

2006 REPORT
FOR THE
FIRE(Chzerpnough), ICE(BNOB) and MELT Properties
PELLEY MOUNTAIN PROJECT

Watson Lake Mining Division, Southcentral Yukon Territory
Mapsheets 105-F-09,10
Latitude 61° 35' N, Longitude 132°29'W
NTS 6832001 N / 633500 E

Prepared for

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2006 GEOLOGICAL REPORT FOR THE FIRE-ICE-MELT PROPERTY
EAGLE PLAINS RESOURCES LTD.

SUMMARY

The FIRE (formerly the Chzerpnough), ICE (formerly the BNOB) and MELT properties consist of 204 units located in the McConnell / Ketza River area of the Yukon Territories, approximately 40 km south of Ross River in the Watson Lake Mining district. The claims are centered at Latitude 61° 35' N, Longitude 132°29'W; NTS 6832001 N / 633500 E. The claims are owned 100% by Eagle Plains Resources Ltd.

The claims overlie Mississippian aged intermediate to felsic volcanic rocks and similar aged sediments of the Pelly Mountain Volcanic Belt. The stratigraphy includes pyritic trachyte, pyritic lapilli tuffs, crystal tuffs, and volcanoclastic debris flows and is thought to be correlative to the host stratigraphy at the nearby Wolf and MM VMS exhalative type base metal deposits. Historical geological fieldwork on the properties by Atna Resources, Cyprus Anvil and others identified favorable stratigraphy and mineralization associated with Volcanogenic Massive Sulphide (VMS) deposits including extensive barium – mercury – lead – zinc - silver soil geochemical anomalies and barite – sphalerite – galena - pyrite mineralization within a pyrite altered felsic volcanic package. In 2000 Eagle Plains Resources carried out geological mapping followed by a 616 meter / 2021 foot diamond drilling program that targeted VMS style mineralization. VMS exhalative type base metal mineralization was intersected on both the FIRE and ICE properties at drill locations approximately 7km apart. Subsequent to the 2000 drill program, Eagle Plains Resources undertook an aggressive staking program to establish contiguous claims between the FIRE and ICE properties and also to stake targets generated by regional reconnaissance and research. 2001 work focused on geological mapping and extensive silt and soil geochemical sampling and prospecting. The program was very successful, with the identification of several areas underlain by favorable stratigraphy (submarine volcanism, intensely altered felsic volcanics and locally associated fine-grained clastic sedimentary rocks that would be conducive to preservation of sulphides deposited on the sea floor) which also have strongly anomalous VMS-type geochemical signatures. Eagle Plains Resources staked a further 65 Quartz claims contiguous with the established property boundary to cover prospective stratigraphy in the area.

In 2006, Eagle Plains commissioned an airborne geophysical survey over the project area. 368 line kilometers of helicopter borne time domain geophysics was flown over the western part of the project in the area of the McConnell River by GeoTech Limited. The survey was followed up by a one day site visit including geochemical sampling and minor small scale mapping. Total expenditures on the project were \$157,636.73

Respectfully submitted:

Charles C. Downie, P. Geo
VP Exploration , Eagle Plains Resources

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Geological Report For The Fire - Ice - Melt Project

McConnell River area, Central Yukon

LOCATION AND ACCESS

The FIRE (Chzerpnough), ICE (BNOB) and MELT properties are located in the south-central Yukon Territory between the Ketza River and McConnell River drainages, centered at approximately Latitude 61° 35' N, Longitude 132°29'W; NTS 6832001 N / 633500 E (Figure 1). Access to the property is by helicopter, with the nearest base in Ross River approximately 35 km north of the property boundary. Gear and personnel mobilization can be carried out from the Ketza River Mine road located approximately 15 km east of the property boundary. There is also an established exploration trail located west of the ICE / BNOB showing area which could provide access from the Seagull Lake – Ground Hog Creek area. The claims cover alpine to subalpine terrain within the St. Cyr Range of the Pelly Mountains. Elevations on the claims range from 1150 to 2001 meters, with topography ranging from moderate to very steep. Outcrop exposure is 10 – 20 % with a thin veneer of colluvium or talus typically developed.

TENURE

The property consists of 204 Quartz claims (Table 1; Figure 2), located on the Cloutier Creek and Pass Peak Map sheets within the Watson Lake Mining District. The MELT claim block and the contiguous FIRE/ICE claim block are separated by the northeast branch of the McConnell River. The claims are owned 100% by Eagle Plains Resources Ltd., with an underlying 1% NSR carried by Bernie Kreft of Whitehorse, Yukon.

Table 1 – Fire – Ice – Melt Tenure Summary

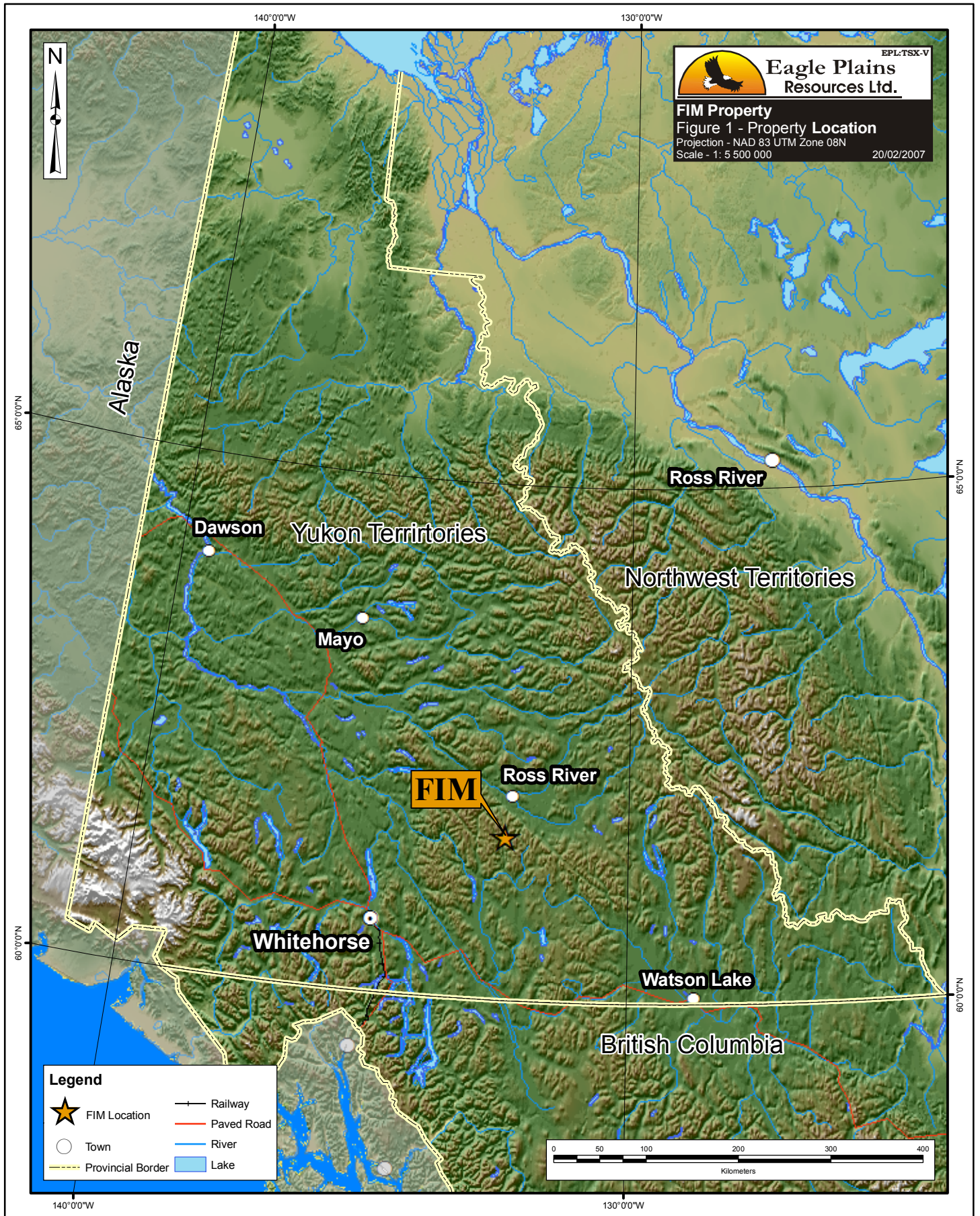
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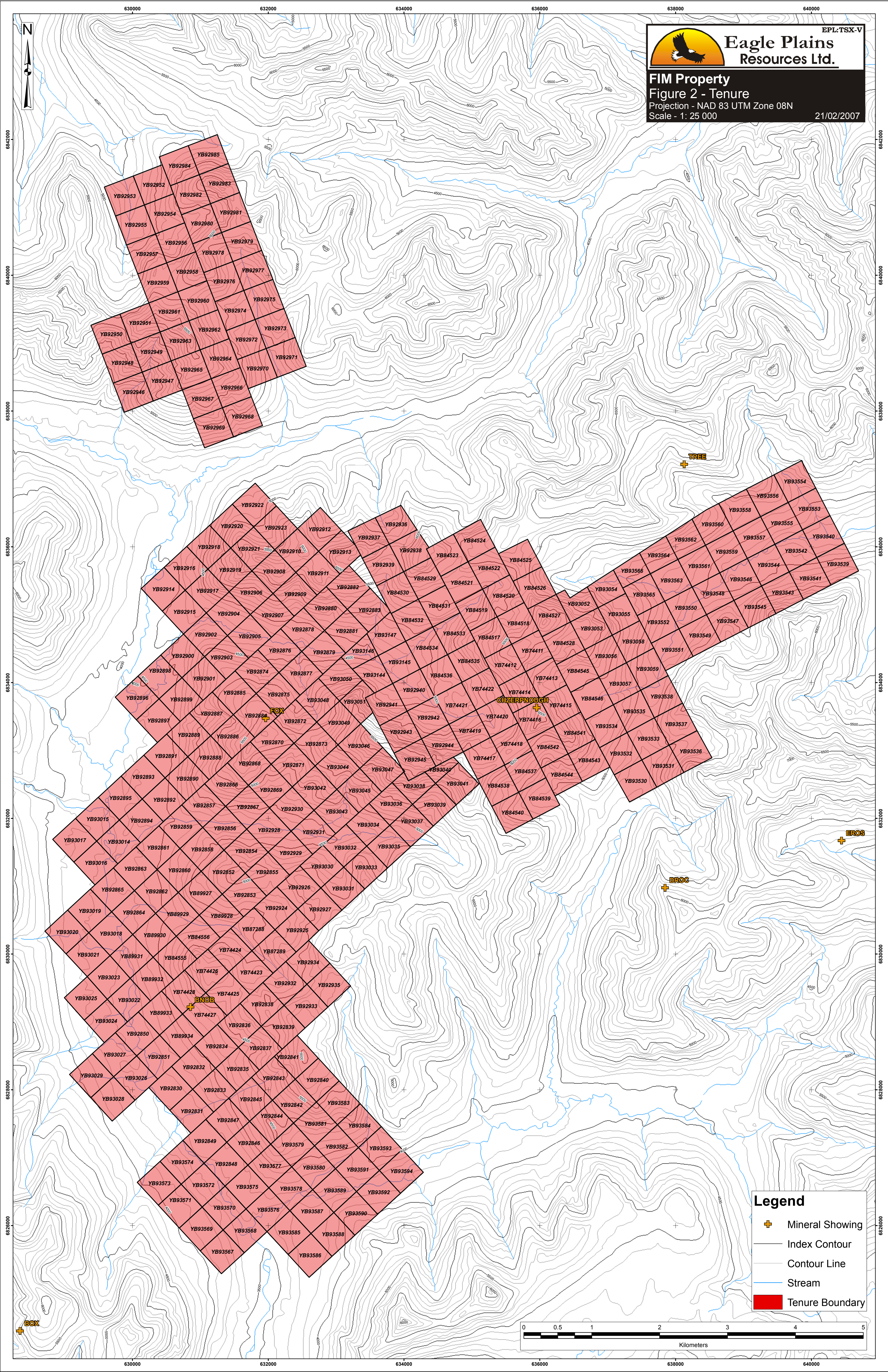
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YB93029	SALT	16	14/09/2007	4	14/09/2011	105F10







EPL:TSX-V

**Eagle Plains
Resources Ltd.**

FIM Property
Figure 2 - Tenure
Projection - NAD 83 UTM Zone 08N
Scale - 1: 25 000

21/02/2007

Legend

 Mineral Showing

 Index Contour

 Contour Line

 Stream

 Tenure Boundary

HISTORY AND PREVIOUS WORK

The MELT property area was staked by Utah Mines Ltd. as the Ram Claim Group. In 1977 Utah Mines carried out prospecting, geological mapping, and reconnaissance soil and silt sampling and rock chip geochemical sampling. The south edge of the Melt property was staked and worked by Fairfield Minerals as part of the Ram Group in the mid 1980's. In 2000 the MELT claim area was covered by Bernie Kreft as part of the Pelly Mountain Reconnaissance program. Encouraging results from this and other programs carried out by Eagle Plains Resources in the area led to the staking of the MELT claims.

The FIRE and ICE showing areas are located approximately seven kilometers apart and have been worked in the past as separate properties. The original FIRE 1 – 12 claims were staked by Bernie Kreft of Whitehorse, YT, in 1996 on behalf of Eagle Plains Resources. The twelve contiguous claims were staked to cover a soil geochemical anomaly, a geophysical (magnetic and I.P.) target, and associated mineralized outcrops which were thought to represent a positive exploration environment for volcanogenic massive sulphide (VMS) mineralization.

The exploration target was originally recognized during an exploration program carried out by Cyprus-Anvil Mining Corporation in 1977 that worked the area as the Chzernpough Claims. A soil geochemical survey conducted in 1977, using a chained and picketed grid, outlined soil anomalies that were interpreted as being (potentially) more extensive than would be expected from the mineralization observed in outcrop. Ground based magnetic and IP geophysical surveys conducted by Cyprus-Anvil revealed a small conductive target associated with a magnetic anomaly, coincident with both a large Zn-Pb soil geochemical anomaly and a sedimentary barite horizon outlined by previous workers.

After staking the FIRE claims in 1996, Eagle Plains Resources undertook a reconnaissance geological exploration program consisting of geological mapping, minor hand trenching, and sampling. The work program was designed to test the mineral potential of the property through following up on anomalous results from previous soil geochemical surveys and a previous geological mapping and sampling program. The program was conducted under the direction of John Dickie, M.Sc. The program identified many features associated with VMS type deposits including vent-proximal felsic volcanic stratigraphy, represented by lapilli-boulder tuff and clastic debris shed from a volcanic edifice, and a strong geochemical trend in talus fines, reflected by large anomalies with highly anomalous zinc, lead, silver and copper values.

Anomalous fluorine, occurring as purple fluorite, was found associated with the vent-proximal stratigraphy. Since high fluorine values are commonly associated with lead-zinc mineralization in other volcanogenic massive sulphide deposits, fluorite is regarded as a positive exploration feature on the FIRE claims. The program also identified a distinct stratigraphic horizon mineralized with barite-sphalerite-galena and minor chalcopyrite that appeared to explain part of the soil anomaly. Selected rock samples returned up to 7.12% zinc, 7.82% lead, 72.9 gm/t silver and 1.063 gm/t gold. The sedimentary barite horizon containing sphalerite and galena could not be sampled due to extensive snow cover. The conclusions from the program were that mineralization appears to be stratiform and the strongest geochemical indications, from rock and talus fine sampling, are that the target horizon lies along the northwest edge of the property. As part of the 1996 program, additional contiguous claims (CHAR 1 – 30) were staked to cover prospective VMS stratigraphy to the northwest. Additional work was recommended for the FIRE 1-12 and CHAR 1-30 claims in order to further test the extent of known mineralization.

In 1997, Eagle Plains Resources continued geological work on the FIRE and CHAR claims with a program of hand trenching, geological mapping and rock sampling. The purpose of the work was to locate and assess a barite float train reported to occur on the property. The program successfully identified the barite float train without finding the source. Samples of barite float returned values of up to 56.1 gm/t Ag, 5760 ppm Pb and 812 ppm Zn. The program also located a heavily pyritized, flow banded rhyolite which returned values of up to 2280 ppm Pb and 1709 ppm Zn. Again, more work was recommended.

Eagle Plains Resources optioned the FIRE / CHAR claims to Atna Resources Ltd in October 1997 after Atna's discovery of VMS mineralization at the Wolf property in the Finlayson Lake area. In 1998 Atna carried out geological mapping, soil and rock geochemistry, and airborne and ground geophysical surveys. The program was very successful. Geological mapping confirmed the presence of a widespread package of silica and sericite altered intermediate to felsic volcanic and volcanoclastic rocks containing pyrite, barite, and galena. Associated with these rocks were a number of coincident barium – mercury – lead – zinc soil geochemical anomalies. Both the ground based MaxMin horizontal loop EM survey and the airborne EM – VLF surveys located anomalies consistent with that associated with the Wolf deposit mineralization. Although Atna recommended further work on the property including diamond drilling, the option agreement was terminated in 1999 and the property was returned to Eagle Plains Resources.

The ICE property was originally staked in 1976 as the BNOB claims during a prospecting joint venture between Hudson's Bay Oil and Gas Company Limited and Cyprus Anvil Mining Corporation. The claims were staked to cover a surface showing of massive

sedimentary barite. Work completed from 1976 to 1980 by Cyprus Anvil included soil sampling, mapping, magnetometer and EM geophysical surveying. In 1980 a single drillhole was completed in an attempt to test for VMS style mineralization associated with the barite horizon of 1980. The hole failed to intersect barite or VMS mineralization and it was interpreted to have been collared below the barite horizon (Pigage, 1980). This interpretation is borne out by more recent work which indicates that the hole was collared in the stratigraphic footwall of the barite horizon.

The area was restaked in 1996 on behalf of Eagle Plains Resources Ltd as the ICE claims by Bernie Kreft of Whitehorse, Yukon. A program of limited geological mapping plus soil/talus geochemical sampling was completed along with prospecting during 1996. The grid geochemistry outlined an anomalous area of Zn/Pb geochemistry spatially associated with the trend of a bedded exhalative? barite showing. A new showing of barite with galena and sphalerite was also discovered and sampled. In 1997, Eagle Plains Resources continued geological assessment of the ICE claims for VMS style mineralization. Hand trenching and rock sampling in the areas of the barite showings was undertaken. Results confirmed the tenor and style of the mineralization as VMS type and further work was recommended.

Atna Resources Ltd. optioned the property in 1997 after discovering the Wolf massive sulphide deposit within similar rocks 60km southeast of the ICE claims. The 1998 Atna program included geological mapping, gridding, soil sampling and 5.6km of ground HLEM geophysical surveys. Soil geochemistry defined three zones of coincident anomalous lead and zinc corresponding to the BNOB, ICE 1 and GULLY Zone showing areas. Geological mapping of the BNOB showing area defined a NE trending NW dipping strataform barite body occurring within a pyrite-lapilli tuff and a pyritic trachyte. The HLEM survey located two weak conductors which were interpreted to be related to a black, graphitic argillite unit occurring in the area of the anomaly trace. Atna geologists concluded that the BNOB barite showing occurs in the correct stratigraphic position relative to the Wolf property to represent the same mineralized horizon. A single drillhole was recommended to test the BNOB stratigraphy but was not drilled. The property was returned to Eagle Plains Resources in 1999.

Eagle Plains Resources completed a two phase work program on the FIRE/ICE properties in 2000. The initial phase was completed in July 2000 and consisted of geological mapping and ground truthing of past work. Field crews were stationed in Ross River and mobilized to the properties using a Trans North Helicopters Bell 206. Field mapping carried out by C. J. Greig, PhD focused on areas of prospective VMS host stratigraphy identified in past work programs. Priority drill targets on both properties were identified. The second phase of the 2000 FIRE / ICE exploration work involved diamond drill testing of selected phase one targets. On the FIRE property, six holes were collared on two different sites, and a single hole was completed on the ICE property. A total of 616 m / 2021 feet was completed using a heliportable diamond drill.

VMS exhalative type base metal mineralization similar to the nearby Wolf and MM deposits was intersected on both the FIRE and ICE properties at drill locations approximately 7km apart. On the FIRE property one of the targets was a coincident lead-zinc soil geochemical anomaly associated with a well developed gossanous trachyte outcrop. A fan of holes from the second drillsite intersected strataform barite mineralization. The barite horizon is hosted within an argillaceous to muddy subunit of a thin bedded to thin laminated weakly sericitized volcanoclastic package. This is underlain in turn by a package of volcanic and volcanoclastic rocks including tuffs, crystal tuffs, lapilli tuffs, fragmentals, and multilithic breccias with local well developed silicification and pyritization, which is associated in part with anomalous metal values. The barite occurs in part as replacement and nodules within the muddy unit, and as a distinct massive to semi-massive strataform horizon. The best intersection was in DDHF00-02 which returned values of 22.39 gm/T Ag, 50 ppm Cu, 51 ppm Cd, 4930 ppm Pb, 6033 ppm Zn from 23.0 - 38.1m including 3.3m averaging 65.5 gm/T Ag, 109 ppm Cu, 162 ppm Cd, 4930 ppm Pb and 2.16% Zn.

A single drillhole was completed on the ICE property. DDH I00-01 targeted an outcrop of sucrosic bedded barite with sphalerite, pyrite and galena identified by Charlie Greig during 2000 fieldwork. The hole was collared in a blocky, strongly jointed syenite sill? unit which overlies a volcanic package that includes pyritic lapilli tuffs and multilithic breccias and debris flows. Within this volcanic package is a sequence of barite / pyrite / sphalerite mineralization thought to be of exhalative origin. The barite exhalative horizon is approximately 48 meters in thickness and consists of a 10 m thick massive to semi massive barite cap overlying a series of barite horizons associated with a pyritic lapilli tuff unit. The best interval within the barite cap zone was 33.2 – 36.3 meters which returned values of 11.4 gm/t Ag, 61 ppm Cu, 3180 ppm Pb and 1.1% Zn over 3.1meters true width. Field relationships and drilling results confirmed that the only other hole drilled on the ICE property to date was collared stratigraphically below the barite horizon.

Based on the preliminary results of the diamond drilling program, Eagle Plains Resources carried out an aggressive staking program in the McConnell River – Ketzia River area in the late summer of 2000. A further 212 claims were staked to cover prospective geology. Total 2000 exploration expenditures by Eagle Plains Resources was \$149,921.10. The 2000 work report by Eagle Plains Resources recognized the potential for VMS style deposits in the McConnell River area and further work was recommended.

The 2001 Eagle Plains Resources field program focused on geological mapping and extensive silt and soil geochemical sampling and prospecting. The program was very successful, with the identification of several areas underlain by favorable stratigraphy (submarine volcanism, intensely altered felsic volcanics and locally associated fine-grained clastic sedimentary rocks that would be conducive to preservation of sulphides deposited on the sea floor) which also have strongly anomalous VMS-type geochemical signatures. Eagle Plains Resources staked a further 65 Quartz claims contiguous with the established property boundary to cover prospective stratigraphy in the area. The total cost of the 2001 geological exploration work on the FIRE / ICE / MELT properties was \$118,269.18

EXPLORATION EXPENDITURES

Based on expenditures documented in exploration reports, expenditures on the FIM project by Eagle Plains Resources since property acquisition are approximately \$500,000.

GEOLOGICAL SETTING

Regional Geology

The volcano-sedimentary rocks which host the Wolf and MM deposits as well as the FIRE/ICE/MELT claims form a narrow arcuate belt that extends 80 kilometres along a northwesterly trend within the Pelly Mountains of the southwestern Yukon (Fig. 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 PMVB is early to middle Paleozoic in age and occurs within the Pelly-Cassiar Platform, considered to be part of ancestral North America (Templeman-Kluit, 1977). The tectonic framework for the Pelly Mountains area is described by Gabrielse and Yorath (1991), Templeman-Kluit and Blusson, (1977) and Gordey (1977) and is summarized below.

The miogeoclinal sequence and related rocks which underlie much of the Pelly Mountains are part of a large area about 70km wide and 600km long that is referred to as the Pelly-Cassiar Platform (PCP) (Fig.1). The PCP 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. To the northeast of the PCP during late Proterozoic through to Silurian time, a sequence of shallow water carbonates, tuffaceous shale 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.

During late Devonian to Mississippian time, shale, greywacke, and chert pebble conglomerate was deposited over much of the PCP and Selwyn Basin. These rocks were derived from a westerly source, or from locally uplifted parts of the PCP. Felsic igneous activity, including intrusion and volcanism, occurred locally within the PCP, possibly within rifts or graben-like structures created by variable uplift and block faulting within the platformal rocks. Sedimentation resumed within PCP 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 allochthon, 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 anastomosing system of steeply dipping, strike-slip faults related to movement along the northwesterly trending 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.

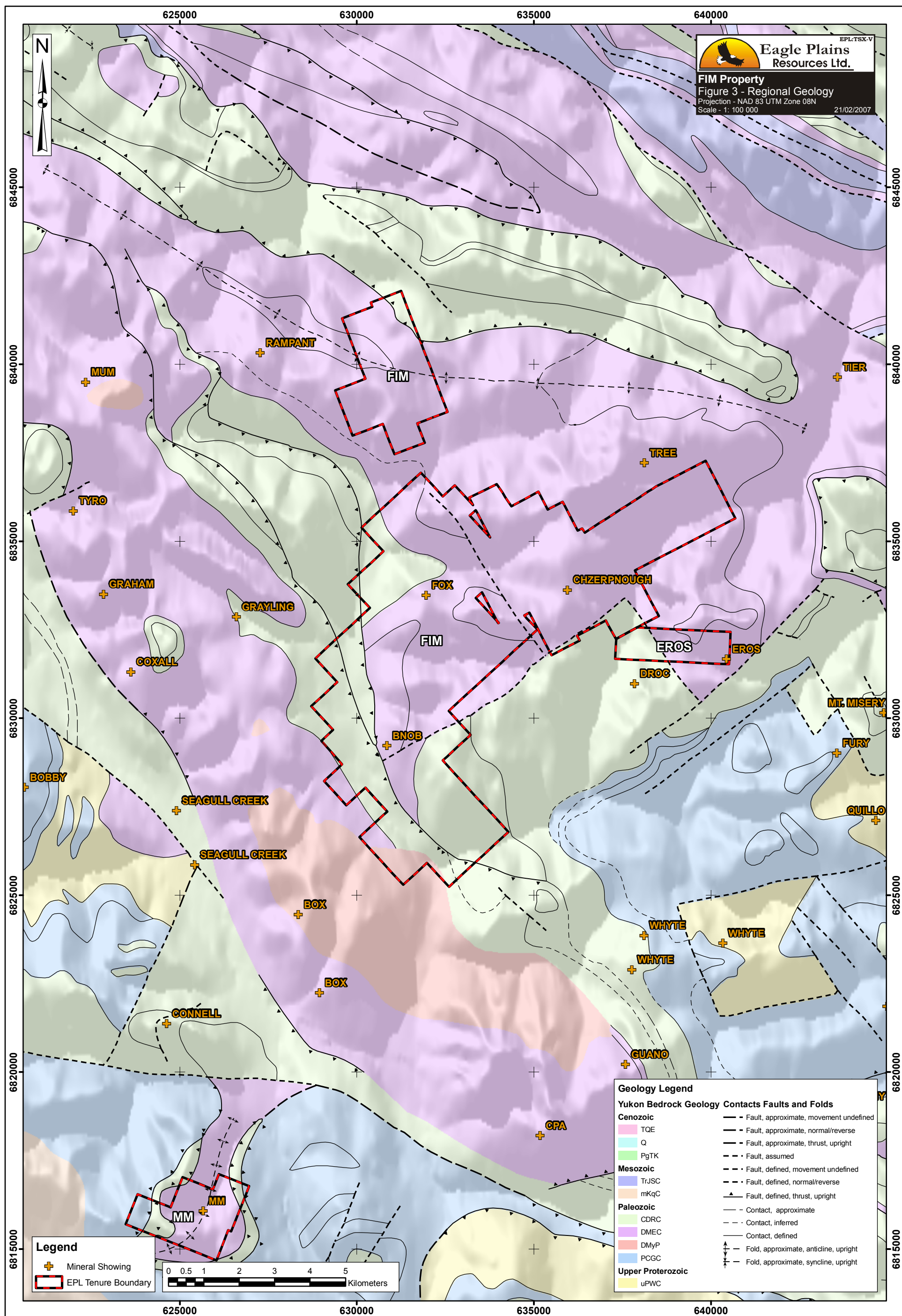
The Pelly Mountains Volcanic Belt is composed of localized volcanic centres separated by basins in-filled with sediments and volcanoclastic rocks. Associated with these volcanic rocks are at least two VMS deposits (the Wolf and the MM) and a number of historical showings, including the Chzernpough (FIRE claims), and the BNOB (ICE claims).

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 rounded 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 sills.

The structural and stratigraphic relationship of the Pelly Mountains Volcanic Belt with other parts of the Pelly-Cassiar Platform are not always clear. In the southern part in the belt near the Wolf deposit, the PMVB rocks are separated from platformal carbonates and associated sediments by thrust, and possibly, steeply dipping normal faults. In the northeastern most part of the belt, immediately northeast of Ketz 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.

The shale and conglomerate are considered age equivalent with the volcanic rocks that 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 shale and minor greywacke. Similarly on the Mamu property, adjacent to the McConnell 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-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. The Siluro-Devonian siltstones, however, are quartz bearing and tan weathering and do not seem to be a good match with the shale attached to the Pelly Mountain Volcanic rocks. Similarly, the younger Triassic sedimentary package has not been observed in contact with 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.



Property Geology

Stratigraphy

In general, the rocks exposed in the FIRE/ICE/MELT property area are similar to parts of the stratigraphy on Atna Resources' Wolf property (Wilson, Holbek 1999). The volcanic rocks of the Pelly Mountains Volcanic Belt (PMVB) are bounded to the west by a fault, marked by the McConnell River. On the other three sides the volcanic rocks are bounded by underlying or overlying shale and argillite (+/- carbonate) that appear to be conformable and part of the PMVB, or the Devonian to Mississippian Black Clastic unit (Pigage, 1980), or the Upper Triassic assemblage of shale, siltstone and carbonate (Gordey, 1977).

The general stratigraphy of the FIRE/ICE/MELT claim area consists of (1) a basal carbonate unit of probable Silurian-Devonian age which crops out close to the McConnell River Valley and appears to be related to other base-metal and skarn-type mineral showings in the region, (2) siliceous, medium-to dark-grey, carbonaceous argillite (commonly phyllite to slate), believed to be Mississippian in age, and (3) rhyodacite to rhyolite tuffs and flows, ranging from unwelded ash to lapilli tuff and agglomerate, to aphyric, locally amygdaloidal flows. The felsic volcanic succession is dominated by fine to coarse lapilli tuffs and flows. Felsic (rhyodacite to dacite) dykes and sills intrude the felsic stratigraphy but are probably comagmatic with the surrounding rhyolitic-trachytic extrusive succession.

Felsic volcanic rocks weather pale green-grey to buff and are dark green-grey on fresh surfaces in non-mineralized zones. Where pervasive mineralization occurs, typically in the form of disseminated pyrite, reaching 10-12% locally, the rocks are heavily oxidized and stained bright red. Amygdules within flows contain either silica or a combination of silica and pyrite. The latter is a positive exploration indicator and, where base metal mineralization within amygdules can be identified, amygdules may serve as a vector for locating massive sulphide bodies, as has been demonstrated for the deposits in the Noranda region in the Canadian Shield. A number of chalcopyrite (rare galena) blebs within amygdaloidal rhyolites on the property indicate a proximity to a base metal source.

The stratigraphy of the property is relatively simple, although intercalations of various volcanic flows and fragmental facies have created a repetitious succession, a feature expected of near-vent (proximal) facies associations in a VMS setting. Following is a more detailed description of the McConnell River area stratigraphy based on Eagle Plains and Atna Resources observations and using Fig. 2 map unit contacts:

UNITS 1 & 2

Limestone and argillite units: Brown to buff weathering, fine-grained grey fresh surface, probably in most part tuffaceous limestone interbedded on a centimeter to decimeter scale with dark grey to black argillite. Locally, this unit maybe intercalated with lapilli lithic tuff. On the western portions of the FIRE claim block this unit is thin, less than 20 meters, and forms a readily recognizable marker unit that is stratigraphically positioned directly over the mineralized horizon. Where the stratigraphy is less well defined, on the eastern portions of the claim block, a limestone-argillite unit is positioned above one mineralized horizon, but is separated from the horizon by 75+ meters of lithic lapilli tuffs. These tuffs grade up into bedded tuffs and into a lime-stone-argillite unit. Close to this locality, a mineralized horizon occurs above the limestone –argillite unit. A limestone-argillite unit was not seen in much of the volcanic stratigraphy that underlies the claim block.

UNIT 3

Purple weathering volcanic or volcanoclastic lithic lapilli tuff: A distinctive purple, flaggy weathering, fine-grained, feldspathic, minor black argillite (?) lithic fragments volcanic or volcanoclastic unit that occurs locally at the northeast end of the property.

Argillite: Grey to black weathering and fresh surface, generally foliated, often well laminated or bedded, occasionally lineation or crenulated, occasionally carbonaceous, fine-grained argillite. This unit occurs in thick (10-75 meter) "sub basins" in the volcanic stratigraphy, as thin (less than 10 meter) inter-volcanic flow sedimentary packages throughout the volcanic stratigraphy. Argillite is frequently intercalated with thick to thin bedded tuffs, minor limestone, or more rarely, thick bedded volcanic flows(?).

UNIT 4

Volcanoclastic rocks: Intermediate to felsic volcanoclastic debris flows and deposits, crystal or ash tuffs with evidence of tuffaceous layering (reworking). This unit includes clast supported heterolithic lapilli tuffs, heterolithic lapilli tuffs with extreme clast variability, lapilli tuffs with a large percentage of sedimentary fragments. Clast size is usually less than 10cm. This unit also encompasses sections that include pyroclastic flows (not uncommon) or other volcanic flows or sills. However, this assemblage is dominantly composed of volcanoclastics +/- argillite. Also included in this unit is a rare occurrence of monolithic lapilli tuff with rounded siliceous clasts.

Mineralized horizon: Intermediate to felsic volcanic to volcanoclastic rocks that are altered (silica and/or sericite) or altered and mineralized with pyrite, barite or rarely galena. Although dominantly composed of ash and lapilli and lithic lapilli tuffs, this unit hosts

a significant quantity of mineralized “yellow” trachyte. In hand sample, the trachyte typically displays ghosts of <2mm feldspar and/or monolithic or heterolithic fragments and /or a breccia texture defined by silica+/- sericite veinlets. Less commonly, a <2mm white feldspar porphyritic trachyte occurs. The trachyte, and to a lesser degree, all the rocks comprising this unit can be extremely hard, grey, silica over sericite altered or softer yellowish green sericite over silica altered. Less intensely altered and mineralized trachytes that are interpreted to occur in the less intensely altered and mineralized “distal” portions of the mineralized horizon can appear to have a chalky, more brittle “porcelaneous” alteration. The mineralization that defines the mineralized horizon consists of fine-grained disseminated pyrite and approximately 1% green barium mica (?). Locally and usually internal to the horizon the pyrite mineralization intensifies to massive dissemination’s and/or irregularly oriented ptigmatically folded veinlets.

Trachyte and mud chip conglomerate: A 1 to 5 meter thick, well sorted and graded trachyte and mud chip conglomerate, or bedded tuff grading to massive lithic lapilli tuff unit that directly overlies the mineralized horizon.

UNIT 5

Volcanic rocks: Augite bearing mafic through to felsic or unmineralized trachytic primary volcanic flows, crystal tuffs, and synvolcanic intrusions. Includes monolithic or near monolithic lapilli tuffs, crystal or ash matrix supported heterolithic lapilli tuffs, lapilli tuffs with large, generally angular, (10cm to greater than 40cm) blocks or bombs, lapilli tuffs bearing evidence for deposition in hot volcanic flows (alteration rims on clasts or fragments or partially reabsorbed clasts or fragments). Included within this unit are altered (silicified) rocks, often of uncertain protolith. Alteration of these rocks is assumed to be hydrothermal and syngenetic, suggesting a proximal position to a volcanic centre. The occurrence of occasional accidental sedimentary fragments was noted in all the above rock types. While this unit is primarily volcanic it also includes minor layered tuffs and argillites that are interpreted as interflow deposits.

UNIT 6

Trachydacite to trachybasalt sills or flows and syenite: This unit is most prominent in the area of the BNOB showing and was the collar lithology for the diamond drillhole I00-01. This unit consists of fine to medium grained, equigranular, pink to grey feldspar and hornblende. The rock is fresh in appearance, unfoliated and has blocky weathering in outcrop due to widely spaced, perpendicular joint sets. Initially this unit was thought to represent a small plug or pipe-like intrusion. Based on limited exposure, however, the lower contact appears to be somewhat strataform and this unit wasn’t intersected in the Cyprus-Anvil drill hole, indicating that it may be sill like. This is consistent with 2001 field observations of the same unit near the northern part of the ICE claims.

UNIT 7

Undifferentiated Intermediate to mafic metavolcanic rocks

Structure

Most of the rocks on the property lie on the gently northerly-dipping limb of a large-scale antiform that is part of a train of west-northwesterly to northwesterly trending, gently dipping folds that appear, in general, to be tighter to the NW. Although the rocks have been deformed, the stratigraphy appears to be intact and many primary volcanic textures are preserved and readily recognizable; although the work is preliminary, the minor structures observed are not suggestive of severe structural disruption, overturning or other such complication.

The rocks have a ubiquitous S1 fabric, expressed in the less competent lithologies (fine grained clastic rocks; ash, and fine to medium grained tuffs) as a pervasive phyllitic foliation, and in the more competent lithologies as a less obvious though still pervasive spaced cleavage; a second phase crenulation cleavage is also common, and particularly notable in the well-foliated metasedimentary rocks and finer grained tuff. The stratified rocks on the property outline broad-wavelength, open folds which appear to post-date the foliation-forming event. A strong joint system measured on the property is best developed within either massive flows or indurated, coarse crystal, lithic tuff.

Alteration And Mineralization

Melt Property Area

A new mineral showing was identified on the MELT property by Eagle Plains Resources during the 2001 field program. The mineralized zone consists of a 2 meter by 5 meter lens of massive sulphide hosted by silicified rhyolitic volcanics. Sulphides consist of massive pyrite with disseminated galena and sphalerite. Samples collected from the showing were highly anomalous in Ag, Cu, Pb, Zn, Hg, Cd, and W, with the best sample CDM01R-04 returning values of 3 gm/T Ag, 227 ppm Cu, 368ppm Pb, 54819ppm Zn, 152ppm Hg, 414.4ppm Cd, and 353ppm W.

Two mineral showing areas were identified in the MELT claim area by past workers. Utah Mines identified an outcrop of rhyolite flow with disseminated and fracture fill sphalerite and pyrite. Work by Fairfield Minerals in the early 1980’s identified boulders of massive

barite and barite-galena associated with a large geochem soil anomaly derived from pyritized felsic volcanics (YEX 1985-1986 P.220).

Fire Property Area

Mineralization identified to date on the FIRE is of two types. The first is sucrosic sedimentary barite with bands of disseminated pyrite and galena. Barite mineralization is best developed as float boulders, but has been identified in-situ in some locations on the property and was intersected in 2000 diamond drilling in diamond drillholes F00-02,03,04, and 05. Where found in place, the barite is associated with yellow to orange gossan horizons developed within a trachyte unit. Geochemically the barite mineralization is highly anomalous in silver, lead, and cadmium, and weakly anomalous in zinc. The second type of mineralization is flow-banded rhyolite with syngenetic pyrite. In comparison to the barite mineralization, the rhyolite is more anomalous in zinc, copper and cadmium, and weakly anomalous in silver and lead.

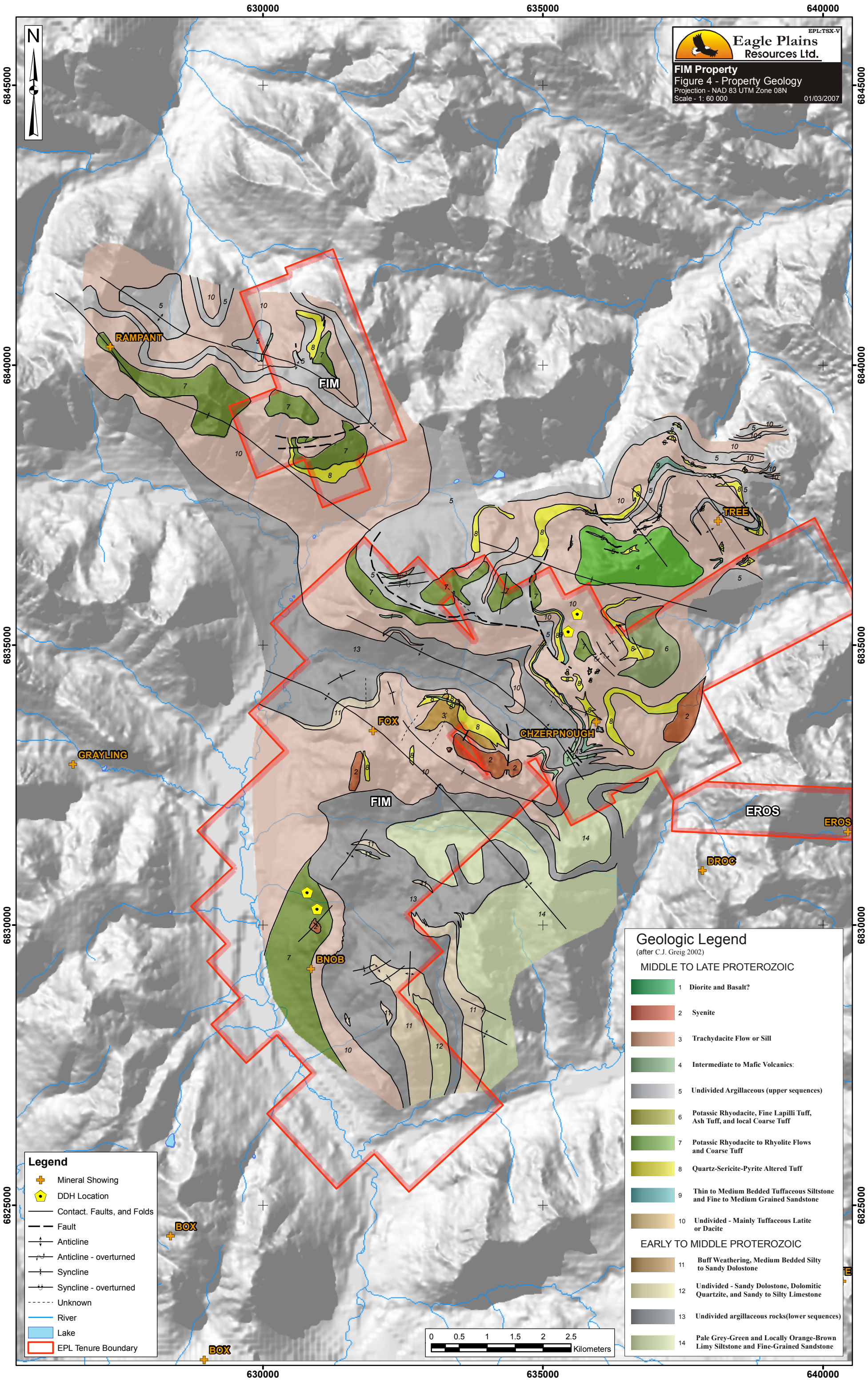
Alteration on the FIRE property is predominantly represented by a quartz - sericite – pyrite assemblage, with local chlorite and rare fluorite. Diamond drill hole F00-01 intersected a zone that possibly represents a skarn type of alteration with pervasive hematite - silica – epidote flood. The hole also cut a zone of pervasive to selective-pervasive potassium feldspar flood and veining.

Ice Property Area

Mineralization on the ICE property consists of bedded barite locally containing significant galena, sphalerite, and accessory pyrite. Mineralization is found in-situ at the BNOB and Greig showing areas, and also in extensive float boulder showings in a number of locations including the Gully Zone and the ICE1 Zone. At the BNOB showing the barite is strataform, up to 4m in width, and is exposed in trenches and outcrop over a strike length of 250m. The Greig showing area, identified by Eagle Plains Resources in 2000 and successfully tested by 2000 drilling, is only partially exposed at the toe of a syenite talus field. The strataform bedded barite here contains sphalerite, galena and pyrite.

Alteration noted from drillhole I00-01 includes strong sericite and pyrite flood with local strong silicification.

As part of the 2001 exploration program about three days were spent in the Whitehorse Core Library examining drill core from previous programs (Eagle Plains in 2000, and Cyprus Anvil in 1980), and slabbing and staining representative samples collected from the core and from traverses undertaken in 2000 and 2001. Staining indicates that extremely potassium feldspar-rich rocks are common on the property, as they are elsewhere in the vicinity of VMS-style mineralization in the Pelly Mountains (e.g., the Wolf property) and in similar VMS-hosting volcanic environments in the Yukon (e.g., Wolverine) and beyond. Reexamination of the Cyprus Anvil drill core revealed that the exhalative barite horizon intersected in the 2000 drill program is underlain by a thick package of very poorly exposed, but heavily pyrite- and sericite-altered tuffaceous rocks which also contain local sphalerite, chalcopyrite, and galena—the core from this hole has never been analyzed.



2006 WORK PROGRAM

In 2006, Eagle Plains commissioned an helicopter borne time domain geophysical survey over the Fire - Ice - Melt project area. The geophysical contractor was GeoTech Limited, with helicopter support provided by TransNorth Helicopters Helicopters using an AStar 350B2. The original contract was for 1250.6 line km, but due to issues related to the relatively rugged nature of the terrane and inexperience of the pilot, only 368 line km were completed (Figure 5).

All preliminary survey data was integrated into the GIS data base and was followed up by a two man one day site visit. Site visit included geochemical sampling for whole rock analysis.

All exploration and reclamation work was carried out in accordance to Yukon Ministry and WCB regulations.

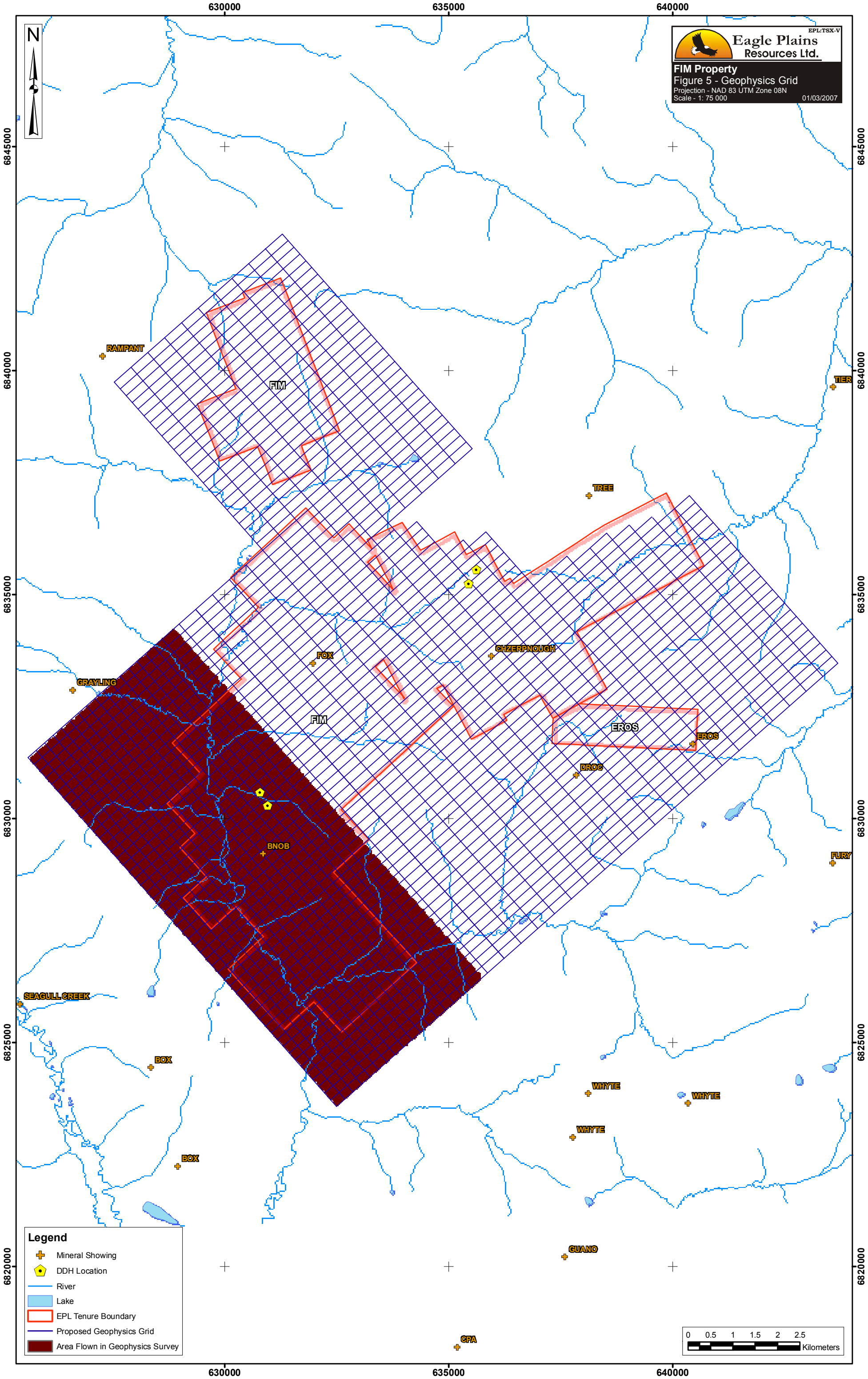
Total 2006 exploration expenditures by Eagle Plains Resources on the Fire - Ice - Melt Project were \$157,636.73.

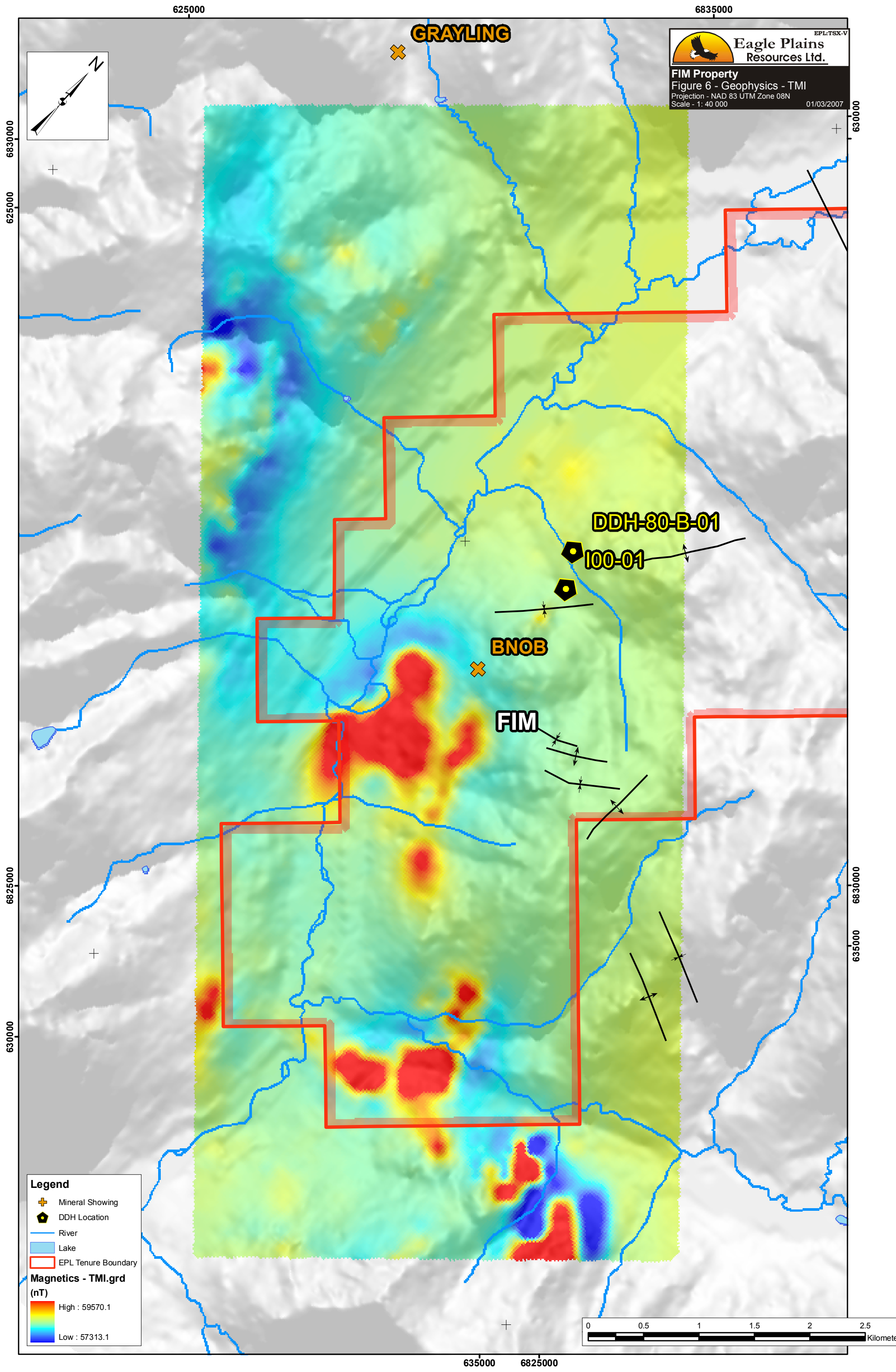
2006 RESULTS

To date, processing of the VTEM data has been limited to production of TMI plan maps. The airborne survey defined a number of geophysical anomalies (Figure 6) and appears to map surficial geology to some degree, particularly in the BNOB showing area. The fault zone, defined by the McConnell River, also appears to be partially mapped by a total magnetic high.

Two main positive magnetic anomalies were identified on the property; the largest of which, 1.5km² in area, is spatially coincident with the BNOB showing. It also trends parallel to strike of undivided tuffaceous latites or dacites (Unit 10).and most importantly is at the same stratigraphic level as the exhalative barite unit. A second positive magnetic anomaly is present along the southern margin of the property. Unfortunately, the anomaly is located south of the limit of mapping, and will be the focus for continued mapping in the future.

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CONCLUSIONS AND RECOMMENDATIONS

The FIM property boasts an impressive stratigraphic package which poses great potential to host VMS mineralization. This potential has been defined by diamond drilling, detailed mapping, and numerous large geochemical surveys. Geochemical anomalies in rocks, soils and silts, are consistent with distal to proximal VMS mineralization and are present along this stratigraphic horizon. Diamond drill testing intersected bedded exhalative type barite mineralization on both the FIRE and ICE properties approximately 7 kilometers apart. The barite is highly anomalous in silver, zinc, lead and copper and appears to be strataform in part.

The airborne geophysical survey, completed in 2006, provided significant data to a portion of the property with very little exposure (approximately 2%) and where very limited geochemical work has been completed in the past. Unfortunately a radiometric package, which would have helped identify potassic and sericitic alteration haloes, could not be added to the survey due to logistical reasons. Regardless, this data will be extremely valuable for developing further geochemical survey programs on the property, which have proved so successful in the past.

The following recommendations are made for the 2007 field season at the FIM Property:

1. Analysis / modeling of geophysical VTEM data in anomalous areas.
2. Further integration of historical data into the GIS database, especially past geophysical data to incorporate with the 2006 survey data.
3. Geochemical analysis of the existing data set focusing on alteration patterns on the property. A detailed alteration picture of the property is the last key dataset that is required on the property to develop a focused drilling program in the future. The following techniques could provide data useful for further ground work and targeting a drill program:
 - obtaining ASTER multispectral imagery and analyzing it for alteration minerals;
 - use of a portable spectrometer, both in the field and on existing core, for analysis of sericite crystallinity and chemistry to distinguish high temperature alteration assemblages;
 - geostatistical analysis of whole rock geochemistry;
 - incorporation of alteration indices to measure intensity of sericite, chlorite, carbonate and pyrite replacement of feldspars (Large et al., 2001).
4. 2007 Field season would involve a one week fly camp on the property where a four man crew would complete continued mapping, geochemical surveys over anomalous areas defined in the 2006 survey and a dedicated whole rock sampling program to help characterize alteration of the system.

A total budget for the 2007 project has been calculated at \$91,484.80. A detailed budget for this work is as follows :

Wages

Employee	Rate/ Day	Pre-Field Days	Cost	Field Days	Cost	Post-Field Days	Cost	Total Cost
Jarrold Brown	\$550.00	10	\$5,500.00	7	\$3,850.00	10	\$5,500.00	\$14,850.00
Thomas Mumford	\$500.00	5	\$2,500.00	7	\$3,500.00	5	\$2,500.00	\$8,500.00
Glen Hendrickson	\$500.00	10	\$5,000.00	0	\$0.00	10	\$5,000.00	\$10,000.00
Brad Robison	\$500.00	5	\$2,500.00	0	\$0.00	5	\$2,500.00	\$5,000.00
Franzi Unterberger	\$450.00	0	\$0.00	7	\$3,150.00	0	\$0.00	\$3,150.00
Mike Seguin	\$400.00	0	\$0.00	7	\$2,800.00	0	\$0.00	\$2,800.00
Chris Gallagher	\$500.00	3	\$1,500.00	0	\$0.00	3	\$1,500.00	\$3,000.00
Chuck Downie	\$800.00	2	\$1,600.00	7	\$5,600.00	2	\$1,600.00	\$8,800.00
FIM Total		20		21		20		
Total Wages:								\$56,100.00

Travel and Accommodation

Cranbrook to Whitehorse	\$ 1,500.00
Accommodation	\$80.00
Food	\$40.00

Travel to and From Whitehorse

Flights	Accommodation	Food
4	2	4

Total Travel: \$6,320.00**Helicopter Support**

Machine	Duties	Rate	Fuel Consumption (l/hr)	Hrs Day	/ Days	Cost
Jet Ranger	Travel	\$900.00		100	2 3	
Total Helicopter:						\$6,120.00

Sampling and Analysis

Analytical Rates			Number	Days
ICP	\$12.00	Geotechs	2	5
Assay	\$19.00	Geos	2	5

Time %			Sampling Rates / Day			Total Samples		
Soiling	Silting	Rock	Soiling	Silting	Rock	Soiling	Silting	Rock
80	20	0	50	12	10	400	24	0
0	0	100	50	12	15	0	0	150

	Total Samples:	Cost
Soils	400	\$4,800.00
Silts	24	\$288.00
Rocks	150	\$2,655.00
Total Sampling and Analysis:		\$7,743.00

Camp Equipment and Rental

Item	Rate	Unit	Number	Duration (Units)	
4WD vehicle	\$500.00	Week	1	1	\$500.00
					TOTAL TRANSPORTATION:
					\$500.00
Item	Rate	Unit	Number	Duration (Units)	
Radios	\$100.00	Month	4	1	\$400.00
Field supply	\$35.00	Day	1	21	\$735.00
					TOTAL TOOLS/FIELD:
					\$1,135.00
Item	Rate	Unit	Number	Duration (Units)	
Genset	\$100.00	Week	1	1	\$100.00

TOTAL CAMP EQUIPMENT: \$100.00

Item	Rate	Unit	Number	Duration (Units)
sat. phone(incl. rental/connection charges)	\$75.00	Week	1	1
Computers	\$75.00	Week	1	1

\$75.00

\$75.00

TOTAL COMM: \$150.00

Item	Rate	Unit	Number	Duration (Units)
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Total Camp Costs \$1,885.00

Data Acquisition

ASTER Data	\$1,000.00
Analysis	\$4,000.00
Total Data:	\$5,000.00

2007 Exploration Budget

SubTotal:	\$83,168.00
10% Contingency:	\$8,316.80
Total 2007 Budget:	\$91,484.80

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Wilson, J and Westerman, C.J. (1977): Combined Geological and Geochemical Report Ram Claim Group; Cyprus-Anvil Mining Corporation; Yukon Assessment Report 090321

APPENDIX I
CERTIFICATES OF QUALIFICATION

CERTIFICATE OF CHARLES C. DOWNIE, P.GEO

I, Charles C. Downie, P. Geo. do hereby certify that:

I am currently employed as VP Exploration Manager Eagle Plains Resources Ltd. with business address: 200-16, 11 Ave.S., Cranbrook, BC V1C 2P5. I am also Exploration Manager for Bootleg Resources Inc., a wholly owned subsidiary of Eagle Plains Resources Inc and having the same business address.

I graduated with a Bachelor of Science Degree from the University of Alberta in 1988.

I have worked as a geologist for a total of 17 years since my graduation from university, and have been involved in the mining and exploration industry since 1980.

I am a member of the Association of Professional Engineers and Geoscientists of the Province of British Columbia (ID 20137). I am entitled to use the seal which is affixed to this report.

I have read the definition of “qualified person” set out in National Instrument 43 – 101 (“NI 43 – 101”) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43 – 101) and past relevant work experience, I fulfill the requirements to be a “qualified person” for the purposes of National Instrument 43 – 101.

I have authored this technical report titled “2006 GEOLOGICAL REPORT FOR THE VULCAN PROPERTY” and dated February 16th 2007 relating to the 2006 technical program by Eagle Plains Resources.

I have based this report on data collected through research and on observations and results from physical work on the property. Data sources include British Columbia Ministry of Energy and Mines Map Place, British Columbia Ministry of Energy and Mines Microfiche, and direct contact with persons involved with past exploration programs on the Vulcan property.

I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.

I am not independent of the issuer applying all of the tests in section 1.5 of National Instrument 43-101. I am a director of Eagle Plains Resources Ltd. since 2002 and currently hold 357,600 shares of that company. I further hold options to purchase 1,170,000 shares of the company at between \$0.65 and \$0.75 per share.

I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Dated at Cranbrook, British Columbia, Canada this 5th Day of March, 2007

Respectfully submitted

Charles C. Downie, P.Geo.

APPENDIX II

STATEMENT OF EXPENDITURES

For mineral exploration on the FIM Property consisting of the Mix 1 to 16, Trix 1 to 56, Trax 1 to 28 and Max 1 to 153 Quartz Claims in the Mayo Mining District, Yukon, NTS 106D07, period of work March 1, 2006 to December 31, 2006.

<i>Geological Personnel</i>		
Chuck Downie - P.Geol, VP Exploration		
Jarrold Brown – Chief Geologist		
Chris Gallagher - Project Geologist		
Jesse Campbell - Camp Manager		
Glen Hendrickson - GIS Technician		
Brad Robison - GIS Technician		
Bryson Malmberg - GIS Technician		
	Subtotal:	\$14,204.70
<i>Geophysics</i>		
Geotech Ltd.		\$115,618.50
	Subtotal:	\$115,618.50
<i>Helicopter Expense</i>		
Trans North Helicopters		\$5,582.88
	Subtotal:	\$5,582.88
<i>Consultants / Contractors</i>		
Chris Ash		\$14,166.68
	Subtotal:	\$14,166.68
<i>Other</i>		
Meals / Travel Expenses		\$1,901.79
Automotive Expenses		\$176.29
Camp Expenses		\$138.53
Field Supplies		\$272.06
Equipment Rental		\$409.55
Equipment Repair / Maintenance / Overhead		\$4,995.75
Training		\$170.00
	Subtotal	\$8,063.97
Total Expenditures for 2006:		\$157,636.73

APPENDIX III
AEROQUEST GEOPHYSICAL REPORT

**REPORT ON A HELICOPTER-BORNE
TIME DOMAIN ELECTROMAGNETIC
GEOPHYSICAL SURVEY**

**The Fire Ice Melt Project
Ross River, Yukon Territory, Canada**

**for
Eagle Plains Resources Ltd.**

By

**Geotech Limited
30 Industrial Parkway South
Aurora, Ontario, Canada
Tel: 1.905.841.5004
Fax: 1.905.841.0611
www.geotechairborne.com**

Email: info@geotechairborne.com

Survey flown in June, 2006

**Project 667
October, 2006**

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REPORT ON A HELICOPTER-BORNE TIME DOMAIN ELECTROMAGNETIC SURVEY

THE FIRE ICE MELT Project, Ross River, Yukon Territory, Canada

Executive Summary

During the period of June 10th to June 14th, 2006, Geotech Limited carried out a helicopter-borne geophysical survey for Eagle Plains Resources Ltd. over one block located south of Ross River, Yukon Territory, Canada.

Principal geophysical sensors included a versatile time domain electromagnetic system (VTEM) and a cesium magnetometer. Ancillary equipment included a GPS navigation system and a radar altimeter. A total of 368 line-km were flown.

In-field data processing involved quality control and compilation of data collected during the acquisition stage, using the in-field processing centre established at Ross River, Yukon Territory. Preliminary and final data processing, including generation of final digital data products were done at the office of Geotech Limited in Aurora, Ontario.

The processed survey results are presented as total magnetic field grid and electromagnetic stacked profiles.

Digital data includes all electromagnetic and magnetic products plus positional, altitude and raw data.

1. INTRODUCTION

1.1 General Considerations

These services are the result of the Agreement made between Geotech Limited and Eagle Plains Resources Ltd., to perform a helicopter-borne geophysical survey over the THE FIRE ICE MELT Project, located approximately 30 km south of Ross River, Yukon Territory, Canada.

368 line-km of geophysical data were acquired during the survey.

The survey block is as shown in Appendix A.

The crew was based in Ross River, Yukon Territory for the acquisition phase of the survey, as shown in Section 2 of this report.

The helicopter was based at Ross River airport for the duration of the survey. Survey flying was completed on June 13th, 2006. Preliminary data processing was carried out daily during the acquisition phase of the project. Final data presentation and data archiving was completed in the Aurora office of Geotech Limited in October 2006.

1.2 Survey and System Specifications

The survey block was flown at nominal traverse line spacing of 200 metres. Tie lines were flown perpendicular to traverse lines at 250 metres spacing.

Where possible, the helicopter maintained a mean terrain clearance of 80 metres, which translated into an average height of 45 metres above ground for the bird-mounted VTEM system and 45 metres for the magnetic sensor.

The survey was flown using an Astar B2 helicopter, registration C-GTNU, operated by TransNorth Helicopters Limited. Details of the survey specifications may be found in Section 2 of this report.

1.3. Data Processing and Final Products

Data compilation and processing were carried out by the application of Geosoft OASIS Montaj and programs proprietary to Geotech Limited.

Database, grid and maps of final products were presented to Eagle Plains Resources Ltd.

The survey report describes the procedures for data acquisition, processing, final image presentation and the specifications for the digital data set.

1.4. Topographic Relief

The survey block is located approximately 30 kilometres south of Ross River, Yukon Territory.

Topographically, the block exhibits mountainous relief, with elevation range approximately from 1000 metres to 1810 metres above sea level.

Two deep valleys draining to south intersect the area.

Topographical information was provided by the client and included in the final maps.

2. DATA ACQUISITION

2.1. Survey Area

The survey block (see location maps, Appendix A) and general flight specifications are as follows:

Survey block	Line spacing (m)	Area (Km ²)	Line-km	Flight direction	Line number
FIM	200	47.2	180.2	N45°E	L1050 - L1440
	250		187.8	N45°W	T2215 – T2300
Total Flown			368.0		

Table 1 - Survey block

Survey block boundaries are as shown in Appendix B.

2.2. Survey Operations

Survey operations were based at TND Motor Inn, Ross River, Yukon Territory for the acquisition phase of the survey.

The following table shows the timing of the flying.

Date	Crew Location	Flight #	Km flown	Comments
9-Jun	Ross River		0.0	Mobilization Date
10-Jun	Ross River	1,2,3	209.0	
11-Jun	Ross River	4	72.1	Pilot ill
12-Jun	Ross River	-	0.0	Pilot ill
13-Jun	Ross River	5, 6	86.9	Survey finished
Total Flown			368.0	

Table 2 - Survey schedule

2.3. *Flight Specifications*

The nominal EM sensor terrain clearance was 45 m (EM bird height above ground, i.e. helicopter is maintained 80 m above ground). Nominal survey speed was 80 km/hour. The data recording rates of the data acquisition was 0.1 second for electromagnetics and magnetometer, 0.2 second for altimeter and GPS. This translates to a geophysical reading about every 2 metres along flight track. Navigation was assisted by a GPS receiver and data acquisition system, which reports GPS co-ordinates as latitude/longitude and directs the pilot over a pre-programmed survey grid.

The operator was responsible for monitoring of the system integrity. He also maintained a detailed flight log during the survey, tracking the times of the flight as well as any unusual geophysical or topographic feature.

On return of the aircrew to the base camp the survey data was transferred from a compact flash card (PCMCIA) to the data processing computer.

2.4. Aircraft and Equipment

2.4.1. Survey Aircraft

An Astar B2 helicopter, registration C-GTNU - owned and operated by TransNorth Helicopters Ltd. was used for the survey. Installation of the geophysical and ancillary equipment was carried out by Geotech Ltd.

2.4.2. Electromagnetic System

The electromagnetic system was a Geotech Versatile Time Domain EM (VTEM) system. The layout of the two configuration used for this survey is as indicated in Figure 1 below.

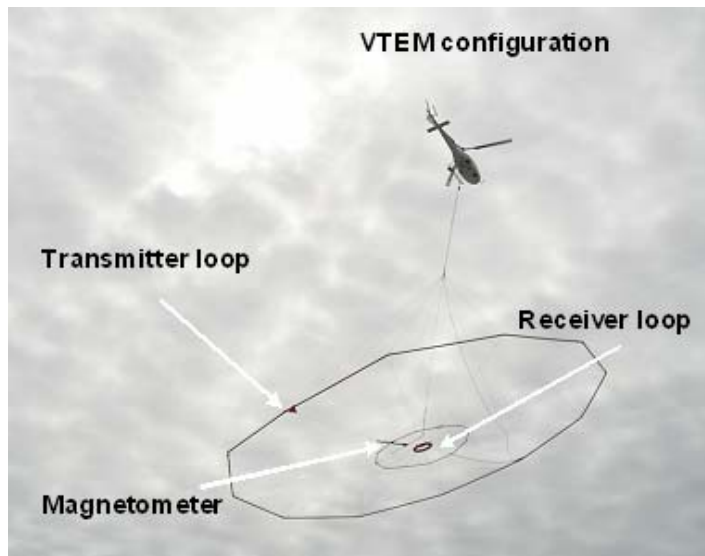


Figure 1 - VTEM Configuration

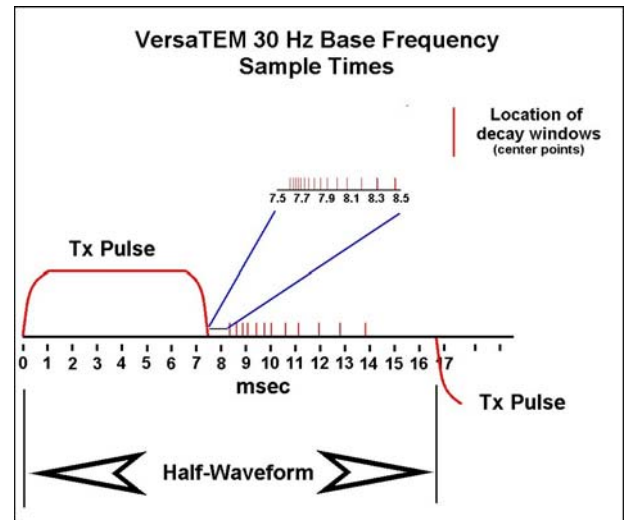


Figure 2 - VTEM sample times

Receiver and transmitter coils are concentric and Z-direction oriented.

The receiver decay recording scheme is shown diagrammatically in Figure 2.

Twenty-nine measurement gates were used in the range from 70 μ s to 7540 μ s, as shown in the following table.

VTEM Decay Sampling scheme (Microseconds)			
Time gate	Start	End	Width
70	60	80	20
90	800	100	20
110	100	120	20
130	120	140	20
150	140	160	20
170	160	180	20
190	180	205	25
220	205	240	35
260	240	280	40
300	280	325	45
350	325	380	55
410	380	445	65
480	445	525	80
570	525	625	100
680	625	745	120
810	745	885	140
960	885	1045	160
1130	1045	1235	190
1340	1235	1470	235
1600	1470	1750	280
1900	1750	2070	320
2240	2070	2450	380
2660	2450	2920	470
3180	2920	3480	560
3780	3480	4120	640
4460	4120	4880	760
5300	4880	5820	940
6340	5820	6860	1040
7540	6860	8220	1360

Table 3 - VTEM decay sampling scheme

Transmitter coil diameter was 26 metres, the number of turns was 4.
Transmitter pulse repetition rate was 30 Hz.
Peak current was 167 A.
Duty cycle was 37%.
Peak dipole moment was 355,000 NIA.

Receiver coil diameter was 1.2 metre, the number of turns was 100.
Receiver effective area was 113 m²
Wave form – trapezoid.
Recording sampling rate was 10 samples per second.

The EM bird was towed 35 m. below the helicopter.

2.4.3. Airborne magnetometer

The magnetic sensor utilized for the survey was a Geometrics optically pumped cesium vapour magnetic field sensor, mounted in a separate bird towed at the same altitude as the EM sensor. The sensitivity of the magnetic sensor is 0.02 nanoTesla (nT) at a sampling interval of 0.1 seconds. The magnetometer sends the measured magnetic field strength as nanoTeslas to the data acquisition system via the RS-232 port.

2.4.4. Ancillary Systems

2.4.4.1. Radar Altimeter

A Terra TRA 3000/TRI 40 radar altimeter was used to record terrain clearance. The antenna was mounted beneath the bubble of the helicopter cockpit.

2.4.4.2. GPS Navigation System

The navigation system used was a Geotech PC based navigation system utilizing a NovAtel's WAAS enable OEM4-G2-3151W GPS receiver, Geotech navigate software, a full screen display with controls in front of the pilot to direct the flight and an NovAtel GPS antenna mounted on the helicopter tail.

The co-ordinates of the block were set-up prior to the survey and the information was fed into the airborne navigation system.

2.4.4.3. Digital Acquisition System

A Geotech data acquisition system recorded the digital survey data on an internal compact flash card. Data is displayed on an LCD screen as traces to allow the operator to monitor the integrity of the system. Contents and update rates were as follows:

DATA TYPE	SAMPLING
TDEM	0.1 sec
Magnetometer	0.1 sec
GPS Position	0.2 sec
RadarAltimeter	0.2 sec

Table 4 - Sampling Rates

2.4.5. Base Station

A combined magnetometer/GPS base station was utilized on this project. A Geometrics Cesium vapour magnetometer was used as a magnetic sensor with a sensitivity of 0.001 nT. The base station was recording the magnetic field together with the GPS time at 1 Hz on a base station computer. The base station magnetometer sensor was installed away from electric transmission lines and moving ferrous objects such as motor vehicles. The magnetometer base station's data was backed-up to the data processing computer at the end of each survey day.

3. PERSONNEL

The following Geotech Ltd. personnel were involved in the project.

Field

Operator: Calin Cosma

The survey pilot and the mechanic engineer were employed directly by the helicopter operator – TransNorth Helicopters.

Pilot: Alan Stannard

Mechanical Engineer: Margo Hager

Office

Data Processing: Harish Kumar

Data Processing / Reporting: George Lev

Data Technician Maria Jagodkin

Final data processing at the office of Geotech Limited in Aurora, Ontario was carried out under the supervision of Andrei Bagrianski, Data Processing Manager.

Overall management of the survey was carried out from the Aurora office of Geotech Ltd. by Edward Morrison, President.

4. DATA PROCESSING AND PRESENTATION

4.1. *Flight Path*

The flight path, recorded by the acquisition program as WGS 84 latitude/longitude, was converted into the UTM coordinate system in Oasis Montaj.

The flight path was drawn using linear interpolation between x,y positions from the navigation system. Positions are updated every second and expressed as UTM eastings (x) and UTM northings (y).

4.2. *Electromagnetic Data*

A three stage digital filtering process was used to reject major spheric events and to reduce system noise. Local spheric activity can produce sharp, large amplitude events that cannot be removed by conventional filtering procedures. Smoothing or stacking will reduce their amplitude but leave a broader residual response that can be confused with geological phenomena. To avoid this possibility, a computer algorithm searches out and rejects the major spheric events. The filter used was a 16 point non-linear filter.

The signal to noise ratio was further improved by the application of a low pass linear digital filter. This filter has zero phase shift which prevents any lag or peak displacement from occurring, and it suppresses only variations with a wavelength less than about 1 second or 20 metres. This filter is a symmetrical 1 sec linear filter.

The results are presented as stacked profiles of EM voltages for the gate times, in logarithmic scale.

Generalized modeling results of the VTEM system, written by Geophysicist Roger Barlow, are shown in Appendix C.

The VTEM output voltage of the receiver coil is shown in Appendix D.

4.3. Magnetic Data

The processing of the magnetic data involved the correction for diurnal variations by using the digitally recorded ground base station magnetic values. The base station magnetometer data was edited and merged into the Geosoft GDB database on a daily basis. The aeromagnetic data was corrected for diurnal variations by subtracting the observed magnetic base station deviations.

Tie line levelling was carried out by adjusting intersection points along the traverse lines. A micro-levelling procedure was then applied. This technique is designed to remove persistent low-amplitude components of flight-line noise remaining after tie line levelling.

The corrected magnetic data was interpolated between survey lines using a random point gridding method to yield x-y grid values for a standard grid cell size of approximately 0.2 cm at the mapping scale. The Minimum Curvature algorithm was used to interpolate values onto a rectangular regular spaced grid.

5. DELIVERABLES

5.1. *Survey Report*

The survey report describes the data acquisition, processing, and final presentation of the survey results.

The survey report is provided in two paper copies and digitally in PDF format.

5.2. *Maps*

Final maps were produced at a scale of 1:20,000. The coordinate/projection system used was the WGS84, UTM zone 8 north. All maps show the flight path trace and topographic data (watercourses). Latitude and longitude are also noted on maps.

The following maps are presented to Eagle Plains Resources Ltd. on paper as results of the helicopter-borne geophysical survey carried out over “FIM” block.

- Total Magnetic Field contours and colour images
- Logarithmic scale VTEM profiles, Time Gates 0.22 - 6.34 ms

5.3. *Gridded Data*

Total Magnetic Field grid is provided to Eagle Plains Resources Ltd. in Geosoft GRD format. Grid cell size of 25 metres was used.

5.4. *Digital Data*

There are two (2) main directories,

Data contains a database, grid and maps, as described below.

Report contains a copy of the report and appendixes in PDF format.

- Database in Geosoft GDB format, containing the following channels:

X:	X positional data (metres – NAD83, utm zone 8 north)
Y:	Y positional data (metres – NAD83, utm zone 8 north)
Lon:	Longitude data (degree – WGS84)
Lat:	Latitude data (degree – WGS84)
Z:	GPS antenna elevation (metres - ASL) (on the tail of the helicopter)
Gtime1:	GPS time (seconds of the day)
Radar:	Helicopter terrain clearance from radar altimeter (metres - AGL)
DEM:	Digital elevation model (meters)
Mag1:	Raw Total Magnetic field data (nT)
Basemag:	Base station magnetic data (nT)
Mag2:	Total Magnetic field base station corrected data (nT)
Mag3:	Leveled Total Magnetic field data (nT)
C70f:	Raw 70 microsecond time channel (pV/A/m ⁴)
C90f:	Raw 90 microsecond time channel (pV/A/m ⁴)
C110f:	Raw 110 microsecond time channel (pV/A/m ⁴)
C130f:	Raw 130 microsecond time channel (pV/A/m ⁴)
C150f:	Raw 150 microsecond time channel (pV/A/m ⁴)
C170f:	Raw 170 microsecond time channel (pV/A/m ⁴)
C190f:	Raw 190 microsecond time channel (pV/A/m ⁴)
C220f:	Raw 220 microsecond time channel (pV/A/m ⁴)
C260f:	Raw 260 microsecond time channel (pV/A/m ⁴)
C300f:	Raw 300 microsecond time channel (pV/A/m ⁴)
C350f:	Raw 350 microsecond time channel (pV/A/m ⁴)
C410f:	Raw 410 microsecond time channel (pV/A/m ⁴)
C480f:	Raw 480 microsecond time channel (pV/A/m ⁴)
C570f:	Raw 570 microsecond time channel (pV/A/m ⁴)
C680f:	Raw 680 microsecond time channel (pV/A/m ⁴)
C810f:	Raw 810 microsecond time channel (pV/A/m ⁴)
C960f:	Raw 960 microsecond time channel (pV/A/m ⁴)
C1130f:	Raw 1130 microsecond time channel (pV/A/m ⁴)
C1340f:	Raw 1340 microsecond time channel (pV/A/m ⁴)
C1600f:	Raw 1600 microsecond time channel (pV/A/m ⁴)
C1900f:	Raw 1900 microsecond time channel (pV/A/m ⁴)
C2240f:	Raw 2240 microsecond time channel (pV/A/m ⁴)
C2660f:	Raw 2660 microsecond time channel (pV/A/m ⁴)
C3180f:	Raw 3180 microsecond time channel (pV/A/m ⁴)
C3780f:	Raw 3780 microsecond time channel (pV/A/m ⁴)
C4460f:	Raw 4460 microsecond time channel (pV/A/m ⁴)
C5300f:	Raw 5300 microsecond time channel (pV/A/m ⁴)

C6340f: Raw 6340 microsecond time channel (pV/A/m^4)
C7540f: Raw 7540 microsecond time channel (pV/A/m^4)
PLinef: Power line monitor (linear trend removed)

- Grids in Geosoft GRD format, as follow,

667_Mag: Total Magnetic field (nT)

A Geosoft .GRD file has a .GI metadata file associated with it, containing grid projection information.

- Maps at 1:20,000 scale in Geosoft MAP format, as follow,

667_Mag: Total Magnetic Field image and contours

667_LogProf: Logarithmic scale profiles, Time Gates 0.22 – 6.34 ms

Maps are also presented in ArcView Shape (SHP) format.

- ASCII file VTEM_WaveForm.xyz in Geosoft format containing the following channel:

Volt: output voltage of the receiver coil
(volts, sampling rate 20 microseconds)

- Google Earth KMZ file containing flight path of the block Fire Ice Melt located under Data

Free version of Google Earth software can be downloaded from,
<http://earth.google.com/download-earth.html>

- A *readme.txt* file describing the content of digital data, as described above.

6. CONCLUSIONS

A versatile time domain electromagnetic helicopter-borne geophysical survey has been completed over the FIRE ICE MELT Project, located south of Ross River, Yukon Territory, Canada.

The total area coverage is 47.2 km². Total survey line coverage is 368 line kilometres. The principal sensors included a Time Domain EM system and a magnetometer. Results have been presented as colour contour maps and stacked profiles at a scale of 1:20,000.

Final data processing at the office of Geotech Limited in Aurora, Ontario was carried out under the supervision of Andrei Bagrianski, Data Processing Manager.

Respectfully submitted,

Marta Orta
On behalf of

George Lev
Geotech Limited
October 26, 2006



APPENDIX A

SURVEY BLOCK LOCATION MAP



APPENDIX B

SURVEY BLOCK COORDINATES

FIRE ICE MELT Project (WGS84, UTM zone 8N)

UTM eastings (x)	UTM northings (y)
635882	6826566
632496	6823569
625621	6831348
628984	6834374

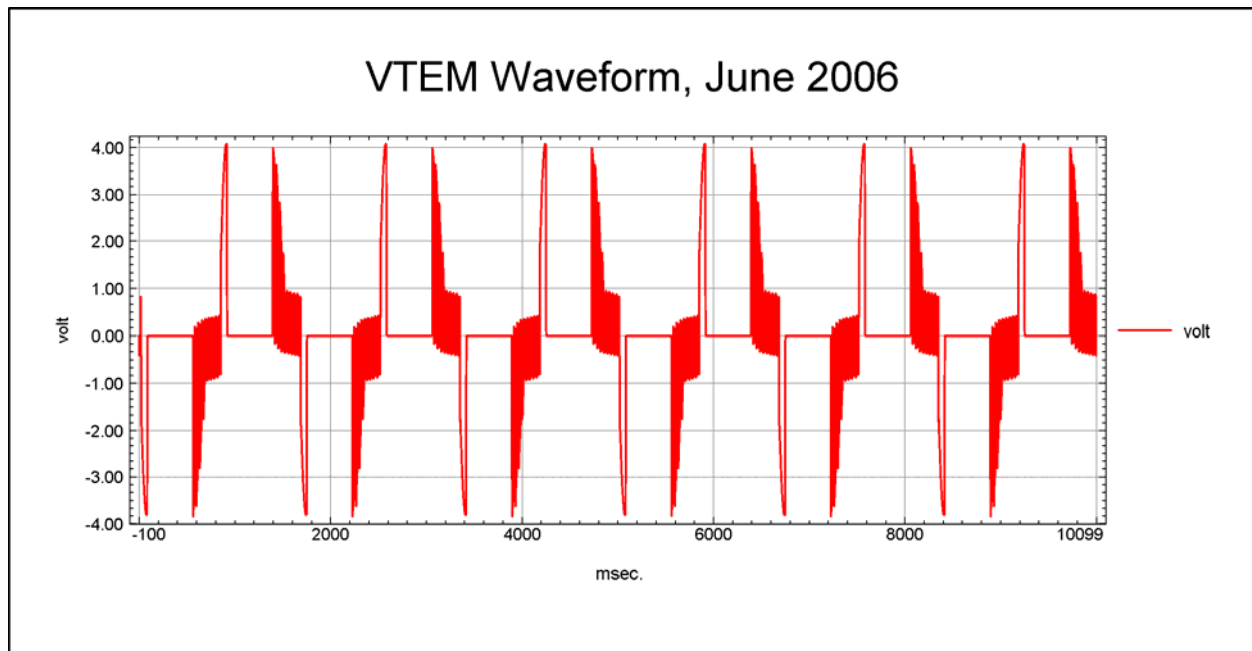
APPENDIX C

GENERAL MODELING RESULTS OF THE VTEM SYSTEM

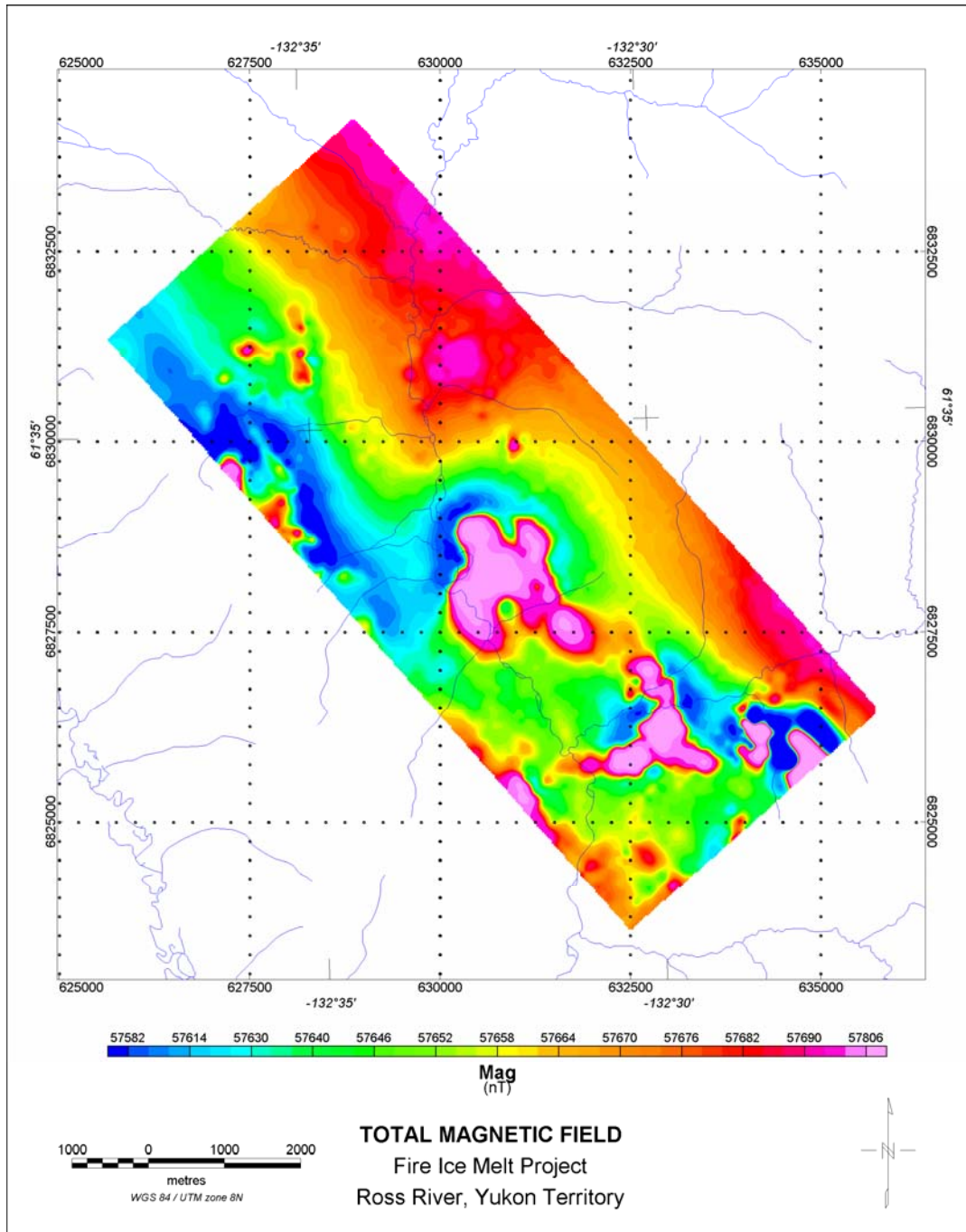


APPENDIX D

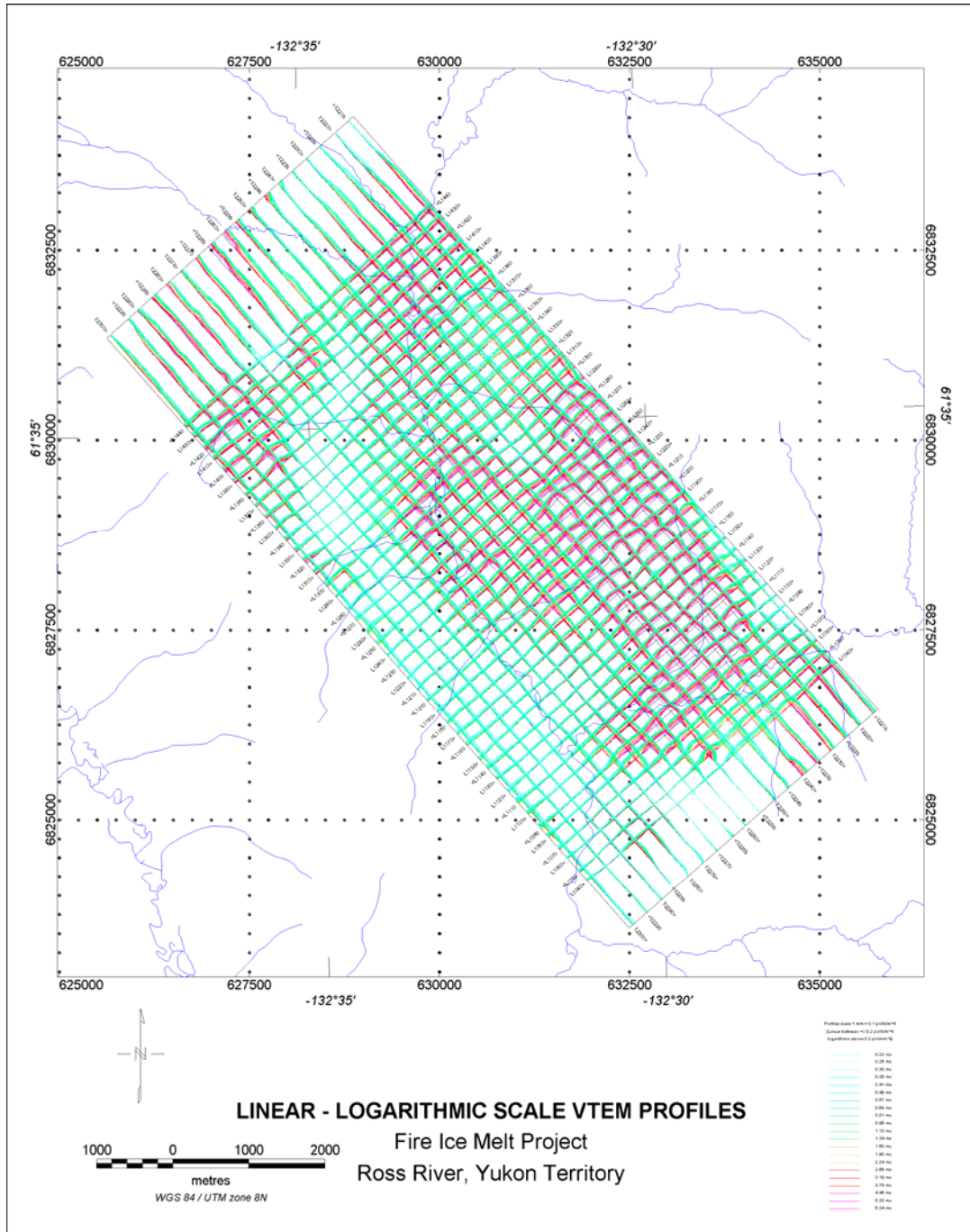
VTEM WAVEFORM



APPENDIX E
GEOPHYSICAL MAPS



GEOPHYSICAL MAPS



GENERALIZED MODELING RESULTS OF THE VTEM SYSTEM

Introduction

The VTEM system is based on a concentric or central loop design, whereby, the receiver is positioned at the centre of a 26.1 metres diameter transmitter loop that produces a dipole moment up to 625,000 NIA at peak current. The wave form is a bi-polar, modified square wave with a turn-on and turn-off at each end. With a base frequency of 30 Hz, the duration of each pulse is approximately 7.5 milliseconds followed by an off time where no primary field is present.

During turn-on and turn-off, a time varying field is produced (dB/dt) and an electro-motive force (emf) is created as a finite impulse response. A current ring around the transmitter loop moves outward and downward as time progresses. When conductive rocks and mineralization are encountered, a secondary field is created by mutual induction and measured by the receiver at the centre of the transmitter loop.

Measurements are made during the off-time, when only the secondary field (representing the conductive targets encountered in the ground) is present.

Efficient modeling of the results can be carried out on regularly shaped geometries, thus yielding close approximations to the parameters of the measured targets. The following is a description of a series of common models made for the purpose of promoting a general understanding of the measured results.

Variation of Plate Depth

Geometries represented by plates of different strike length, depth extent, dip, plunge and depth below surface can be varied with characteristic parameters like conductance of the target, conductance of the host and conductivity/thickness and thickness of the overburden layer.

Diagrammatic models for a vertical plate are shown in figures A and G at two different depths, all other parameters remaining constant. With this transmitter-receiver geometry, the classic **M** shaped response is generated. Figure A shows a plate where the top is near surface. Here, amplitudes of the dual peaks are higher and symmetrical with the zero centre positioned directly above the plate. Most important is the separation distance of the peaks. This distance is small when the plate is near surface and widens with a linear relationship as the plate (depth to top) increases. Figure G shows a much deeper plate where the separation distance of the peaks is much wider and the amplitudes of the channels have decreased.

Variation of Plate Dip

As the plate dips and departs from the vertical position, the peaks become asymmetrical. Figure B shows a near surface plate dipping 80°. Note that the direction of dip is toward the high shoulder of the response and the top of the plate remains under the centre minimum.

As the dip increases, the aspect ratio (Min/Max) decreases and this aspect ratio can be used as an empirical guide to dip angles from near 90° to about 30°. The method is not sensitive enough where dips are less than about 30°. Figure E shows a plate dipping 45° and, at this angle, the

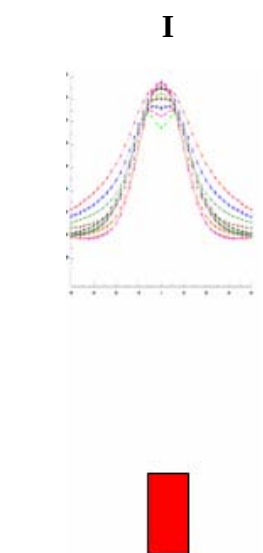
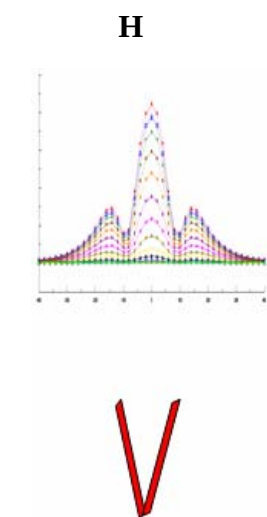
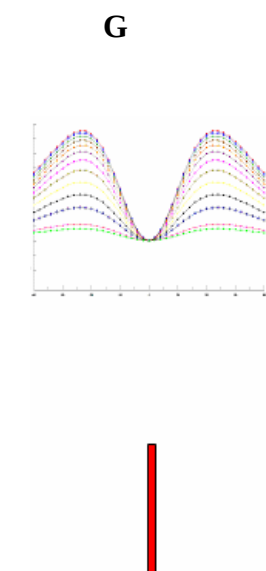
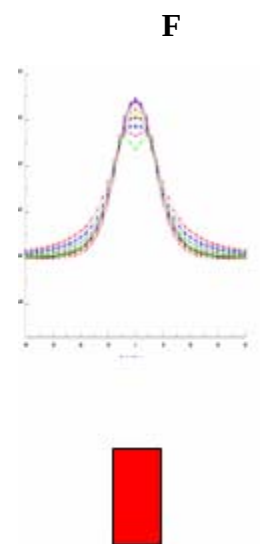
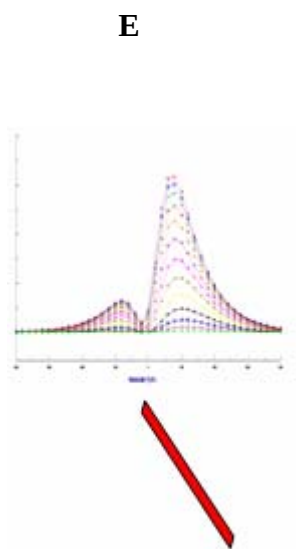
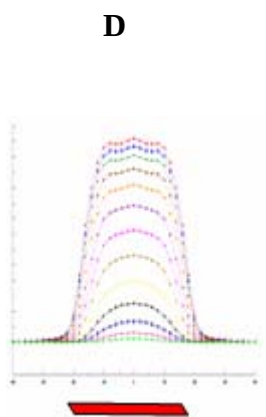
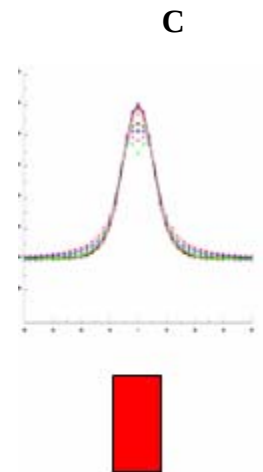
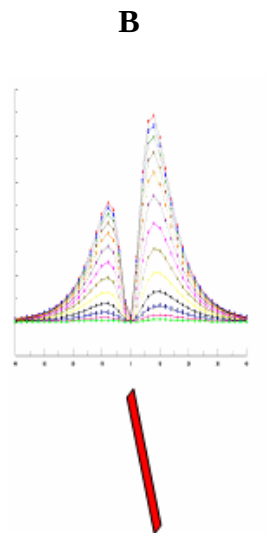
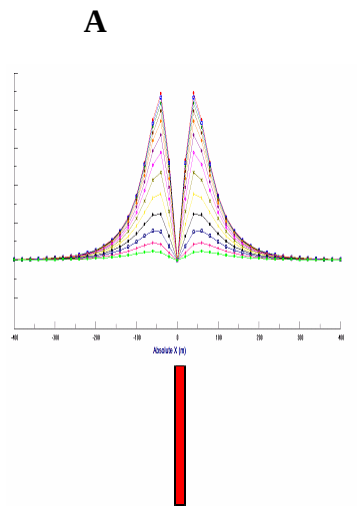
minimum shoulder starts to vanish. In Figure D, a flat lying plate is shown, relatively near surface. Note that the twin peak anomaly has been replaced by a symmetrical shape with large, bell shaped, channel amplitudes which decay relative to the conductance of the plate.

Figure H shows a special case where two plates are positioned to represent a synclinal structure. Note that the main characteristic to remember is the centre amplitudes are higher (approximately double) compared to the high shoulder of a single plate. This model is very representative of tightly folded formations where the conductors were once flat lying.

Variation of Prism Depth

Finally, with prism models, another algorithm is required to represent current on the plate. A plate model is considered to be infinitely thin with respect to thickness and incapable of representing the current in the thickness dimension. A prism model is constructed to deal with this problem, thereby, representing the thickness of the body more accurately.

Figures C, F and I show the same prism at increasing depths. Aside from an expected decrease in amplitude, the side lobes of the anomaly show a widening with deeper prism depths of the bell shaped early time channels.



General Modeling Concepts

A set of models has been produced for the Geotech VTEM® system with explanation notes (see models A to I above). The reader is encouraged to review these models, so as to get a general understanding of the responses as they apply to survey results. While these models do not begin to cover all possibilities, they give a general perspective on the simple and most commonly encountered anomalies.

When producing these models, a few key points were observed and are worth noting as follows:

- For near vertical and vertical plate models, the top of the conductor is always located directly under the centre low point between the two shoulders in the classic **M** shaped response.
- As the plate is positioned at an increasing depth to the top, the shoulders of the **M** shaped response, have a greater separation distance.
- When faced with choosing between a flat lying plate and a prism model to represent the target (broad response) some ambiguity is present and caution should be exercised.
- With the concentric loop system and Z-component receiver coil, virtually all types of conductors and most geometries are most always well coupled and a response is generated (see model H). Only concentric loop systems can map this type of target.

The modelling program used to generate the responses was prepared by PetRos Eikon Inc. and is one of a very few that can model a wide range of targets in a conductive half space.

General Interpretation Principals

Magnetics

The total magnetic intensity responses reflect major changes in the magnetite and/or other magnetic minerals content in the underlying rocks and unconsolidated overburden. Precambrian rocks have often been subjected to intense heat and pressure during structural and metamorphic events in their history. Original signatures imprinted on these rocks at the time of formation have, in most cases, been modified, resulting in low magnetic susceptibility values.

The amplitude of magnetic anomalies, relative to the regional background, helps to assist in identifying specific magnetic and non-magnetic rock units (and conductors) related to, for example, mafic flows, mafic to ultramafic intrusives, felsic intrusives, felsic volcanics and/or sediments etc. Obviously, several geological sources can produce the same magnetic response. These ambiguities can be reduced considerably if basic geological information on the area is available to the geophysical interpreter.

In addition to simple amplitude variations, the shape of the response expressed in the wave length and the symmetry or asymmetry, is used to estimate the depth, geometric parameters and magnetization of the anomaly. For example, long narrow magnetic linears usually reflect mafic flows or intrusive dyke features. Large areas with complex magnetic patterns may be produced by intrusive bodies with significant magnetization, flat lying magnetic sills or sedimentary iron formation. Local isolated circular magnetic patterns often represent plug-like igneous intrusives such as kimberlites, pegmatites or volcanic vent areas.

Because the total magnetic intensity (TMI) responses may represent two or more closely spaced bodies within a response, the second derivative of the TMI response may be helpful for distinguishing these complexities. The second derivative is most useful in mapping near surface linears and other subtle magnetic structures that are partially masked by nearby higher amplitude magnetic features. The broad zones of higher magnetic amplitude, however, are severely attenuated in the vertical derivative results. These higher amplitude zones reflect rock units having strong magnetic susceptibility signatures. For this reason, both the TMI and the second derivative maps should be evaluated together.

Theoretically, the second derivative, zero contour or colour delineates the contacts or limits of large sources with near vertical dip and shallow depth to the top. The vertical gradient map also aids in determining contact zones between rocks with a susceptibility contrast, however, different, more complicated rules of thumb apply.

Concentric Loop EM Systems

Concentric systems with horizontal transmitter and receiver antennae produce much larger responses for flat lying conductors as contrasted with vertical plate-like conductors. The amount of current developing on the flat upper surface of targets having a substantial area in this dimension, are the direct result of the effective coupling angle, between the primary magnetic field and the flat surface area. One therefore, must not compare the amplitude/conductance of responses generated from flat lying bodies with those derived from near vertical plates; their ratios will be quite different for similar conductances.

Determining dip angle is very accurate for plates with dip angles greater than 30°. For angles less than 30° to 0°, the sensitivity is low and dips can not be distinguished accurately in the presence of normal survey noise levels.

A plate like body that has near vertical position will display a two shoulder, classic **M** shaped response with a distinctive separation distance between peaks for a given depth to top.

It is sometimes difficult to distinguish between responses associated with the edge effects of flat lying conductors and poorly conductive bedrock conductors. Poorly conductive bedrock conductors having low dip angles will also exhibit responses that may be interpreted as surficial overburden conductors. In some situations, the conductive response has line to line continuity and some magnetic correlation providing possible evidence that the response is related to an actual bedrock source.

The EM interpretation process used, places considerable emphasis on determining an understanding of the general conductive patterns in the area of interest. Each area has different characteristics and these can effectively guide the detailed process used.

The first stage is to determine which time gates are most descriptive of the overall conductance patterns. Maps of the time gates that represent the range of responses can be very informative.

Next, stacking the relevant channels as profiles on the flight path together with the second vertical derivative of the TMI is very helpful in revealing correlations between the EM and Magnetics.

Next, key lines can be profiled as single lines to emphasize specific characteristics of a conductor or the relationship of one conductor to another on the same line. Resistivity Depth sections can be constructed to show the relationship of conductive overburden or conductive bedrock with the conductive anomaly.