as well. Cb+Ms
R		164.10	187.80																												alteration of matrix is intense, but also silicified (very slow
R		164.10	187.80																												drilling here). This interval quite similar to previous but
R		164.10	187.80																												finer grained and abundant Fx + Qx.

KEY	FLAG	STRUCTUR-2	ALTERATION MINS A	A	A	A	A	MIN A	A	A	MIN	ORE-TYPE MINS
K	F	ROCK QUAL	FOR MEM	EN V	RT Q	TM LC- 3	QM2	TX 3	TX 4	S O	R N	H /	DIP SML	F I	T 2	ID	STK AZM	DIP RT	KF	MU	CL H	EP H	HE H	HA H	PR H	MO H	SL H	HA H
E	L																				A	A	A	A	A	A	A	A
Y	G	DESIG	AGE			COL				R	D	P	C															

ATNA RESOURCES LTD.
FOX

DRILLHOLE/TRAVERSE : DDHFX98_04

PROJECT IDEN : FOX | START DATE : 98/ 8/30 | COMPLETION DATE : | GEOLOGGED BY : LHW + PMH
COLLAR NORTHING: 4620.00 | COLLAR EASTING : 3640.00 | COLLAR ELEVATION: 1468.00 | GRID AZIMUTH : 0.00
TOTAL LENGTH : 259.10 | CORE/HOLE SIZE : NQ

SURVEY FLAG	SURVEY POINT LOCATION	FORESIGHT	AZIMUTH (DEGREES)	VERTICAL ANGLE (DEGREES)	NORTHING	EASTING
000	0.00		44.00	-45.00		
001	200.00		47.00	-46.00		

K	F L A G	- INTERVAL - (UNITS = FT) FROM	TO	CORE RECOVERY (%)	% MINERAL IX	ROCK TYPE	TYPIFYING TM 1	TYPIFYING TM 2	QAL MIN MAT QM1	TEXTURES TX 1	TEXTURES TX 2	GRAIN CHARACS F	C	% M	FRACTURE P	# TK	STRUCTUR-1 T	ID	STK AZM	DIP RT	ALTERATION MINS H QZ	H AA BI	H AA CY	H AA CB	H AA MG	ANY MIN XX	ORE-TYPE MINS H PY	H CP	H GL	ANY MIN YY	SUMMARY
K	F L A G			ROCK QUAL DESIG	FOR MEM AGE	EN V	RT Q	LC- COL	TM 3	QM2	TX 3	TX 4	S O R D	R S N P	S H P C	O /	DIP SML	F I	T 2	ID	STK AZM	DIP RT	KF H A	MU H A	CL H A	EP H A	HE H A	HA H A	PR H A	MO H A	SL H A	HA H A
P		0.00	3.00					CASE									P														
P		3.00	18.30	60.0				FXTR	FL	IL	CB2	SA	ST				P				V.					O2					
L				40.0				AT	FX=																						
R		3.00	18.30	Carb-spotted FXTR with 2% irregular pale green fluoromica(?)																											
R		3.00	18.30	spots. 0.3% Il on fracture surfaces. Very broken and much																											
R		3.00	18.30	lost, ground up core. Can not decipher lower contact - has																											
R		3.00	18.30	dyke like appearance - possibly QPTR.																											
P		18.30	54.00	95.0				DBRF	FX	PY	LF3	FR	CG	M	3	Q	P				Y2			H2		Y1				
L				75.0		EC		5A		CB2	HL	PS		S	O							$1									
R		18.30	54.00	Poorly sorted, hard (silicified?) debris flow. 15% ARGL forms																											
R		18.30	54.00	matrix (ie: BMBX) 5% euhedral Fx 2-4mm. Cb replaces fragments																											
R		18.30	54.00	and comprises a part of matrix. Frags vary from angular to																											
R		18.30	54.00	rounded. Lower contact broken but relatively sharp.																											
P		54.00	54.90	98.0				ARGL		GR2	FG	GB					P		BD	60							L1			
L				10.0		SD		NN		PY1																					
R		54.00	54.90	Graphitic ARGL with 10% fine-grnd, bedded, graded Py. Py at																											
R		54.00	54.90	lower contact with FXTR. Broken core.																											
P		54.90	56.70	100.0				FXTR	QZ	FX=	FG	PP					P				V+			V=							
L				85.0		IN		AT		CB=	VN	SC																			
R		54.90	56.70	Fine-grained to sub-aphanitic FXTR. Fx partially to wholy																											
R		54.90	56.70	replaced by Cb. Lower contact is sharp but irregular with																											
R		54.90	56.70	evidence of soft-sed style deformation.																											
P		56.70	57.90	98.0				ARGL		GR2	FG	NB					P		BD	45							Y=			
L				10.0		SD		NN		PY=	SC																				
R		56.70	57.90	Graphitic ARGL with nodular fine-grained laminated Py and minor																											
R		56.70	57.90	Fx phenos/frags.																											
P		57.90	104.40	95.0				FXTR	PY	CL	CB2	ST	SA				P				V+			O2			D1			

ATNA RESOURCES LTD.
FOX

DRILLHOLE/TRAVERSE : DDHFX98_04 (CONTINUED)

KEY	FLAG	- INTERVAL - (UNITS = FT) FROM	TO	CORE RECOVERY (%)	%MIX	ROCK TYPE	TYPIFYING 1	TYPIFYING 2	QAL MIN MAT QM1	QM2	TEXTURES TX 1	TX 2	TX 3	TX 4	GRAIN CHARACS F	C	S	R	H	O	P	FRACTURE %	/	M	#	DIP	TK	F	STRUCTUR-1 T	ID	STK AZM	DIP RT	ALTERATION MINS H A QZ	H A BI	H A CY	H A CB	H A MG	H A ANY XX	ORE-TYPE MINS H A PY	H A CP	H A GL	H A ANY YY	SUMMARY
K	F			ROCK QUAL DESIG	FOR MEM AGE	EN V	RT Q	LC- COL	3		3	4	S O R	R D	H P C	/	SML	I	F									T 2	ID	STK AZM	DIP RT	KF	MU	CL H A	EP H A	HE H A	HA H A	PR H A	MO H A	SL H A	HA H A	
L				45.0		IN		5A	FX2	VN																								<1								
R		57.90	104.40	Cb-spotted (amygdaloidal?) FXTR. Cb spots are rounded to																																						
R		57.90	104.40	flattened, avg:10mm in size to a max of 30mm. Py associated																																						
R		57.90	104.40	with carb veins but also disseminated. Rare xenolith of ARGL.																																						
R		57.90	104.40	Trace pale green fluoromica within amygdules. Broken core at																																						
R		57.90	104.40	lower contact.																																						
P		104.40	113.70	100.0		LXTF	FX	MS	LF3	FR	HL									P		FO	65												32			Y1		
L				60.0		PC		AG		CB2	GC	WF																						$1								
R		104.40	113.70	Weakly foliated XLTF; Fo varies from 65 to 85 degrees to CA.																																						
R		104.40	113.70	Lithic frags 10mm to 50 MaxP and elongated. Py as lapilli and																																						
R		104.40	113.70	disseminated. Fx partially to wholy replaced by Cb. Upper																																						
R		104.40	113.70	1.5m of interval is argillaceous.																																						
P		113.70	126.30	90.0		APTR	CL	FX	CB2	SA	ST									P			V=												32			D.		
L				65.0		IN		AT	QZ=																									<+								
R		113.70	126.30	Weakly carb spotted APTR. Carb spots rounded, 2mm to 5mm, make																																						
R		113.70	126.30	up about 1% of rock volume.																																						
P		126.30	129.80			TFBR	LF	FX	MS2	BX	PS									P																31			D.		
L						PC			GR1	SC																								$2								
R		126.30	129.80	Argillaceous and graphitic TFBR. LF are subangular, vague and																																						
R		126.30	129.80	5 to 30mm in size. Lower contact sharp at 65 degrees to CA.																																						
P		129.80	176.50	95.0		LATF	PY	LF	MS2	FG	FR		L	2	O				P		FO	50												32			Y=		
L				90.0		PC		5A	CB2	HL	FO		E	O																				$2	D.							
R		129.80	176.50	Mixed ASHT and LATF, minor pyrite-lapilli. Foliation prominent																																						
R		129.80	176.50	only within LATF. Lower contact gradational.																																						
P		176.50	214.30	90.0		FXTR	MS	CL	CB2	SA	ST									P			V)												02					
L				75.0		IN		AT	FX2	BX	GG																							$)	<)							
R		176.50	214.30	Very broken mixed FXTR and APTR. FXTR is spotted with carb																																						
R		176.50	214.30	amygdules (?) which are rounded and total 15% rock vol. Spots																																						
R		176.50	214.30	are 3 to 10mm in size. Lower contact is bx over 2.5m with																																						
R		176.50	214.30	Ms+Cl in bx + qz veining.																																						
P		214.30	218.50	95.0		TFBR	CB	CL	LF2	FR	HL		M	2	N				P																#2			Y=		
L				65.0				AG	MS2	PS	BX		S	O																				#2	J1							
R		214.30	218.50	Strongly Cb+Ms altered TFBR. Py as frags with trace																																						
R		214.30	218.50	disseminated. Matrix is Ms+Cb also partially replace lithic																																						
R		214.30	218.50	frags which are vague and fuzzy. More distinct ARGL frags.																																						
R		214.30	218.50	Lower contact sharp @65deg with 3cm gouge.																																						
P		218.50	221.40	100.0		LATF	CB	LF	VA7	FG	WF		K	1	L				P		FO	45	V.												P1			D.		

ATNA RESOURCES LTD.
FOX

DRILLHOLE/TRAVERSE : DDHFX98_04 (CONTINUED)

KEY	FLAG	FROM - INTERVAL (UNITS = FT)	TO	CORE RECOVERY (%)	%IMX	ROCK TYPE	TYPIFYING TM 1	TYPIFYING TM 2	QAL MIN MAT QM1	TEXTURES TX 1	TEXTURES TX 2	GRAIN CHARACS F	C	%	M	FRACTURE P	#	TK	STRUCTUR-1 T	ID	STK AZM	DIP RT	ALTERATION MINS H A QZ	H A BI	H A CY	H A CB	H A MG	H ANY A MIN XX	ORE-TYPE MINS H A PY	H A CP	H ANY A MIN GL	YY	SUMMARY
K	F			ROCK	FOR	EN	RT		TM	QM2	TX	TX	S	R	S	O	DIP	F	T	ID	STK	DIP	KF	MU	CL	EP	HE	HA	PR	MO	SL	HA	
E	L			QUAL	MEM	V	Q	LC-	3		3	4	O	N	H	/	SML	I	2		AZM	RT			H	H	H	H	H	H	H	H	
Y	G			DESIG	AGE			COL					R	D	P	C					STRUCTUR-2				A	A	A	A	A	A	A	A	
L					95.0		PC	5A		MS1					F	O								$1								D.	
R		218.50	221.40																														
R		218.50	221.40																														
R		218.50	221.40																														
R		218.50	221.40																														
R		218.50	221.40																														
P		221.40	224.60		100.0			ARGL	FX	GR	VA2	FG	PP				P										3)		J1				
L					95.0		PC	1A		PY1														J=									
R		221.40	224.60																														
R		221.40	224.60																														
R		221.40	224.60																														
P		224.60	229.40		100.0			XATF	PY	CB	VA6	FG	BX				P										3=		V=				
L					80.0		PC	7A		FX2														<+									
R		224.60	229.40																														
R		224.60	229.40																														
R		224.60	229.40																														
R		224.60	229.40																														
P		229.40	237.90		100.0			LATF	LF	CL	CB2	FR	HL		K	1	N		P		TL		50				P2		D+				
L					98.0		PC	AG		MS2	WF	BX			E	O								P2	J=							D.	
R		229.40	237.90																														
R		229.40	237.90																														
R		229.40	237.90																														
R		229.40	237.90																														
P		237.90	244.70					LLTF	MS	PY	LF3	FR	HL		M	3	P		P		TL		50				P2		Y=				
L								BF	AG		MS2	PS			S	O								P2									
R		237.90	244.70																														
R		237.90	244.70																														
R		237.90	244.70																														
R		237.90	244.70																														
R		237.90	244.70																														
P		244.70	259.10		95.0			BTBX	CL	PY	MS3	BX	FR		M	3	P		P			V=					32		D=				
L					85.0			TG		CB2	GG				A	C								P3	<1							D.	
R		244.70	259.10																														
R		244.70	259.10																														
R		244.70	259.10																														
R		244.70	259.10																														
R		244.70	259.10																														
R		244.70	259.10																														

P 221.40 224.60 100.0 ARGL FX GR VA2 FG PP P 3) J1
R 221.40 224.60 "Porphyritic"(Fx) ARGL. Still high volcanic ash component, mixed, intercalated and patchy. XATF mixing with mud? Py is interstitial and as irregular veinlets.

P 224.60 229.40 100.0 XATF PY CB VA6 FG BX P 3= V=
L 80.0 PC 7A FX2 <+
R 224.60 229.40 Fine grained XATF. Py associated with irregular Cb veins. Chlorite has micro-fracture fill. Lower part of interval becomes tan in colour due to Cb-Ms alteration (intense). NB: PMH thinks this is FXTR as part of SSU.

P 229.40 237.90 100.0 LATF LF CL CB2 FR HL K 1 N P TL 50 P2 D+
L 98.0 PC AG MS2 WF BX E O P2 J= D.
R 229.40 237.90 Strongly altered (Cb+Ms) LATF. LF very vague. Ms+Cb pervasive and fine-grained throughout matrix (as opposed to sheeting and spots). Top 25cm of interval is brecciated with Py (+Sp) veinlets. Lower contact gradational.

P 237.90 244.70 LLTF MS PY LF3 FR HL M 3 P P TL 50 P2 Y=
L BF AG MS2 PS S O P2
R 237.90 244.70 Strange unit, could be BARF. Appears to have some sort of tuffaceous layering or bedding. Heterolithic, not typical LLTF, more of a debris flow. Py as frags and trace dissem. Strong Cb+Ms alteration in both matrix and fragments. Lower contact gradational.

P 244.70 259.10 95.0 BTBX CL PY MS3 BX FR M 3 P P V= 32 D=
L 85.0 TG CB2 GG A C P3 <1 D.
R 244.70 259.10 The famous bathroom tile breccia. Correlates with unit in FX-03, however fragments are more vague and Ba is missing. 5% euhedral Fx disseminated throughout (porphyroblasts?). Frags are angular and resemble crackle breccia. Frags partially replaced by Cb+Ms but have dark rims, retrograde chlorite?. Interval is hard - quite silicified. Gouge from 256.0 to 258.6. This would be a candidate for the edge of an explosive

ATNA RESOURCES LTD.
FOX

DRILLHOLE/TRAVERSE : DDHFX98_04 (CONTINUED)

KEY	FLAG	- INTERVAL - (UNITS = FT) FROM - TO	CORE RECOVERY (%)	%MIX	ROCK TYPE	TYPIFYING TM 1	TYPIFYING TM 2	QAL MIN MAT QM1	QAL MIN MAT QM2	TEXTURES TX 1	TEXTURES TX 2	GRAIN CHARACS F C % M	FRACTURE	STRUCTUR-1 / STRUCTUR-2	ALTERATION MINS HA HA HA HA HA ANY MIN	ORE-TYPE MINS H A H A H A ANY MIN	SUMMARY
														T ID STK DIP	QZ BI CY CB MG XX	PY CP GL YY	
			ROCK QUAL DESIG	FOR MEM AGE	EN V	RT Q	LC-COL	3		3	4	S R S O N H D P C	DIP F SML I	1 AZM RT	KF MU CL EP HE HA	PR MO SL HA	
														2 AZM RT	H H H H H H	H H H H	
														STRUCTUR-2	A A A A A A	A A A A	
R		244.70 259.10		vent.													

APPENDIX IV

STATEMENT OF EXPENDITURES

ATNA RESOURCES LTD.

FOX PROPERTY, YUKON
EXPENDITURE SUMMARY, June to December 1998

Professional Fees & Wages			
Geologists		26,765.50	
Field Assistant		7,601.00	
Contractor		1,785.00	
Cook		5,836.00	
Assays/Geochemical Analyses		5,364.52	47,352.02
Drilling			59,084.10
Field Costs			
Bulk Fuel		1,684.87	
Camp expenses			
Accommodation	4,624.00		
Meals & Groceries	5,435.26		
Supplies	2,025.03	12,084.29	
Communications			
Courier & Shipping	1,399.04		
Telephone & Fax	1,644.19	3,043.23	
Equipment Rentals			
ATV	265.89		
Computer	144.00		
Miscellaneous	72.42		
Satellite Phone	376.01		
Surveying Equipment	530.07		
Vehicle	1,777.75		
VHF Radios	1,263.17	4,429.31	
Expediting Service		636.66	
Helicopters			
Charters	36,269.37		
Fixed Wings	114.00		
Fuel & Oils	6,140.43	42,523.80	
Miscellaneous		178.05	64,580.21
Geophysics			12,682.27
Maps, Photos, etc.			58.18
Supplies			1,432.16
Travel Expenses			
Accommodation		1,025.89	
Airfares		1,917.65	
Fuel		322.69	
Meals & Groceries		524.56	
Others		675.06	
Vehicle Rental		858.19	5,324.04
			190,512.98

APPENDIX V

GEOLOGIST'S CERTIFICATES

OF QUALIFICATIONS

CERTIFICATE OF QUALIFICATIONS

I, Peter M. Holbek with a business address of 1550 - 409 Granville Street, Vancouver, British Columbia, V6C 1T2, do hereby certify that:

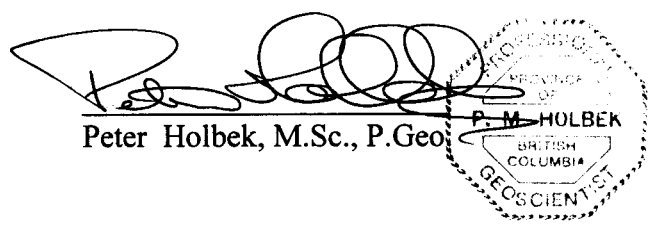
1. I am a professional geologist registered under the Professional Engineers and Geoscientists Act of the Province of British Columbia and a member in good standing with the Association of Professional Engineers and Geoscientists of British Columbia.

2. I am a graduate of The University of British Columbia with a B.Sc. in geology 1980 and an M.Sc. in geology, 1988.

3. I have practiced my profession continuously since 1980.

4. I am Vice President of Atna Resources having a business address as given above.

5. I supervised the work program conducted on the Fox Property as described in this report.



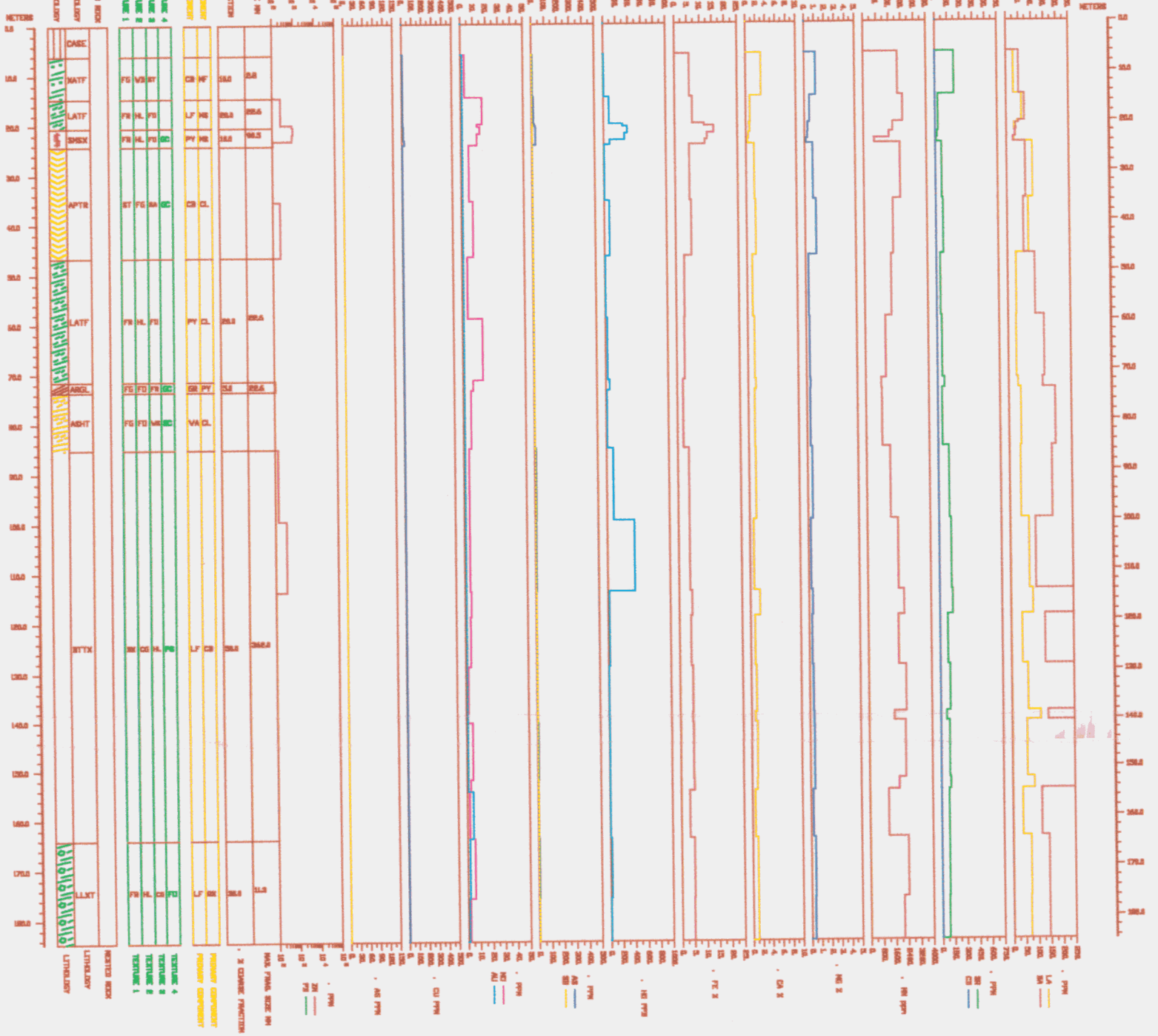
Peter Holbek, M.Sc., P.Geo

094034 (A)

FOX PROJECT

TRACE ELEMENT GEOCHEMISTRY

DRILL HOLE: DDHFX98_03

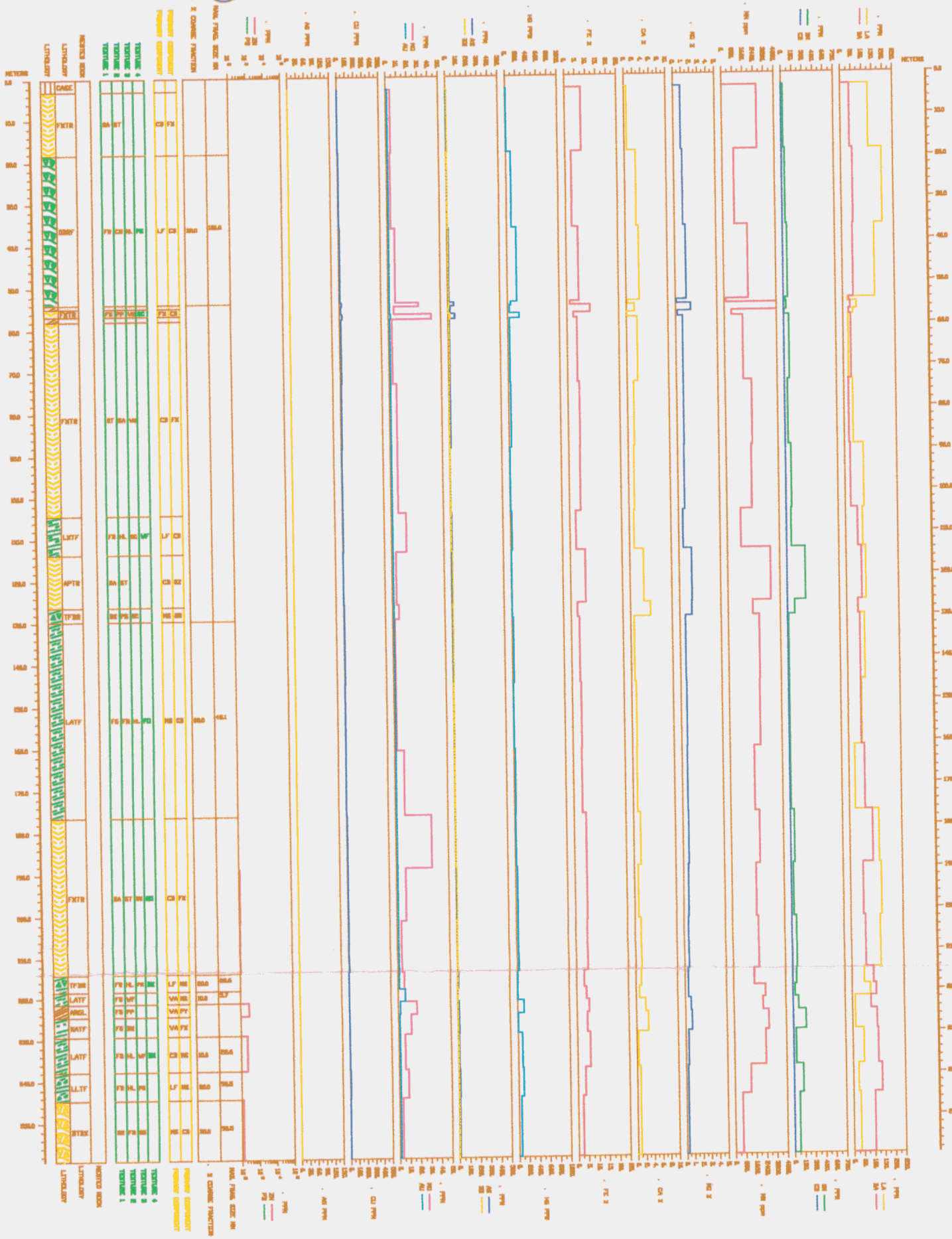


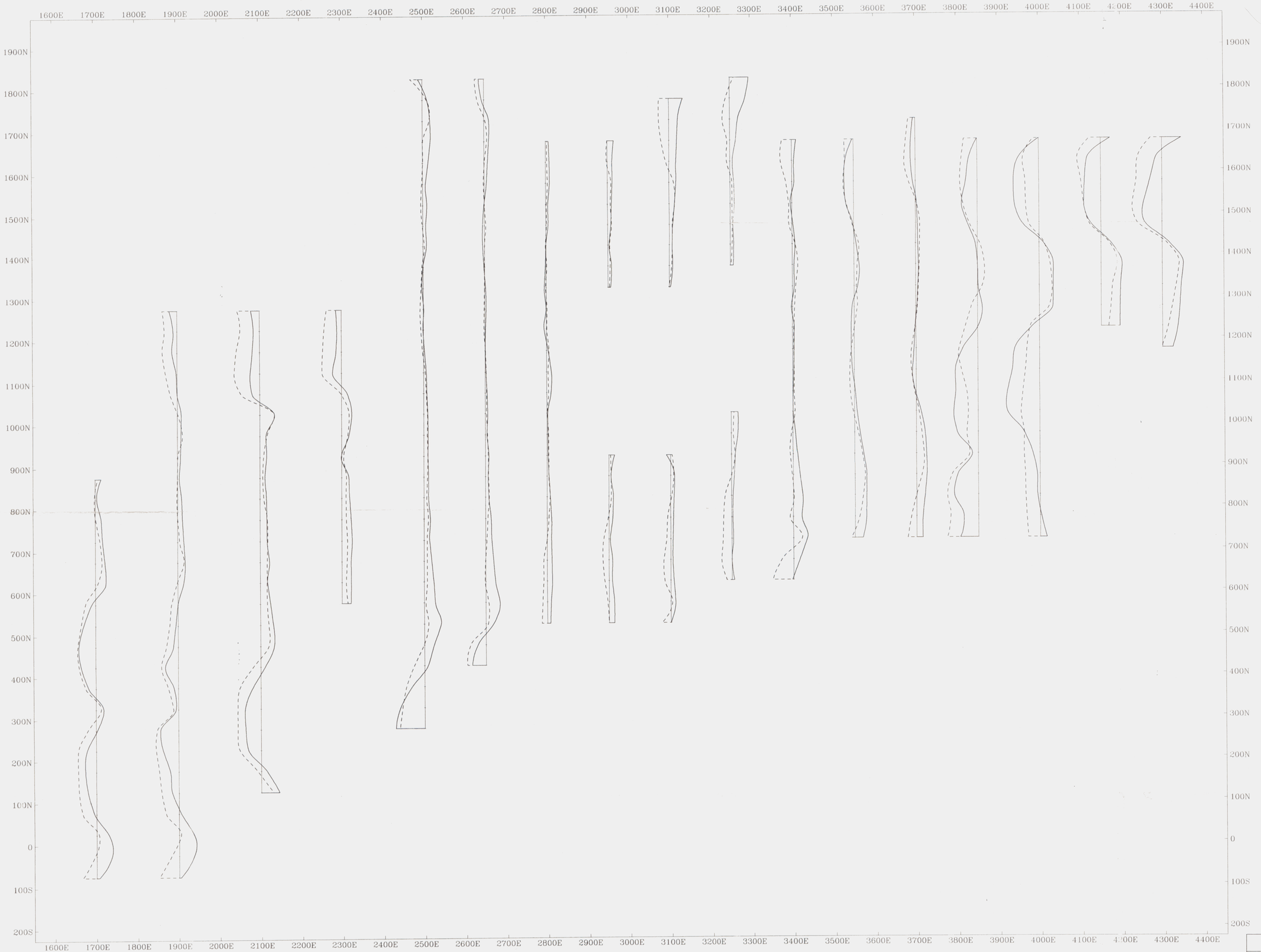
FOX PROJECT

TRACE ELEMENT GEOCHEMISTRY

DRILL HOLE: DDHFX98_04

094034 B





Scale 1:5000

100 0 100 200 300

(meters)

094034

DWG (11)

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FOX PROJECT

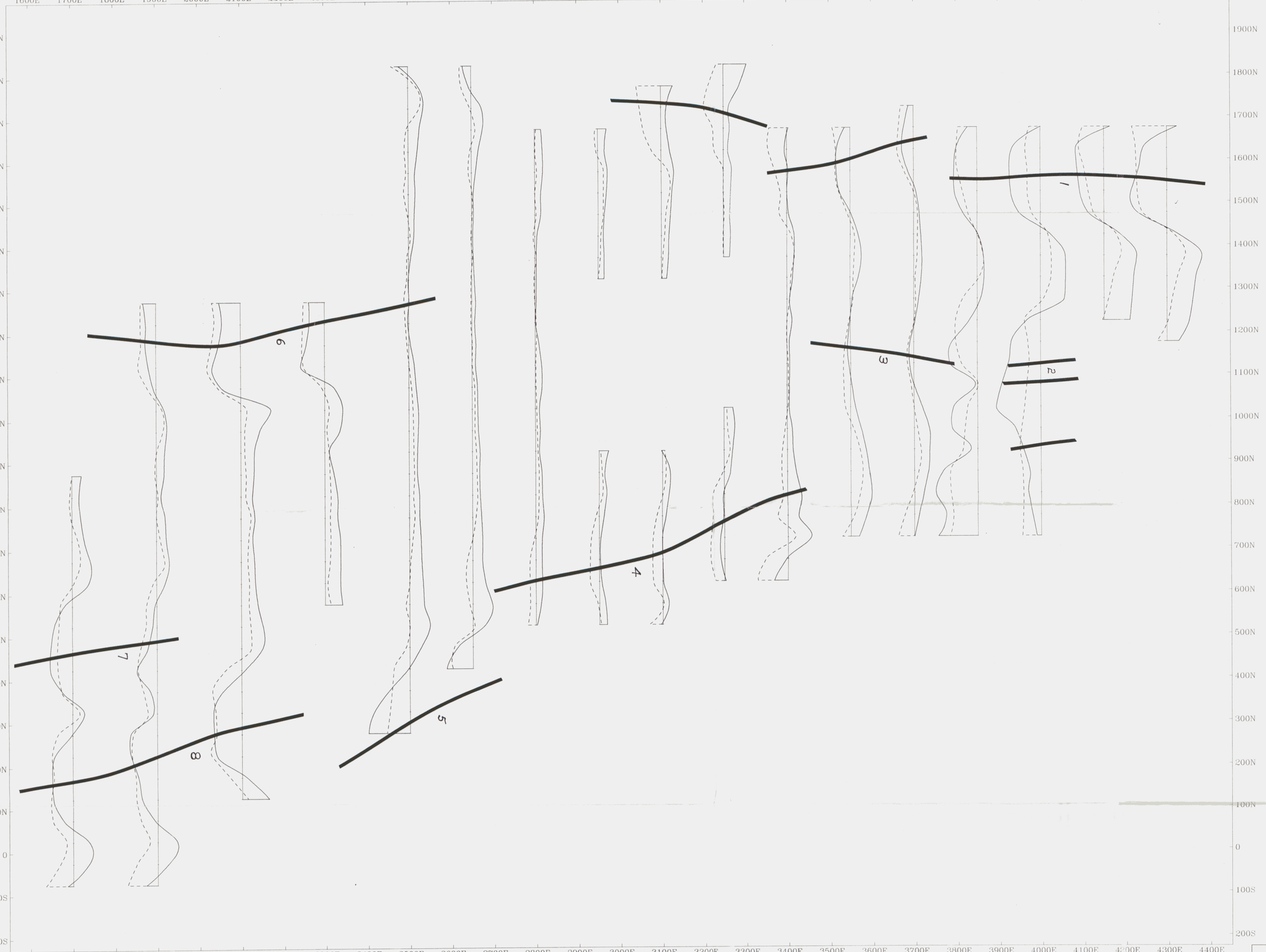
YUKON TERRITORY, CANADA

HORIZONTAL COPLANAR LOOP EM, FREQ. 220 Hz

In-phase solid, Quadrature dashed, 1cm=30%
Coil separation 250m + to right
Apex Parametrics Maxmin instrument 98 1-9
July, 1998

DELTA GEOSCIENCE LTD, *Fig #4.1*

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Scale 1:5000

100 0 100 200 300

(meters)

094034

Dwg 12

ATNA RESOURCES LTD.

FOX PROJECT

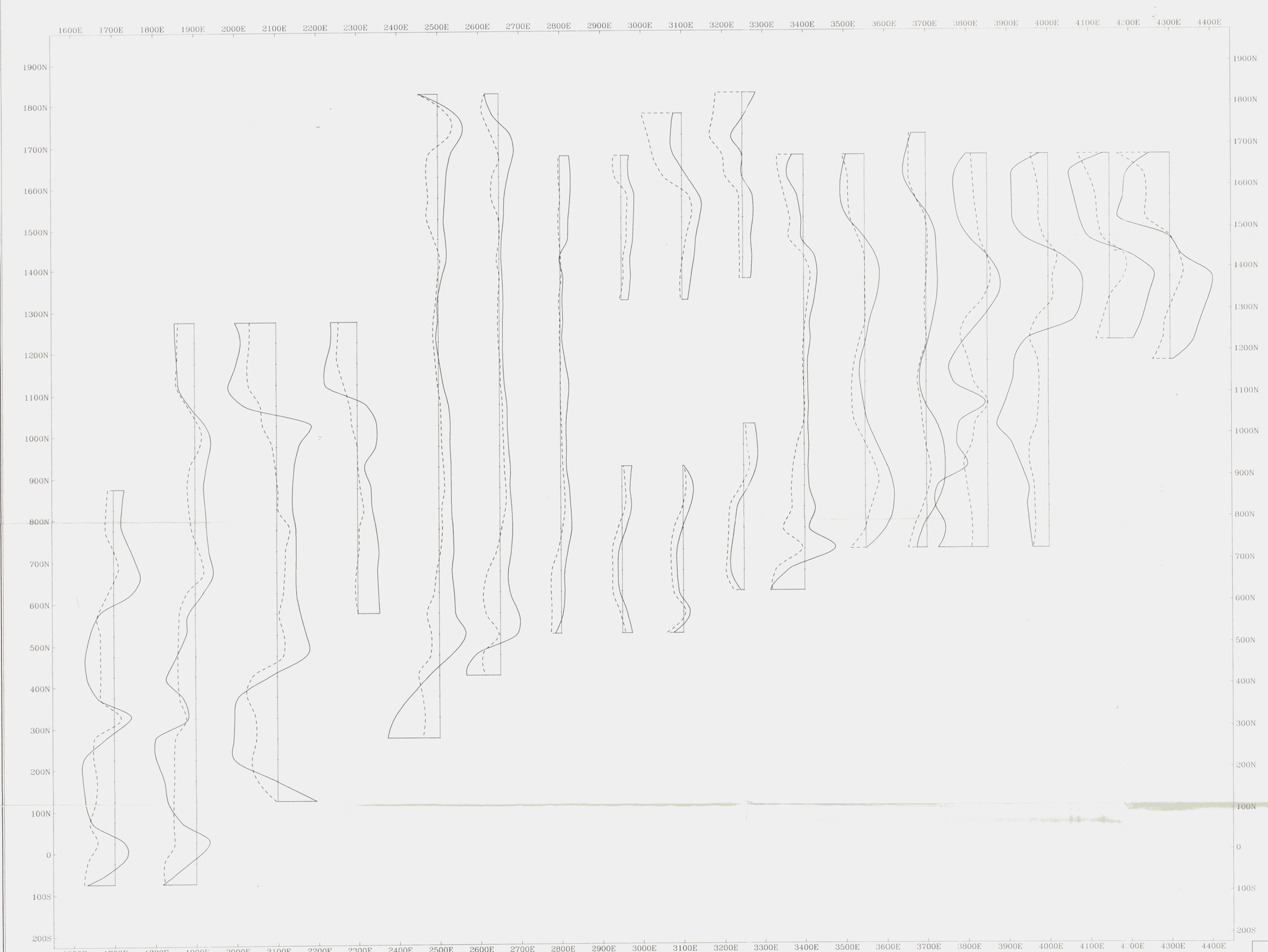
YUKON TERRITORY, CANADA

HORIZONTAL COPLANAR LOOP EM, FREQ. 440 Hz

In-phase solid, Quadrature dashed, 1cm=30%
Coil separation 250m + to right
Apex Parametrics Maxmin instrument 98 1-9
July, 1998

DELTA GEOSCIENCE LTD, *Fig #4.2*

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Scale 1:5000

100 0 100 200 300

(meters)

Dwg 13

094034

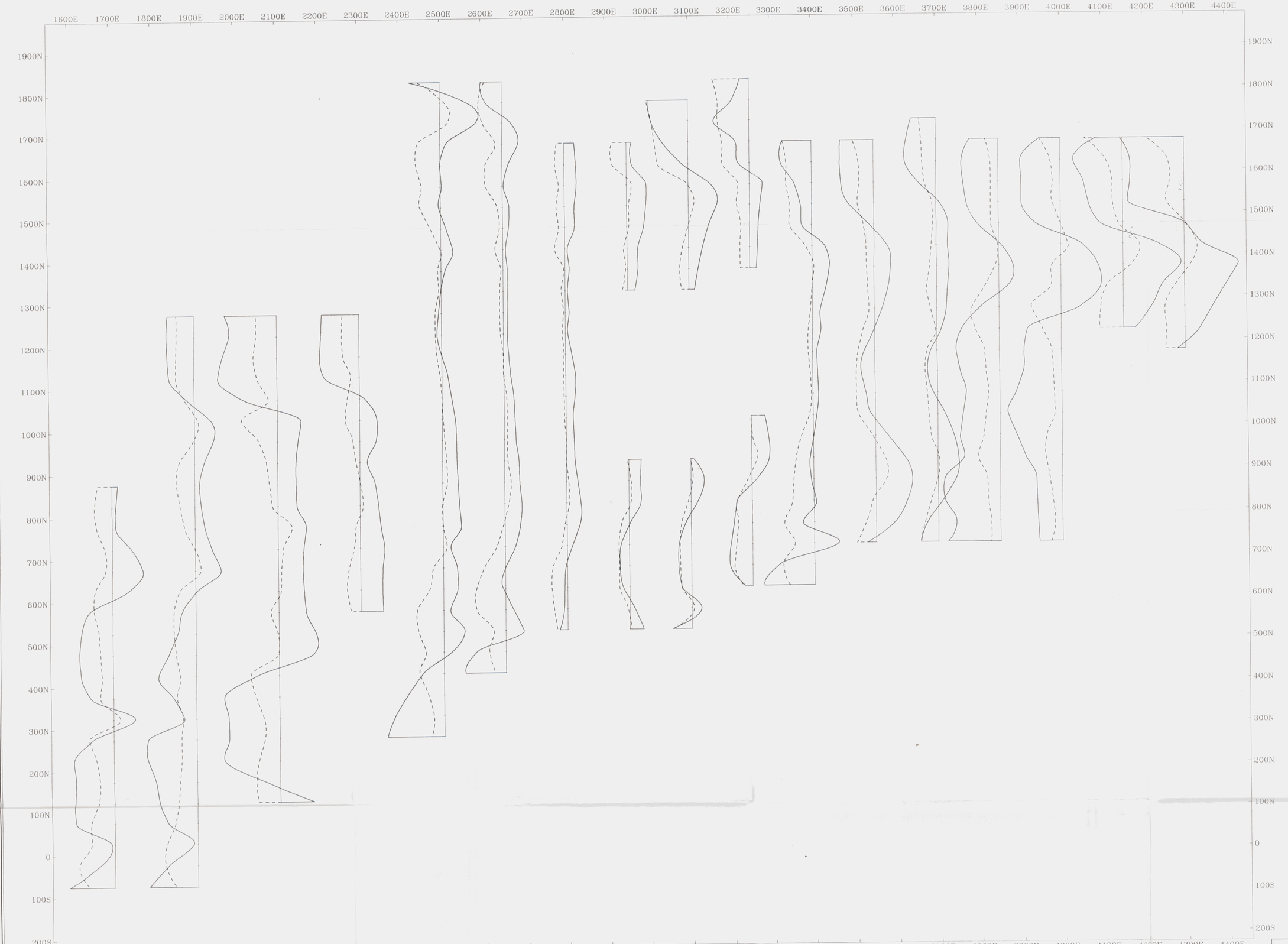
ATNA RESOURCES LTD.

FOX PROJECT
YUKON TERRITORY, CANADA
HORIZONTAL COPLANAR LOOP EM, FREQ. 880 Hz

In-phase solid, Quadrature dashed, 1cm=30%
Coil separation 250m + to right
Apex Parametrics Maxmin instrument 98 1-9
July, 1998

DELTA GEOSCIENCE LTD, *Fig #4.3*

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Scale 1:5000

100 0 100 200 300
(meters)

094034

Dwg (14)

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FOX PROJECT
YUKON TERRITORY, CANADA
HORIZONTAL COPLANAR LOOP EM, FREQ. 1760 Hz

In-phase solid, Quadrature dashed, 1cm=30%
Coil separation 250m + to right
Apex Parametrics Maxmin instrument 98 1-9
July, 1998

DELTA GEOSCIENCE LTD, *Fig #4.4*

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Scale 1:5000

100 0 100 200 300
(meters)

094034

Dwg (15)

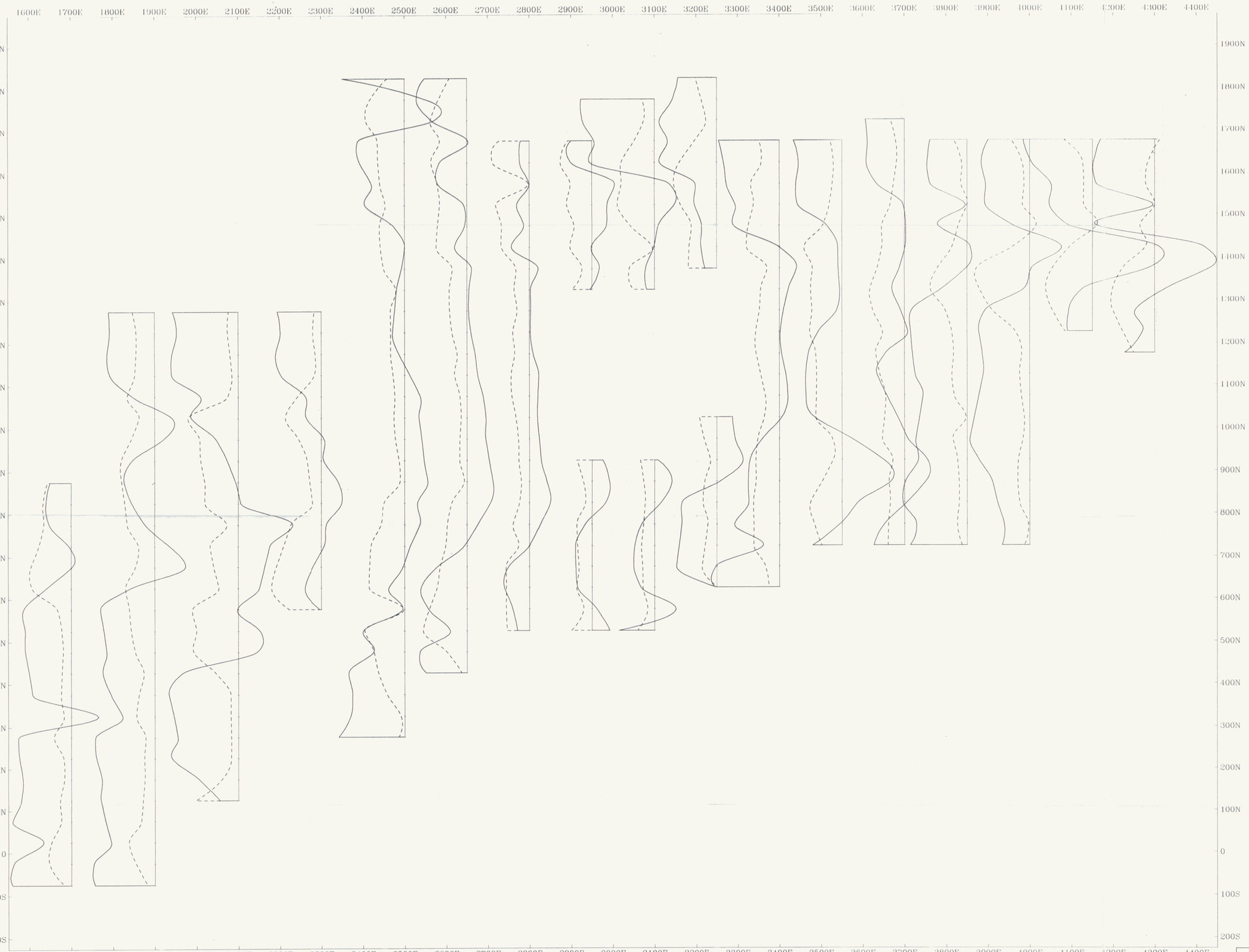
ATNA RESOURCES LTD.

FOX PROJECT
YUKON TERRITORY, CANADA
HORIZONTAL COPLANAR LOOP EM, FREQ. 3520 Hz

In-phase solid, Quadrature dashed, 1cm=30%
Coil separation 250m + to right
Apex Parametrics Maxmin instrument 98 1-9
July, 1998

DELTA GEOSCIENCE LTD, *Fig #4.5*

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Scale 1:5000

100 0 100 200 300
(meters)

094034

Dwg (16)

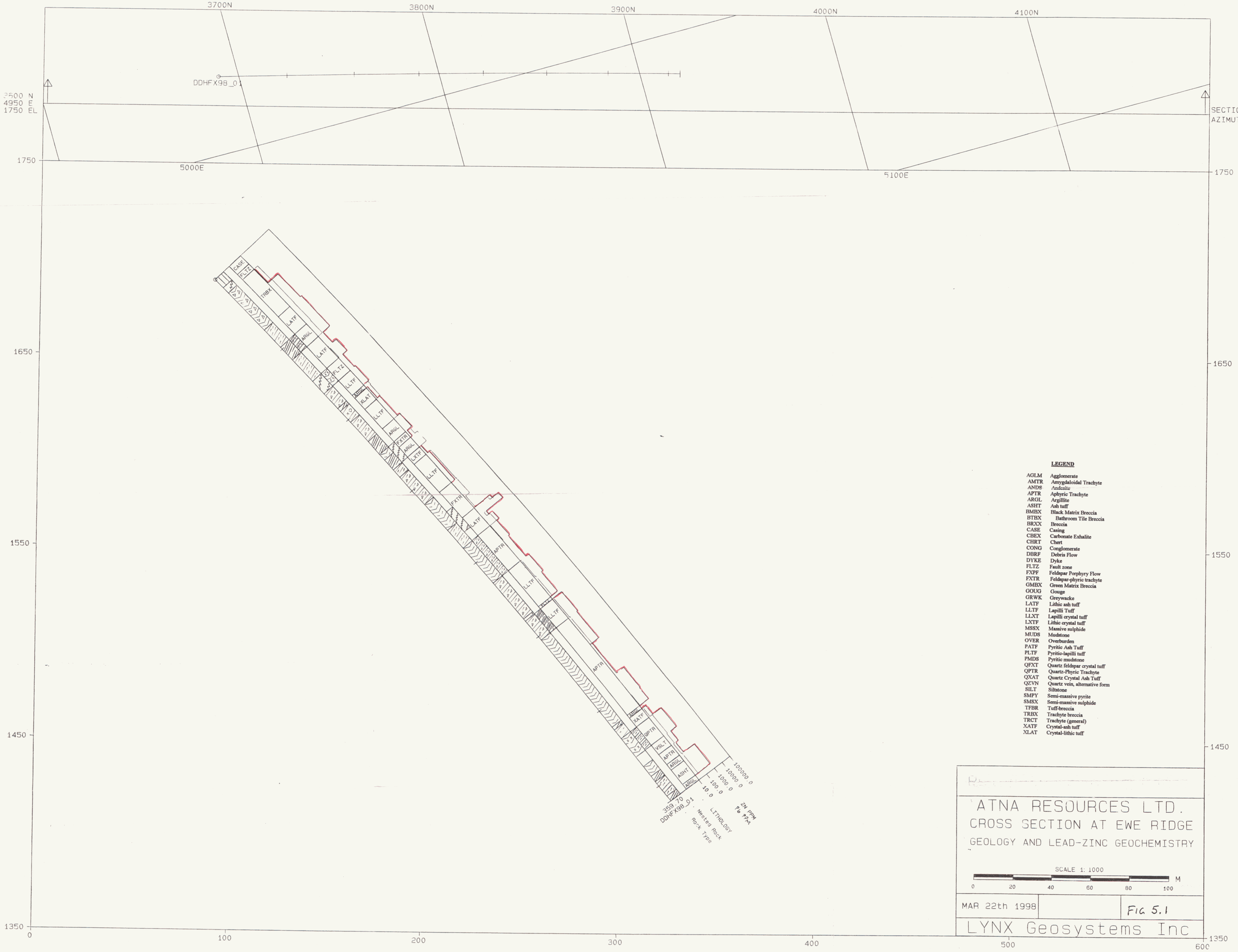
ATNA RESOURCES LTD.

FOX PROJECT
YUKON TERRITORY, CANADA
HORIZONTAL COPLANAR LOOP EM, FREQ. 7040 Hz

In-phase solid, Quadrature dashed, 1cm=30%
Coil separation 250m + to right
Apex Parametrics Maxmin instrument 98 1-9
July, 1998

DELTA GEOSCIENCE LTD, *Fig #4.6*

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LEGEND

AGLM	Agglomerate
AMTR	Amygdaloidal Trachyte
ANDS	Andesite
APTR	Aphyric Trachyte
ARGL	Argillite
ASHT	Ash tuff
BMBX	Black Matrix Breccia
BTBX	Bathroom Tile Breccia
BRXX	Breccia
CASE	Casing
CBEX	Carbonate Exhalite
CHRT	Chert
CONG	Conglomerate
DBRF	Debris Flow
DYKE	Dyke
FLTZ	Fault zone
FXPF	Feldspar Porphyry Flow
FXTR	Feldspar-phyric trachyte
GMBX	Green Matrix Breccia
GOUG	Gouge
GRWK	Greywacke
LATF	Lithic ash tuff
LLTF	Lapilli Tuff
LLXT	Lapilli crystal tuff
LXTF	Lithic crystal tuff
MSSX	Massive sulphide
MUDS	Mudstone
OVER	Overburden
PATF	Pyritic Ash Tuff
PLTF	Pyritic-lapilli tuff
PMDS	Pyritic mudstone
QFXT	Quartz feldspar crystal tuff
QPTR	Quartz-Phyric Trachyte
QXAT	Quartz Crystal Ash Tuff
QZVN	Quartz vein, alternative form
SILT	Siltstone
SMPY	Semi-massive pyrite
SMSX	Semi-massive sulphide
TFBR	Tuff-breccia
TRBX	Trachyte breccia
TRCT	Trachyte (general)
XATF	Crystal-ash tuff
XLAT	Crystal-lithic tuff

ATNA RESOURCES LTD.

CROSS SECTION AT EWE RIDGE

GEOLOGY AND LEAD-ZINC GEOCHEMISTRY

SCALE 1: 1000

0 20 40 60 80 100 M

MAR 22th 1998 | Fig 5.1

LYNX Geosystems Inc

094034 Dwg (17)

YUKON REGION, LIBRARY

4700N
4800N
4900N
5000N
5100N
DDHFX98_03
DDHFX98_02
DDHFX98_04
4625 N
3575 E
1550 EL
SECTION PLANE
AZIMUTH = 45°
1550
3700E
3800E
3900E
4000E
4100E
1450
1350
1250
1150
0
100
200
300
400
500
600
700
CASE
FXTR
DBRF
ASHT
APTR
LATF
SMSX
XT
AMTR
XATF
BRXX
AGLM
MATF
LLTF
LLXT
LXTF
PATF
PLTF
PMDS
QFXT
QPTR
QXAT
QZVN
SILT
SMPY
TFBR
TRBX
TRCT
ARGL
100000.0
10000.0
1000.0
100.0
10.0
ZN PPM
PB PPM
LITHOLOGY
Rock Type
Nested Rock
1474.70
DDHFX98_03
2539.10
DDHFX98_04
1435.02
DDHFX98_02

LEGEND

AGLM	Agglomerate
AMTR	Amygdaloidal Trachyte
ANDS	Andesite
APTR	APHYRIC TRACHYTE
ARGL	Argillite
ASHT	Ash tuff
BMBX	Black Matrix Breccia
BRXX	Breccia
CASE	Casing
CBEX	Carbonate Exhalite
CHRT	Chert
CONG	Conglomerate
DBRF	Debris Flow
DYKE	Dyke
FLTZ	Fault zone
FXPF	Feldspar Porphyry Flow
FXTR	Feldspar-phyric trachyte
GMBX	Green Matrix Breccia
GOUG	Gouge
GRWK	Greywacke
LATF	Lithic ash tuff
LLTF	Lapilli Tuff
LLXT	Lapilli crystal tuff
LXTF	Lithic crystal tuff
MSSX	Massive sulphide
MUDS	Mudstone
OVER	Overburden
PATF	Pyritic Ash Tuff
PLTF	Pyritic-lapilli tuff
PMDS	Pyritic mudstone
QFXT	Quartz feldspar crystal tuff
QPTR	Quartz-Phyric Trachyte
QXAT	Quartz Crystal Ash Tuff
QZVN	Quartz vein, alternative form
SILT	Siltstone
SMPY	Semi-massive pyrite
SMSX	Semi-massive sulphide
TFBR	Tuff-breccia
TRBX	Trachyte breccia
TRCT	Trachyte (general)
XATF	Crystal-ash tuff
XLAT	Crystal-lithic tuff

ATNA RESOURCES LTD.

CROSS SECTION AT FOX CREEK
GEOLOGY AND LEAD-ZINC GEOCHEMISTRY

SCALE 1:1000
0 20 40 60 80 100 M

MAR 22th 1998

Fig. 5.2

LYNX Geosystems Inc

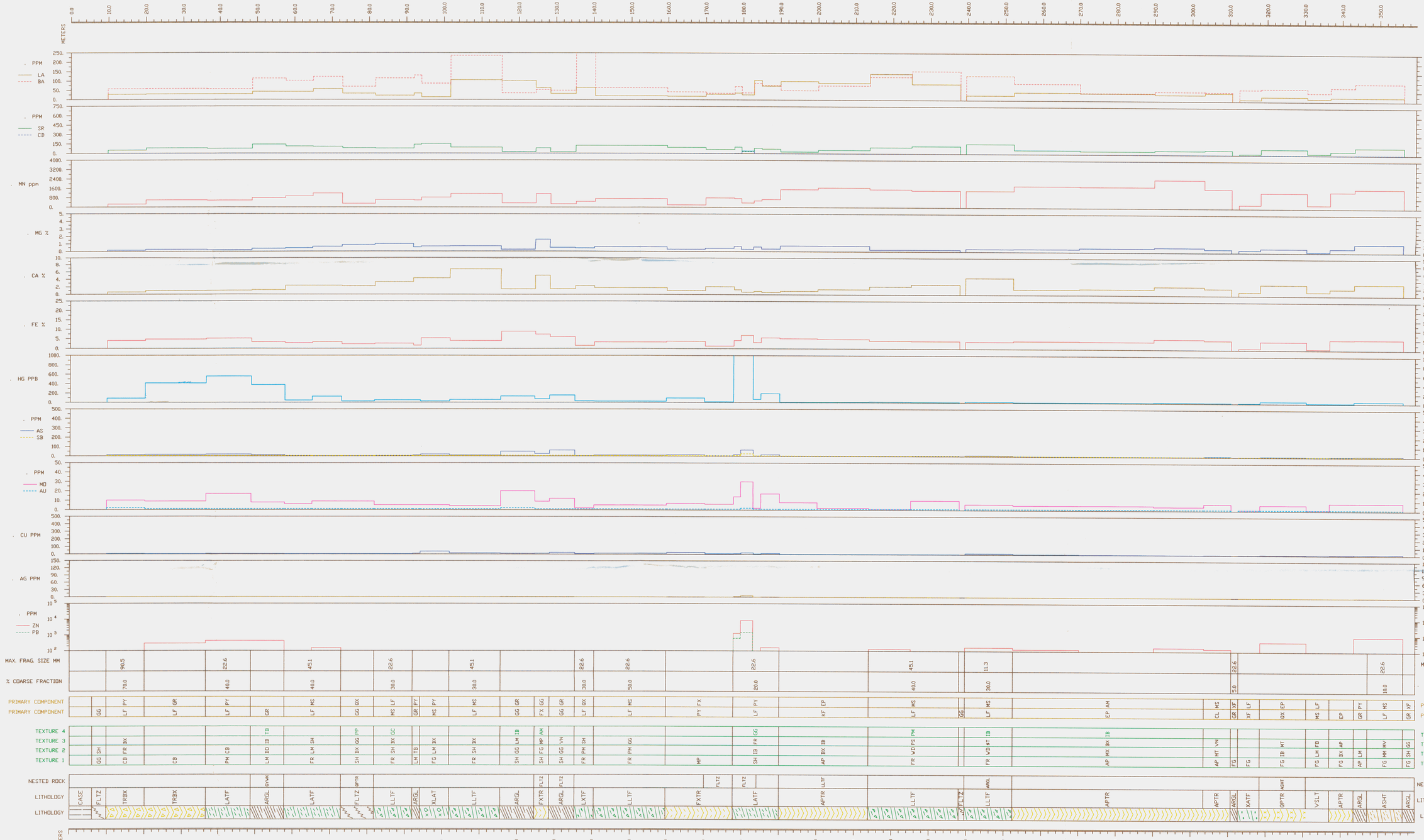
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TRACE ELEMENT GEOCHEMISTRY

DRILL HOLE: DDHFX98_01

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FOX PROJECT
TRACE ELEMENT GEOCHEMISTRY
DRILL HOLE: DDHFX98_02

DIAND - YUKON REGION

094034

METERS 0.0 10.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0 100.0 110.0 120.0 130.0 140.0

. PPM — LA, BA — 0. 50. 100. 150. 200. 250.

. PPM — SR, CD — 0. 150. 300. 450. 600. 750.

. MN ppm — 0. 800. 1600. 2400. 3200. 4000.

. MG % — 0. 1. 2. 3. 4. 5.

. CA % — 0. 2. 4. 6. 8. 10.

. FE % — 0. 5. 10. 15. 20. 25.

. HG PPB — 0. 200. 400. 600. 800. 1000.

. PPM — AS, SB — 0. 100. 200. 300. 400. 500.

. PPM — MO, AU — 0. 10. 20. 30. 40. 50.

. CU PPM — 0. 100. 200. 300. 400. 500.

. AG PPM — 0. 30. 60. 90. 120. 150.

. PPM — ZN, PB — 10^2 10^3 10^4 10^5

MAX. FRAG. SIZE MM: 45.1 | 45.1 | 22.6 | 90.5

. % COARSE FRACTION: 30.0 | 40.0 | 70.0 | 50.0

PRIMARY COMPONENT: LF CB | FX AM | GG | FX PY | LF MS | GR LF | LF | PX FX | LF MS

TEXTURE 4: FR WD PM | MP FG WS | PP GG SM | FR PM GC | GC LM FR IB | FR CS PM | PP SE | FR PM PS CS

TEXTURE 3

TEXTURE 2

TEXTURE 1

NESTED ROCK LITHOLOGY: CASE | LLTF | FXTR | FXTR | FXTR | LLTF | ARGL | LLTF | PPTR | DBRF

METERS 0.0 10.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0 100.0 110.0 120.0 130.0 140.0