Assessment Report

on the

2005 Helicopter-Borne AeroTEM II Electromagnetic and Magnetic Survey

Wild Rose Gold Property

BOUNDARY DISTRICT

NTS 82E/2

Lat: 49° 04' 30'' N Long: 118° 43' 30'' W (at approximate centre of property)

Greenwood Mining Division British Columbia, Canada

Prepared for:

730821 B.C. Ltd. 34a-2755 Lougheed Highway, Suite 522, Port Coquitlam, B.C. V3B 5Y9

By: Linda Caron, M.Sc., P. Eng. 717 75th Ave, Box 2493 Grand Forks, B.C. V0H 1H0



March 28, 2006

TABLE OF CONTENTS

1.0	SUMMARY 1	<u>'age</u> 1
2.0	INTRODUCTION	2
	2.1 Property Description and Location	2
	2.2 Access, Climate, Local Resources, Infrastructure and Physiography 5	5
	2.3 History of Exploration - Wild Rose Property	8
	2.4Summary of 2005 Work Program	9
3.0	GEOLOGY	9
	3.1 Regional Geology, Structure and Metallogeny	9
	3.2 Property Geology and Mineralization 10	0
4.0	GEOPHYSICS	0
5.0	RECOMMENDATIONS	2
6.0	REFERENCES	4
7.0	STATEMENT OF QUALIFICATIONS	8

LIST OF FIGURES

Daga

		Lage
Figure 1 -	Location Map	3
Figure 2 -	Claim Map	4
Figure 3 -	Property Geology Map	11
Figure 4 -	Drill Hole Locations & Zones of Known Mineralization	14
Figure 5 -	Wild Rose Zone	15
Figure 6 -	Plan View, No. 1 and No. 2 Adits	16
Figure 7 -	Total Magnetic Intensity	in pocket
Figure 8 -	Tilt Derivative of TMI, with EM conductors	in pocket
Figure 9 -	AeroTEM off-time profiles	in pocket
Figure 10 -	AeroTEM off-time, contoured	in pocket

LIST OF TABLES

		Page
Table 1 -	Claim Information	 3

LIST OF APPENDICES

Appendix 1	Cost Statement
------------	----------------

Appendix 2Report on a Helicopter-Borne AeroTEM II Electromagnetic and Magnetic Survey
Aeroquest Limited, January 2006

Appendix 3 Listing of EM conductors

1.0 SUMMARY

The Wild Rose Gold property is located about 3.5 kilometers southwest of Greenwood in southern British Columbia. The property is comprised of 2 Mineral Titles map cell claims totaling 783 hectares, that were acquired by 730821 B.C. Ltd. in 2005 under an option agreement from VentureWorks Inc. This report summarizes the results of an airborne geophysical survey completed on the property during December 2005.

The Wild Rose Gold property is an exploration stage prospect, situated within the highly mineralized Boundary District. Four zones of mineralization are known on the property. Most of the previous exploration on the property has been directed at the Wild Rose and Deadwood zones. Both of these zones are associated with the Wild Rose fault, a splay of the regional Lind Creek thrust fault.

At the Wild Rose zone, three parallel, north-northwest trending, steeply dipping gold-bearing veins occur both within the Wild Rose fault and in the hangingwall of the fault zone. The veins are typically massive pyrrhotite-pyrite-chalcopyrite veins that average 1 to 2 meters in width, although locally they are quartz veins with lesser pyrrhotite and pyrite, and with minor arsenopyrite. Considerable drilling (and underground exploration) has been done to test the veins. Some of the better drill intercepts include 2.3 meters grading 8.7 g/t Au, 2.0 meters grading 9.3 g/t Au, and 0.7 meters grading 25.7 g/t Au. The depth potential of the veins increases to the northwest, and all veins are open on strike and to depth in this direction. In addition, the ground to the northeast remains unexplored for parallel veins.

The Deadwood zone is located a few hundred meters on strike to the northwest of the Wild Rose zone and likely represents the on-strike continuation of the Wild Rose zone. The Deadwood zone is an area of silicification and widespread low-grade gold mineralization (including several high grade veins) in the hangingwall of the Wild Rose fault. Results to 63.16 meters averaging 0.95 g/t Au (including 0.15 m at 134.2 g/t Au) have been returned from drilling in this area.

Other areas of mineralization occur on the property, about which little is known. These include structurally controlled alteration and mineralization related to the Greyhound fault as well as skarn and intrusive related copper (+ gold?) mineralization. There is also potential for epithermal veining related to Eocene structures, such as at the Bengal zone on the adjoining Tam O'Shanter property. Numerous IP chargeability anomalies and areas of anomalous gold in soils on the property remain untested.

A helicopter-borne AeroTEM II (time-domain EM) and magnetometer survey was flown over the property during 2005. Major fault zones are well defined by the magnetics, and particularly by the tilt derivative of the total magnetic intensity. Three significant EM conductors were identified by the AeroTEM survey, which are untested by any of the previous work on the property. Follow-up to these target areas is a high priority. There was no conductive response associated with either the Wild Rose or Deadwood zones.

A two-phase, \$330,000 work program is recommended for the property. Phase 1 (\$150,000) consists of further ground work, including geological mapping and prospecting in the vicinity of the AeroTEM conductors and other targets defined by previous work programs on the property, and then subsequent drill testing (or trenching) of these areas. Phase 2 (\$180,000) consists of a detailed evaluation of the Wild Rose and Deadwood zones, including re-logging drill core and preparation of cross and long sections. This work should be followed by excavator trenching and diamond drilling to test any targets defined by this, or by the Phase 1 program. Phase 2 is in part contingent on the results of the Phase 1 program.

L.J. Caron, M.Sc., P.Eng. Consulting Geologist

2.0 INTRODUCTION AND TERMS OF REFERENCE

The author was retained by 730821 B.C. Ltd. to complete the following report describing a 2005 helicopter-borne AeroTEM II (time-domain EM) and magnetometer survey on the company's Wild Rose property.

2.1 **Property Description and Location**

The Wild Rose property is located approximately 3.5 kilometres southwest of Greenwood, B.C. on NTS map sheet 082E/02, as shown in Figure 1. The property is centred at latitude 49°04' 30"N and longitude 118° 43' 30"W, and covers an area of about 783 hectares.

The property consists of 2 Mineral Titles On-line (MTO) map cell claims, located on Mineral Tenure map sheet 082E.007 in the Greenwood Mining District. The claims are shown in Figure 2 and summarised below in Table 1. The locations of known mineralized zones, discussed in detail later in this report, are shown relative to the property boundary in Figure 4.

Claim Name	Tenure #	Area (Ha)	Expiry Date
Wildrose 1	516277	211.599	2014/Nov/27
Wildrose 2	508067	571.308	2014/Nov/27

Table 1: Claim Information

The cell claims have fixed UTM boundaries (see http://www.mtonline.gov.bc.ca/), however the actual property boundary does not coincide with the map cell boundary in all instances, as shown on Figure 2, because of adjoining legacy claims in good standing. In the event that any of these adjoining legacy claims expire, then the overlying cell claims that form the Wild Rose property will automatically encompass the forfeited ground.

The claims comprising the Wild Rose property are registered to Karl Schindler. Ownership of the claims has been assigned, by agreement, to VentureWorks Inc., a company owned 50% by Mr. Schindler and 50% by Mr. Donald Rippon. The property is held under option to *730821 B.C. Ltd.*, a company incorporated in B.C. with its registered office at 34a-2755 Lougheed Highway, Suite 522, Port Coquitlam, B.C. V3B 5Y9, by an agreement with VentureWorks Inc., dated August 4, 2005. Under the terms of the agreement, *730821 B.C. Ltd.* can acquire a 100% undivided interest in the property, subject to a 3% NSR payable to the vendor, in consideration for staged cash payments totaling US\$400,000 over 3 years and by incurring exploration expenses totaling US\$550,000 over a 3½ year period. The agreement also requires staged share payments to the vendor totalling 200,000 shares over a 6 month period. Shares will be issued by a third party to the agreement, Genesis Gold Corp., a company incorporated in Nevada and with its registered office also at 34a-2755 Lougheed Highway, Suite 522, Port Coquitlam, B.C. V3B 5Y9. A complete copy of the option agreement is available for review at *730821 B.C. Ltd.'s* office.

The vast majority of the Wild Rose property is underlain by crown land, although there is some private surface land in the extreme southern and eastern parts of the property. None of the known zones of mineralization or the areas of proposed work are situated on land with privately held surface rights.

L.J. Caron, M.Sc., P.Eng. Consulting Geologist





2.2 Access, Climate, Local Resources, Infrastructure and Physiography

Access to the Wild Rose property and local infrastructure are both excellent. The community of Greenwood and Highway 3, the Southern Trans Provincial Highway, are situated less than 4 kilometres northeast of the property. There is good road access to the claims from Greenwood by following the Motherlode Road for about 1.5 kilometres, then turning west (left) onto Goodeve road for approximately 1.5 kilometres to the northern property boundary. The Wild Rose workings are reached by following this same road for a further 2.5 kilometres, turning left at the sharp switchback at the 1.5 kilometre point. The Wild Rose (No. 1) adit is situated west of the road, immediately after the road crosses Haas Creek. A network of old logging roads provides good road access to most parts of the property.

Limited services, including room, board and fuel, are available in the nearby community of Greenwood (population < 700). Grand Forks, with a population of about 8,000 in the city and immediate surrounding area, is a more major supply centre. Most services needed for exploration are available in Grand Forks, located 40 kilometres east along Highway 3 from Greenwood. The closest full-service airports are located in Kelowna, Penticton or Castlegar. Power is available at Deadwood about 2 kilometres northeast of the property, and at the Bow Mines (Robert's) mill site, about 1 kilometre to the southeast.

The western part of the property is situated on a moderate to steep east facing slope, while the northern and eastern parts of the property are flat to gently sloping. Haas Creek flows east through the southern part of the claim block. Elevations ranging from about 900 metres in the eastern part of the property, to about 1370 metres at the western property boundary. The Wild Rose zone is situated at an elevation of approximately 1220 metres.

Vegetation consists of moderate to open second growth fir and larch forest, with little undergrowth. A portion of the northern part of the property has recently been selectively logged.

The climate is moderately dry, with hot summers and little rainfall. Snowfall is typically in the order of 1-2 metres and the property is generally snow free from mid April to early November. Water for drilling is available from Haas Creek (seasonally) or from drill hole 92-30 which is producing water at a sufficient rate for drilling and is situated less than 500 metres northwest of the Wild Rose zone.

2.3 History of Exploration, Wild Rose Property

Former crown grants that fall completely or partially within the current Wild Rose property are shown on Figure 4. For most of these claims, there is no documentation of any historic work completed, however regulations governing the issuing of crown grants required that development work be completed on each of these claims. Recommendations are made in Section 5.0 of this report to thoroughly prospect the property to locate any old workings on the former crown grants and to assess any mineralization that may be present, in light of new metallogenic models successfully being applied in the district.

The first recorded work on the Wild Rose Property is on the Wild Rose zone, in 1897. On the Golconda Fraction, a shaft was sunk to a depth of about 50 feet on the Shaft vein (Wild Rose zone) and the vein was traced on surface in open cuts for about 300 feet. The shaft was reported to have terminated against a fault surface (Minister of Mines Annual Report 1897). Further work was done in 1899, including deepening the shaft to 60 feet, additional surface cuts, and tunnelling (the No. 3 adit). The No. 3 adit was successful in intersecting the Shaft Vein about 50 feet in, at which point the vein was drifted on for 17 feet (Minister of Mines Annual Report 1898). In 1907 a long crosscut tunnel was driven on the Golconda Fraction (the No. 1 Adit), with the intent of intersecting the vein exposed at the shaft about 200 feet below the surface.

By 1921, the No.2 adit had been started a short distance to the northwest of the No. 1 Adit, but did not

intersect the vein. It was also reported that:

"The old shaft was sunk on a pyrrhotite-capping, which contained values on the surface of 0.78 oz in gold and 0.5 oz silver to the ton. The ore, if any, at the bottom of the shaft was not explored because of water. The open-cut showed extensive mineralization near the shaft ..." (Minister of Mines Annual Report 1921).

In 1933, a sample across 5 feet of the Shaft vein assayed 0.24 oz/t Au and 0.8 oz/t Ag. A second sample collected to the south was reported to assay 0.65 oz/t Au (Minister of Mines Annual Report 1933).

There is no record of further work done on the Wild Rose zone, until it's acquisition by Karl Schindler in 1977, at which time the Wild Rose shaft and some of the old cuts were cleaned out and re-sampled and several new trenches were dug southeast of the shaft. A chip sample across 5 feet at depth in the shaft assayed 0.258 oz/t Au (Smitheringale, 1983).

The property was optioned to Wild Rose Resources Ltd. in 1986 and a program of surface exploration was carried out, as described by Paxton (1986a, 1986b). A grid was established over an area of 950 x 1000 meters, covering the Wild Rose zone. Ground magnetometer and VLF-EM surveys were completed, and soil samples were collected at 25 meter stations on 50 meter spaced lines, and analysed for gold and silver, with every other sample analysed for arsenic. A number of areas of anomalous gold in soils were identified, as shown on Figure 4. Many of these anomalous areas remain to be followed up. Twelve short NQ diamond drill holes were then completed on the Wild Rose zone, totalling 521 meters. The drill program resulted in a number of good vein intersections, including a massive sulfide vein in hole 86-5 which ran 0.33 oz/t Au over a true width of 5.4 feet. Drill holes are plotted on Figure 5.

In 1987, Wild Rose Resources Ltd. continued exploration on the property, completing an additional 10 short diamond drill holes, totalling 546 meters on the Wild Rose zone (DiSpirito et al, 1988). This program resulted in a number of good vein intersections, including 0.255 oz/t Au over 7.5 feet from hole 87-3 and 0.273 oz/t Au over 6.5 feet in hole 87-4 (see Figure 5).

In 1991 the property was acquired by Ransburg Gold Corp. who commissioned Burton (1992) to estimate a Mineral Resource for the Wild Rose zone. Burton (1992) estimated a total resource of about 23,000 tons at an average grade of about 0.29 oz/t Au. THE READER IS CAUTIONED THAT THIS RESOURCE IS A HISTORICAL RESOURCE WHICH DOES NOT CONFORM TO CIM BEST PRACTICES GUIDELINES AND DOES NOT COMPLY WITH CATEGORIES SET OUT IN SECTIONS 1.2 AND 1.3 OF NATIONAL INSTRUMENT 43-101. Furthermore, the geometry of the veins and faults were poorly understood at the time this work was done, Only one vein was recognized, where the present interpretation suggests three discrete veins are present.

A program of trenching and diamond drilling was recommended by Burton to further test the Wild Rose zone, and was subsequently carried out. Eight short diamond drill holes (totalling 260 meters) were drilled by Ransburg Gold in 1991 as shown on Figure 5.

In 1989, Minnova Inc. optioned the Tam O'Shanter property (adjoining the Wild Rose property to the west) for it's epithermal gold potential. A grid was established over the Tam O'Shanter property, with 200 meter spaced lines. An induced polarization survey was completed over the grid, and several chargeability highs were identified. Soil geochemistry was also done, with samples collected at 50 meter intervals on 200 meter spaced lines. A number of anomalous gold (+/- copper) zones were identified, however areas of anomalous gold in soils which had been defined in the vicinity of the Wild Rose zone based on the 1986 exploration program (25 meter spaced samples on 50 meter spaced lines) were not detected on the coarser line spacing of Minnova's grid. In 1991, Minnova optioned the Wild Rose property (from Ransburg Gold) and during 1991 and 1992, completed a large drill program on the Tam O'Shanter and Wild Rose properties (Clayton,

1991, 1992a,b; Blower, 1993; Heberlein, 1993a, 1993b).

The property boundaries have changed since Minnova's work was completed. A several hundred meter wide slice of ground at the common property boundary between the Wild Rose and Tam O'Shanter properties has shifted ownership, with the Wild Rose property expanding to the west and the Tam O'Shanter property getting correspondingly smaller. A total of 22 diamond drill holes were completed on what is now the current Wild Rose property, to test areas of IP chargeability, anomalous soil geochemistry, and geological structures (see Figure 4). Detailed results are unavailable for those holes that were drilled on the former Tam O'Shanter property.

Work by Minnova resulted in the discovery of the Deadwood zone, a zone of silicification and veining along the Wild Rose fault and straddling the boundary between the Tam O'Shanter and Wild Rose properties which appears to represent the on-strike continuation of the Wild Rose zone. The focus of Minnova's work was testing for bulk tonnage targets in the hangingwall of the Wild Rose fault. One drill hole (ddh 92-41) did intersect a 1.3 meter wide vein at a depth of 120 meters (85 meter vertical depth) which returned a grade of 58 g/t Au over 0.3 m. This appears to correlate with the Wildcat vein discovered during the 1998 drifting program.

Minnova terminated their option on both the Wild Rose and Tam O'Shanter properties in 1993, and in 1995 the Wild Rose property was optioned by First Gold Resources. Following recommendations by Ash (1995), Burton (1992) and Paxton (1994), an underground program was carried out during 1997 and 1998. The No. 1 adit was rehabilitated and a program of underground drifting was initiated in an attempt to drift to the Wild Rose vein in the vicinity of the ddh 87-3 intercept (7.5 feet @ 0.255 oz/t Au). The target was not reached due to poor ground conditions which required re-routing the drift and added additional distance as well as extra costs related to ground stabilization. The spring 1998 program was successful in intersecting a previously unrecognized massive sulfide vein, the Wildcat vein, which returned an average grade of 0.352 oz/t Au and 2.2% Cu over 3.75 feet, and with assays to 0.85 oz/t Au and 5.2% Cu. The Wildcat vein is parallel to the Wild Rose vein (the target of the drifting program) and is located about 40 meters east of it.

Detailed mapping of the underground workings, as well a review of available data on the Wild Rose zone, was completed by the author during 1998. This work resulted in a new understanding of the geology and structure, and a good working model for mineralization. It is now believed that three discrete, parallel veins occur, all sitting in the hanging wall of the Wild Rose fault, as shown in the schematic section in Figure 5 (Caron, 1998a,b).

Additional claims were staked in 2002, and in early 2003, the Wild Rose property was optioned to Pine Point Mines Inc. (later Mineworks Resources Corp.). A NI 43-101 compliant technical report was prepared for Pine Point Mines in the fall of 2003 (Caron, 2003), and in 2004 a small underground drifting program was completed to extend the 1998 drift to its original target (the 87-3 drill hole intercept). A sub-drift (the Wildcat drift) was also completed in an attempt to cut the Wildcat vein on strike to the northwest from the original 1998 intercept. The No. 1 drift follows a wide, complex but generally low angle east dipping, fault zone (the Wild Rose fault zone). Ground conditions are very poor and faulting truncates and displaces mineralization. A narrow quartz-carbonate shear vein with local massive pyrite was intersected, along the same fault zone which forms the footwall to the Wildcat vein. A sample across the shear vein returned 2.74 g/t Au over a true width of 0.5 meters. The ddh 87-3 intercept was not encountered by drifting (Caron, 2004). The drill hole intercept appears to be situated only about 8 meters northwest of the end of the drift, and about 2 meters above drift level (above the flat fault intersected in the drift) however without accurate survey control it is impossible to determine it's exact location (see Figure 6). Mineworks dropped its option on the property late in 2004.

In January, 2005 a new map-based Mineral Titles system was implemented in British Columbia and the claims comprising the Wild Rose property were converted to this new system. The property was optioned by 730821 B.C. Ltd. in August 2005 and a 43-101 compliant technical report was prepared by the author (Caron, 2005).

2.4 Summary of 2005 Work Program

In December, 2005 730821 B.C. Ltd. commissioned a helicopter-borne time-domain EM (AeroTEM II) and magnetometer survey over the Wild Rose property. The survey was flown by Aeroquest Limited from December 11-17, 2005, as part of a larger (610.1 line-kilometer) survey which covered the adjoining Boundary Falls property to the south, as well as the Copper Mountain property to the northwest. A total of approximately 125 line-kilometers were flown over the Wild Rose property, with lines oriented at 072°-252°. The survey was flown with 100 meter spaced lines, and with 50 meter infill lines in the central portion of the survey area, in the vicinity of the Wild Rose and Deadwood zones. Control (tie) lines were flown perpendicular to the survey lines, at 1 kilometre intervals. The program was managed by Donald Rippon, with geological support and interpretation by Linda Caron.

3.0 GEOLOGY

3.1 Regional Geology, Structure and Metallogeny

The Wild Rose property is situated within the Boundary District of southern British Columbia and northern Washington State. This district is a highly mineralized area straddling the Canada-USA border and includes the Republic, Belcher, Rossland and Greenwood Mining Camps. It has total gold production exceeding 7.5 million ounces, the majority of which has been from the Republic and Rossland areas (Schroeter et al, 1989; Höy and Dunne, 2001; Lasmanis, 1996). At Republic, about 2.5 million ounces of gold, at an average grade of more than 17 g/t Au, has been produced from epithermal veins (Lasmanis, 1996). In the Rossland Camp, 2.8 million ounces of gold at an average grade of 16 g/t Au was mined from massive pyrrhotite-pyrite-chalcopyrite veins (Höy and Dunne, 2001). Recent exploration in the Boundary District resulted in the discovery of a number of new deposits from which more than 1 million ounces of gold has been produced to date. At present, there are no active metal mines in the district, although several deposits have been delineated but remain undeveloped.

Portions of the Boundary District have been mapped on a regional basis by numerous people, including Höy and Dunne (1997), Fyles (1984, 1990), Massey (2006), Monger (1967), Little (1957, 1961, 1983), Höy and Jackaman (2005), Church (1986), Parker and Calkins (1964), Muessig (1967) and Cheney and Rasmussen (1996). While different formational names have been used within different parts of the district, the geological setting is similar.

The Boundary District is situated within Quesnellia, a terrane which accreted to North America during the mid-Jurassic. Proterozoic to Paleozoic North American basement rocks are exposed in the Kettle and Okanogan metamorphic core complexes. These core complexes were uplifted during the Eocene, and are separated from the younger overlying rocks by low-angle normal (detachment) faults. The distribution of these younger rocks is largely controlled by a series of faults, including both Jurassic thrust faults (related to the accretionary event), and Tertiary extensional and detachment faults.

The oldest of the accreted rocks in the district are late Paleozoic volcanics and sediments. In the southern and central parts of the district, these rocks are separated into the Knob Hill Complex and overlying Attwood Formation. Rocks of the Knob Hill Complex are of dominantly volcanic affinity, and consist mainly of chert, greenstone and related intrusives, and serpentinite. The serpentinite bodies of the Knob Hill Complex represent part of a disrupted ophiolite suite which have since been structurally emplaced along Jurassic thrust faults. Commonly, these serpentinite bodies have undergone Fe-carbonate alteration to listwanite, as a result of the thrusting event. Serpentinite is also commonly remobilised along later structures. Unconformably overlying the Knob Hill rocks are sediments and volcanics (largely argillite, siltstone, limestone and andesite) of the late Paleozoic Attwood Formation.

The Paleozoic rocks are unconformably overlain by the Triassic Brooklyn Formation, represented largely by limestone, clastic sediments and pyroclastics. Both the skarn deposits and the gold-bearing volcanogenic magnetite-sulfide deposits in the district are hosted within the Triassic rocks. Volcanic rocks overlie the limestone and clastic sediments of the Brooklyn Formation and may be part of the Brooklyn Formation, or may belong to the younger (Jurassic) Rossland Group. In the western part of the district, the Permo-Triassic rocks are undifferentiated at present, and are collectively referred to as the Anarchist Group.

At least four separate intrusive events are known regionally to cut the above sequence, including the Jurassic-aged alkalic intrusives (i.e. Lexington porphyry, Rossland monzonite, Sappho alkalic complex), Triassic microdiorite related to the Brooklyn greenstones, Cretaceous-Jurassic Nelson intrusives, and Eocene Coryell (and Scatter Creek) dykes and stocks.

In the Greenwood area, Fyles (1990) has shown that the pre-Tertiary rocks form a series of thrust slices, which lie above a basement high grade metamorphic complex. A total of at least five thrust slices are recognized, all dipping gently to the north, and marked in many places by bodies of serpentine. There is a strong spatial association between Jurassic thrust faults and gold mineralization in the area.

Eocene sediments and volcanics unconformably overlie the older rocks. The oldest of the Tertiary rocks are conglomerate and arkosic and tuffaceous sediments of the Eocene Kettle River Formation. These sediments are overlain by andesitic to trachytic lavas of the Eocene Marron Formation, and locally by rhyolite flows and tuffs (such as in the Franklin Camp). The Marron volcanics are in turn unconformably overlain by lahars and volcanics of the Oligocene Klondike Mountain Formation. In the Greenwood area, three Tertiary fault sets are recognized, an early, gently east-dipping set, a second set of low angle west-dipping, listric normal (detachment-type) faults, and a late, steeply dipping, north to northeast trending set of right or left lateral or west side down normal faults (Fyles, 1990). Epithermal gold mineralization, related to Eocene structural activity, has been an important source of gold in the Boundary District.

The Tertiary rocks are preserved in the upper plates of low-angle listric normal (detachment-type) faults related to the uplifted metamorphic core complexes, in a series of local, fault-bounded grabens (i.e. Republic graben, Toroda graben) (Cheney and Rasmussen, 1996; Fyles, 1990). In the Greenwood area, a series of these low angle faults occur (from east to west, the Granby River, Thimble Mountain, Snowshoe, Bodie Mountain, Deadwood Ridge, Windfall Creek, and Copper Camp faults). These faults have taken a section of the Brooklyn stratigraphy and sliced it into a series of discrete blocks, each separated by a low angle fault. For example, the Phoenix section is rooted by the Snowshoe fault with about 1 kilometre of offset to the west on the Snowshoe fault. Overlying these rocks were rocks now exposed about 6 kilometres to the west in the Deadwood Camp in a complex zone of faulting. The Deadwood segment was in turn overlain by rocks now situated to the west above the Copper Camp fault. The low angle Tertiary faults have displaced pre-Tertiary mineralization (i.e. the Deadwood camp represents the top of the Phoenix deposit), however current thinking attributes at least some of the gold in the deposits to the low angle Tertiary faults that underlie them.

730821 B.C. Ltd. has acquired the Wild Rose property primarily as a gold exploration property. Most of the historical production and previous exploration in the Boundary District has been directed at gold or copper-gold mineralization. The important deposits can be broadly classified into six deposit types, including skarn deposits, epithermal and mesothermal veins, Jurassic alkalic intrusives related mineralization, gold mineralization associated with serpentinite, and gold-bearing volcanogenic massive sulfide/oxide mineralization. A more detailed discussion of regional styles of mineralization is contained within a NI 43-101 compliant technical report prepared by the author on the Wild Rose property (Caron, 2006).

3.2 Property Geology and Mineralization

The general geology of the Wild Rose property is shown in Figure 3. Figure 3 is based on regional mapping by Fyles (1990), with additional more detailed information compiled from Clayton (1991), Heberlein (1993a) and Caron (1998b, 2002). While most previous workers agree upon the lithologies present and their distribution, there is some disagreement as to the age of some units. These are shown with (?) on Figure 3, to indicate this uncertainty. Zones of known mineralization on the Wild Rose property are shown on Figure 4, 5 and 6.

A major east-west trending, low angle north-dipping thrust fault is present along Haas Creek in the southern part of the property and is marked by a body of serpentinite. This fault is believed to be regionally



EOCENE	LEGEND TO ACCOMPANY FIGURE 3
Epi	Coryell Intrusions Syenite, diabase and feldspar-hornblende porphyritic dykes and biotite microdiorite stocks.
Еру	Marron Formation Andesite and trachyte flows.
CRETAC	EOUS and/or JURASSIC
qd,d	Nelson Plutonic Complex Granodiorite and diorite dyke and stocks.
PERMIAN	ATTWOOD FORMATION
Paa	Attwood Sediments Black siltstone and phyllite, cherty siltstone, minor sandstone, conglomerate and greenstone.
Pal	Attwood Limestone Massive grey and white limestone, locally well bedded.
Pav	Attwood Andesitic Volcanics Andesite and greenstone.
PERMIAN	I KNOB HILL COMPLEX
Pkc	Knob Hill Chert Chert plus minor argillite, siliceous greenstone
Pkv	Knob Hill Greenstone
Pkbx	Knob Hill Chert Breccia and Conglomerate
g	Greenwood Gabbro Coarse to fine-grained gabbro laced with feldspathic veinlets (formerly referred to as "Old Diorit
sp	Serpentine and Listwanite Dark green to black, strongly magnetic, massive to strongly foliated serpentine.
FAULT	
	– Steep Dip
	 Low Angle
	— Thrust Fault
	Strike / Dip of Bedding
\boxtimes	Trench / Test Pit
	Shaft

correlative with the Lind Creek fault. The Lind Creek fault is significant in that the majority of the past gold production in the Greenwood area has been from mineralization in the upper plate of the Lind Creek thrust.

The Lind Creek fault is cut by the Greyhound fault, a late, north-south striking, steeply dipping structure with unknown displacement that runs through the centre of the property. The Greyhound fault is a major (splaying) fault structure, and is marked by a wide zone of shattering and silicification in the surrounding rocks. West of the Greyhound fault, two fault splays occur along Haas Creek, with the southern of these known as the Wild Rose fault. There is poor rock exposure near the intersection of the Greyhound and Lind Creek faults.

To the south of the Lind Creek fault and east of the Greyhound fault, a large area of Greenwood Gabbro intrusive is exposed. The Greenwood Gabbro (formerly referred to as "Old Diorite") is a medium to coarse grained massive intrusive comprised of plagioclase and green to black pyroxene (which has been extensively replaced by hornblende). The intrusive is bounded to the south by a second zone of regional thrusting, the Mount Attwood/Mount Wright fault system.

West of the Greyhound fault and in the footwall of the Wild Rose and Lind Creek faults, a large area of chert breccia and chert pebble conglomerate occurs. The chert breccia unit is shown as unit Pkbx (?) on Figure 3, in accordance with Fyles (1990), however at present there is no compelling reason to include these rocks with the Knob Hill Complex. The unit is entirely fault bounded and may in fact be younger than the Knob Hill rocks. Other workers consider these rocks to be correlative with the sharpstone conglomerate of the Triassic Brooklyn Formation (Little, 1983; Paxton, 1986b), part of the Attwood Formation (Heberlein, 1993), or even part of the Tertiary (Clayton, 1991). The chert breccia forms distinctive rusty cliffs in the southern part of the property, and is locally silicified with anomalous gold values in rocks and in soil (Lee, 1990a,b; Caron, 2002; Paxton, 1986b).

North of the Lind Creek/Wild Rose fault zone, the property is underlain primarily by Knob Hill Complex chert. The chert grades imperceptibly into siliceous greenstone and it is often difficult to separate the chert from the greenstone. A band of siltstone, tuffaceous siltstone and argillite occurs in the central part of the Wild Rose property and hosts mineralization at the Wild Rose zone (unit Paa (?) on Figure 3). It sits unconformably on Knob Hill chert and is in part overlain by limestone. This unit is tentatively assigned to the Permian Attwood Formation based on its similarity to rocks to the south on the Boundary Falls property.

A large Cretaceous-Jurassic quartz diorite to diorite intrusive of the Nelson Plutonic suite cuts the older rocks, to the north of the property. Smaller diorite intrusives within the property may be part of this same suite.

Four zones of known mineralization occur on the Wild Rose property, as described below and shown in Figure 4. The majority of previous exploration has been directed at the Wild Rose and Deadwood zones. The Wild Rose zone refers to a series of discrete, sub-parallel massive sulfide veins in the hangingwall of the Wild Rose fault. The Deadwood zone, located on strike to the northwest, is an area of silicification and widespread low-grade gold mineralization (including several high grade veins), also in the hangingwall of the Wild Rose fault and likely represents the on-strike continuation of the Wild Rose zone.

Wild Rose ZoneMinfile 082ESE116

Three parallel, north to northwest trending, steeply dipping gold-bearing veins occur on the Golconda Fr. reverted crown grant. These veins are collectively known as the Wild Rose zone (see Figures 4, 5 & 6).







Mineralization is consistent with a Rossland vein model, as described by Alldrick (1996) and Höy and Dunne (2001). The Wild Rose veins are massive pyrrhotite-pyrite-chalcopyrite veins, and locally quartz veins with lesser pyrrhotite and pyrite, and with arsenopyrite. Vein widths are in the order of 1-2 meters.

Most of the previous exploration of the zone was based upon the assumption that a single vein was present. Detailed underground mapping combined with a review of previous drilling suggests that three discrete, parallel veins occur in the hanging wall of the Wild Rose fault, or within the fault zone itself, as shown in the schematic section in Figure 5. The failure of a number of drill holes to intersect veins has in many instances been the result of drilling through the Wild Rose fault before reaching the assumed location of the vein. No veins have been discovered to date within the footwall of the fault.

In the vicinity of the Wild Rose zone, the most abundant lithology in the hangingwall of the fault is a fine grained felsic tuff with minor interbedded chert. The tuffaceous rocks are typically strongly altered to sericite and chlorite, and locally sulfidic with up to 15% veinlets and disseminated pyrite and pyrrhotite. The Wild Rose fault itself is marked by a wide zone of mixed rock types, including abundant Tertiary dykes. The rocks in the footwall of the fault are unaltered chert pebble conglomerate, sandstone and siltstone, tentatively assigned to the Knob Hill Complex (unit Pkbx on Figure 3).

The western most vein, the Shaft vein, is exposed in a series of trenches, in the Wild Rose shaft, and in the No. 3 adit. The Minister of Mines Annual Report for 1921 states that "*The old shaft was sunk on a pyrrhotite-capping, which contained values on the surface of 0.78 oz in gold and 0.5 oz silver to the ton.*" In 1933, a sample across 5 feet of the Shaft vein assayed 0.24 oz/t Au and 0.8 oz/t Ag. A second sample collected to the south assayed 0.65 oz/t Au (Minister of Mines Annual Report 1933). In 1977, the shaft and some of the old cuts were cleaned out and re-sampled and several new trenches were dug southeast of the shaft. A chip sample across 5 feet in the shaft assayed 0.258 oz/t Au (Smitheringale, 1983). Both the shaft and the Shaft vein bottom on the Wild Rose fault, as shown in the schematic cross section in Figure 5. The No. 1 adit, originally driven to cut the Shaft vein at depth, was unsuccessful in intersecting the vein since the adit passed into the footwall of the Wild Rose fault before reaching the projected position of the vein (see also Figure 6).

The Wild Rose vein, roughly parallel to and situated northeast of the Shaft vein, has been intersected in drilling to the northeast of the Shaft vein. Some of the better drill intercepts include:

86-5 5.5 feet @ 0.33 oz/t Au, 0.47 oz/t Ag
86-8 5.0 feet @ 0.17 oz/t Au, 0.17 oz/t Ag
86-12 5.0 feet @ 0.27 oz/t Au, 0.22 oz/t Ag
87-3 7.5 feet @ 0.255 oz/t Au, 0.389 oz/t Ag, 3807 ppm Cu

Additional drill information is tabulated in Caron (2006).

During 1998 and 2004, the No. 1 adit was extended in an attempt to intersect the Wild Rose vein, in the vicinity of the drill hole 87-3 intercept. From the point where the No. 1 adit veers to the northwest from the original drift, it follows the Wild Rose fault zone, a wide, complex but generally low angle east-dipping, fault zone in which ground conditions are very poor (Caron, 2004). The ddh 87-3 intercept has not been encountered in the drift, but, based on information from drilling, appears to be situated only about 8 meters northwest of the end of the drift, and about 2 meters above drift level (above the Wild Rose fault zone, see Figure 6). Accurate survey control is needed to determine it's exact location. Alternately, underground percussion drilling could attempt to locate the vein.

The Wildcat vein is parallel to the Wild Rose vein, and situated about 40 meters to the east. It is exposed in

the No. 1 adit, where panel sampling by the author in 1998 returned an average grade of 0.352 oz/t Au over a true width of 3.75 feet (Caron, 1998b). Grab samples from the vein ran up to 0.85 oz/t Au and to 5.2% Cu. The Wildcat vein has also been intersected in drilling. Two of the better intercepts are as follows:

87-4 6.5 feet @ 0.273 oz/t Au, 0.15 oz/t Ag

92-41 0.7m @ 25.7 g/t Au, incl. 0.3m @ 58.46 g/t Au

A narrow quartz-carbonate shear vein with local massive pyrite was intersected in the 2004 drifting program, along the same fault zone which forms the footwall to the Wildcat vein. A sample across the shear vein returned 2.74 g/t Au over a true width of 0.5 meters (Caron, 2004).

A total of 33 diamond drill holes have been drilled to test the Wild Rose zone. Neither the Wild Rose nor the Wildcat vein is exposed on surface. A trenching program is recommended to provide surface exposures of both veins for geological and metallurgical purposes.

The depth potential of the veins increases to the northwest, and all veins are open on strike and to depth in this direction. Furthermore, the ground to the northeast remains unexplored for the possibility of additional parallel veins. In addition to the veins, there is potential for bulk tonnage mineralization in the Wild Rose zone, similar to Deadwood zone to the northwest. Anomalous gold was returned from highly altered, sulfidic tuff with stockworking sulfide veinlets in hole 86-9 (5 feet @ 0.049 oz/t Au). In most cases, similar looking rock in drill core from the Wild Rose zone is unsplit and unassayed.

Deadwood Zone

The Deadwood zone is a northwest trending zone of silicification and quartz veining within Knob Hill chert and greenstone and within diorite in the hangingwall of the Wild Rose fault. The zone straddles the boundary between the Tam O'Shanter and Wild Rose properties and likely represents the on-strike continuation of the Wild Rose zone. Minnova did considerable drilling in this area during 1991 and 1992, both on the Wild Rose property and on the adjoining Tam O'Shanter property. This included 11 drill holes on the current Wild Rose property. These holes are shown in Figure 4. Complete drill results are unavailable for holes drilled on the current or former Tam O'Shanter property.

The focus of Minnova's work was testing for bulk tonnage targets in the hangingwall of the Wild Rose fault. Several narrow high grade veins were intersected in the drilling. Significant results from drilling the Deadwood zone on the Wild Rose property include:

ddh 92-2763.16 m averaging 0.95 g/t Au (including 0.15 m @ 134.2 g/t Au)ddh 91-1626.15 m averaging 0.754 g/t Au (including 5.51 m @ 2.5 g/t Au)ddh 92-311.03 m @ 25.1 g/t AuAdditional drill information is tabulated in Caron (2006).

Ladoga Zone

An adit and several pits are reported in an area of complex faulting and associated silicification west of the Greyhound fault (Clayton, 1991). These workings are situated on the former Sam 6 claim in the vicinity of the former Ladoga crown grant. The area is underlain by strongly brecciated, pyritic Knob Hill chert and greenstone, and by diorite. A strong IP chargeability anomaly is associated with the Ladoga zone; a gold soil anomaly also occurs in this area (Blower, 1993). Several rock samples collected from this area returned significantly anomalous barium (to 2313 ppm) as well as elevated arsenic (to 279 ppm) and copper (to 2557 ppm). Three drill holes were drilled by Minnova to test the Ladoga zone, as shown on Figure 5. Drilling showed numerous fault zones, typically marked by serpentinite or by graphite, and confirmed the anomalous barium, with values locally exceeding 10,000 ppm Ba, and locally anomalous copper (to 2353 ppm Cu). Narrow zones of semi-massive pyrite were also intersected.

Drilling also showed that sandstone and chert pebble conglomerate (possibly unit Pkbx) are present at depth. The 2005 AeroTEM II survey identified a north trending conductor in the vicinity of the Ladoga zone, as discussed in Section 4.0 of this report. Further work is required to test this target.

Bitt Zone

An old shaft of unknown depth has been developed on a zone of garnet skarn and associated quartz veining near the faulted contact between limestone and diorite, near the boundary of the former Bitt and Nick 1 claims. A single sample was collected from this zone by Clayton (1991) which returned 22.2 ppm Ag, 40,257 ppb Pb, and 1029 ppm Zn. There is no further documentation of this zone

Several other areas of mineralization are referenced by former workers, about which little information exists. Burton (1992) references boulders of mineralized skarn float found on the former Sam claims, with values to 0.023 oz/t Au and 1.12% Cu, and Smitheringale (1983) reports "vein material was unearthed in the process of laying a water line near the southeast corner of the Bell claim." Clayton (1991) references a gossan zone in a road cut in the vicinity of drill hole 91-23, which contained a chalcopyrite vein that assayed 27% copper, that may be part of the Toney zone on the adjoining Toney crown grant. There is no information as to the size or orientation of the vein, nor the host rocks. Recommendations are made in Section 5.0 to thoroughly prospect the Wild Rose property to locate these areas of mineralization, as well as other old workings and mineralized zones that may be situated on former crown grants.

4.0 **GEOPHYSICS**

In December, 2005 730821 B.C. Ltd. commissioned an airborne time-domain EM and magnetometer survey over the Wild Rose property. The survey was flown by Aeroquest Limited from December 11-17, 2005, as part of a larger (610.1 line-kilometer) survey which covered the adjoining Boundary Falls property to the south, as well as the Copper Mountain property to the northwest. A total of approximately 125 line-kilometers were flown over the Wild Rose property, with lines oriented at 072°-252°. The survey was flown with 100 meter spaced lines, and with 50 meter infill lines in the central portion of the survey area, in the vicinity of the Wild Rose and Deadwood zones. Control (tie) lines were flown perpendicular to the survey lines, at 1 kilometre intervals.

Technical details regarding survey and equipment specifications and data processing are included in a separate report prepared by Aeroquest, which is included as Appendix 2.

Total magnetic intensity is shown on Figure 7 and a tilt derivative map of the total magnetic intensity is included as Figure 8. EM conductors are shown on both Figures 7 and 8. Figures 9 and 10 show further details regarding the AeroTEM conductors. Off-time profiles are shown in Figure 9, while a contour plot of off-time response in included as Figure 10. Discrete conductors identified from the above maps are also shown, relative to geology and zones of known mineralization, on Figures 3 and 4. A listing of conductors is included as Appendix 3, which gives UTM coordinates, as well as other information, about the specific targets.

The major fault zones on the property (Lind Creek and Greyhound faults) are well defined by the magnetic response and particularly on the tilt derivative of the total magnetic intensity (see Figure 8). The sharp western boundary of a prominent north trending magnetic high through the centre of the property corresponds to the Greyhound fault while the Lind Creek fault is depicted by an east-west trending mag high zone along Haas Creek. A well defined arcuate mag high zone in the southern part of the property (and on the Boundary Falls property to the south) defines the Mount Attwood/Mount Wright fault system. West of the property boundary, a prominent north-northwest trending mag low response corresponds with the Deadwood Ridge fault and the eastern boundary of the Toroda graben.

Three conductors of interest were identified on the property, labelled as Anomaly A, B and C on Figures 3, 4 and 8. There was no conductive response associated with either the Wild Rose or Deadwood zones.

Anomaly A occurs in the footwall of the Lind Creek fault, approximately 250 meters east-southeast of the Wild Rose Zone. The anomaly consists of two discrete conductors, or possibly a single conductive unit offset by faulting, over a strike length of about 350 meters. It is best developed near the southern end of the southern conductive segment. The zone is weakly conductive, with a corresponding mag high response. It is north-northeast trending and appears to dip shallowly to the west. Anomaly A is situated within an area regionally considered to underlain by sediments (including argillite) of the Permian Attwood Formation (as shown on Figure 3). Clayton (1991) has mapped a sharp north trending gully, interpreted as a fault zone, at the location of Anomaly A. No outcrop is shown on Clayton's map of this area, although approximately 100 meters to the west (uphill) several small outcrops of diorite (or andesite?) are noted, along with a bedding (?) attitude of $022^{\circ}/40^{\circ}$ W. The interpreted orientation of the conductor supports a bedding parallel conductive zone. The northern part of Anomaly A corresponds to an IP chargeability anomaly, as well as an area of anomalous gold in soils. This is a high priority for follow-up.

Anomaly B is a weakly conductive, northwest trending EM anomaly, situated along the western flank of a mag high response in the central part of the property. The anomaly is comprised of 3 discrete parallel

to sub parallel segments which occur along the regional north-trending Greyhound fault zone, and immediately east-southeast of drill holes 91-14 and 92-45 (drilled to test the southern end of the Ladoga zone). The EM response suggests a thick conductive area, rather than a discreet thin source. A westerly dip is implied. The area is marked by a strong IP chargeability anomaly, as shown in Figure 4. Previous drilling in this area intersected diorite, as well as strongly brecciated, pyritic Knob Hill chert and greenstone, and showed numerous fault zones marked by serpentinite or by graphite. Significantly anomalous values of barium, arsenic and copper were obtained from rock and drill core samples from the area, and several narrow zones of semi-massive pyrite were intersected in drilling. Although the presence of graphite in this area may explain the conductive response, additional drilling is warranted southeast of drill hole 92-45 to test Anomaly B. It should be noted that hole 92-45 is a poor test of the conductor, being a west directed hole which drilled both away from the EM conductor and sub parallel to its assumed dip.

Anomaly C is situated in the extreme southeast corner of the Wild Rose property, and straddles the boundary with the adjoining Boundary Falls property to the south (on which 730821 B.C. Ltd. has a first right of refusal). Two north-trending moderate to strong conductors were defined. The western anomaly has a strike length of about 200 meters, and coincides with a pronounced north trending mag low (which is suggestive of a previously unrecognized north-trending fault zone). The eastern anomaly is of similar length and similarly associated with a zone of low magnetic response (although less pronounced in this case). The western conductor suggests a variably thin to thick, west dipping source, while the eastern conductor is suggestive of a thick source, possibly a conductive sedimentary package, and has similar west dip. The conductors are situated in the footwall of the Lind Creek fault and appear to be truncated by the fault. Regional mapping indicates that this area is underlain by Knob Hill chert, near the contact with a large body of Greenwood Gabbro. Regional bedding is northeast with a moderate to shallow northwest dip. There is no previous exploration known in the immediate vicinity, although several old workings are known to the north, which explore quartz veins on Kettle River Resources' Haas Creek property. Anomaly C is a high priority for follow-up. It should be recognized that this cannot be accomplished without also working on the adjoining Boundary Falls property.

5.0 **RECOMMENDATIONS**

A two phase work program is recommended for the Wild Rose property, with a total budget of \$330,000. Phase 1 (\$150,000) consists of further ground work, including geological mapping and prospecting in the vicinity of the AeroTEM conductors, and in other areas of interest defined by previous work programs on the property. Drilling and possibly excavator trenching should then be done to test these targets. Phase 2 (\$180,000) consists of a detailed evaluation of the Wild Rose and Deadwood zones, including re-logging drill core and preparing cross and long sections through the zones. This should be followed by excavator trenching or diamond drilling to test targets defined by this work, or by the Phase 1 program. Phase 2 is in part contingent on the results of the Phase 1 program.

Phase 1 (\$150,000)

In light of new metallogenic models being successfully applied in the Boundary District, detailed prospecting is recommended to relocate old showings on former crown grants on the Wild Rose property and to assess any mineralization which may be present. Numerous gold soil anomalies from geochemical surveys by Minnova in 1991 and by Wild Rose Resources in 1986 remain to be followed up. The raw geochemical data for the Minnova survey should be obtained and any areas of anomalous gold in soils should be ground located and assessed during Phase 1. Prospecting and detailed geological mapping is also recommended in the vicinity of the AeroTEM conductors identified by the 2005 airborne survey, to prepare these targets for drill testing.

A program of diamond drilling, to test the AeroTEM conductors is then recommended. Specific drill hole locations will be identified during the Phase 1 program. A total of approximately 1,000 meters of drilling is proposed. Depending on the results of prospecting and mapping, excavator trenching may also be advisable to follow-up zones of interest. Phase 1 is expected to take 2 to 3 months to complete, depending on permitting and on staffing and equipment availability.

Phase 1 Budget:	
Prospecting, geological mapping, rock sampling	\$ 30,000
Drilling 1,000 m NQ, including logging, sampling & analytical costs	\$ 100,000
Reporting	\$ 10,000
Project Management	<u>\$ 10,000</u>
TOTAL PHASE 1:	\$150,000

Phase 2 (\$180,000)

The Phase 2 program is designed to further explore the Wild Rose and Deadwood zones. Detailed geological mapping is recommended in this area, prior to any further drilling or underground work in this area. Available drill core should also be re-examined, with particular attention to structure. This information should then be compiled onto a series of sections so that specific drill (or trench) targets can be identified. That said, given the proximity of the No. 1 drift to the 87-3 drill hole intercept, several short underground percussion holes could perhaps be justified to better assess this target.

Trenching is recommended to provide surface exposures of the Wild Rose and Wildcat veins for a better understanding of geological and structural controls and for detailed sampling for grade control. Fresh surface exposures of the veins could also be used to collect samples for metallurgical testing. Some trenching of targets generated by the Phase 1 prospecting program could also be included in this program, if supported by preliminary work.

A program of diamond drilling, to test the Wild Rose zone (and other targets resulting from the Phase 1 work program) is then recommended. A total of approximately 1,000 meters of drilling is proposed for

Phase 2.

Phase 2 Budget:	
Re-log Wild Rose zone drill core, develop drill sections	\$ 10,000
Underground percussion drilling	\$ 25,000
Excavator trenching (500 meters)	\$ 25,000
Drilling 1,000 m NQ, including logging, sampling & analytical costs	\$100,000
Reporting	\$ 10,000
Project Management	\$ 10,000
TOTAL PHASE 2:	\$180,000

6.0 **REFERENCES**

Alldrick, D. J., 1996.

Intrusion-related Au Pyrrhotite Veins, in Selected British Columbia Mineral Deposit Profiles, Volume 2 - Metallic Deposits, Lefebure, D.V. and Höy, T, Editors, British Columbia Ministry of Employment and Investment, Open File 1996-13, pages 57-58.

Ash, W., 1995.

Property Evaluation Report on the Wild Rose Gold Property, Greenwood, B.C., for First Gold Resources Corp., November 10, 1995.

Blower, S.J., 1993.

Assessment Report on the 1992 Diamond Drilling Program, Wild 92 Group, by Minnova Inc. for Randsburg Gold Corp., January 1993.

Burton, A., 1992.

Report on the Wild Rose Gold Property, Greenwood Mining Division, for Randsburg Gold Corporation. Report dated November 19, 1991, amended June 30, 1992, amended August 20, 1992.

Caron, L., 1998a.

Wildrose Project - Program Summary, Underground Drifting, February - April 1998, for First Gold Resources Inc.

Caron, L., 1998b.

Wildrose Property - Summary Report, for Donald Rippon, October 1998.

Caron, L., 2002.

Bow Mines Property - Summary of June 2002 Fieldwork - Prospecting and Rock Sampling, for InvestNet Inc., July 4, 2002.

Caron, L., 2003.

Technical Report on the Wild Rose Property, Boundary District, for Pine Point Mines Inc., October 13, 2003.

Caron, L., 2005.

Technical Report on the Wild Rose Property, Boundary District, for 730821 B.C. Ltd., August 5, 2005.

Caron, L., 2006.

National Instrument 43-101 Technical Report on the Wild Rose Gold Property, Boundary District, for 730821 B.C. Ltd., March 28, 2006.

Cheney, E.S. and M.G. Rasmussen, 1996.

Regional Geology of the Republic Area, in Washington Geology, vol.24, no. 2, June 1996.

Church, B.N., 1986.

Geological Setting and Mineralization in the Mount Attwood-Phoenix area of the Greenwood Mining Camp. BCDM Paper 1986-2.

Clayton, C.J., 1991.

Tam O'Shanter - Wild Rose geology map, 1:2500 scale, (August 1991), Tam O'Shanter & Wild Rose Properties, 1991 Drilling & Chargeability Plan, and Tam 91 Grid Geology and Soil Geochemistry, page sized plan maps (1:20,000 scale), plus drill logs, miscellaneous memos, sketches, for Minnova Inc.

Clayton, C.J., 1992a.

Assessment Report on 1991 Drilling on the Tam 91 Group near Greenwood, B.C., for Minnova Inc., January 1992. Assessment Report 22,170.

Clayton, C.J., 1992b.

Assessment Report on 1991 Drilling on the Wild Rose Group near Greenwood, B.C., for Minnova Inc., October 1992. Assessment Report 22,600.

DiSpirito, F. and W. Lumley, 1988.

Report on the Wild Rose Claim Group, Greenwood Mining Division, for Wild Rose Resources Ltd., January 8, 1988. Assessment Report 17,270.

Fyles, J.T., 1984.

Geological Setting of the Rossland Mining Camp, BCDM Bulletin 74.

Fyles, J.T., 1990.

Geology of the Greenwood-Grand Forks Area, British Columbia, NTS 82E/1,2. B.C. Geological Survey Branch Open File 1990-25.

Heberlein, D., 1993a.

Tam O'Shanter Property Geology Map, 1:5,000 scale (March 1993), various drill logs, rock sample results, for Minnova Inc.

Heberlein, D., 1993b.

Assessment Report on the 1992 Diamond Drilling Program, Tam 93 Group, Greenwood Mining Division, for Minnova Inc., May 1993. Assessment Report 22,914.

Höy, T. and K. Dunne, 1997.

Early Jurassic Rossland Group, Southern British Columbia, Part I - Stratigraphy and Tectonics. Ministry of Energy and Mines Bulletin 102.

Höy, T. and K. Dunne, 2001.

Metallogeny and Mineral deposits of the Nelson-Rossland Map Area: Part II: The Early Jurassic Rossland Group, Southeastern British Columbia. Ministry of Energy and Mines Bulletin 109.

Höy, T. and W. Jackaman, 2005.

Geology and Mineral Potential of the Grand Forks Map Sheet (082E/01), Southeastern British Columbia, *in* Geological Fieldwork 2004, Ministry of Energy and Mines Paper 2005-1, p.225-230.

Lasmanis, R., 1996.

A Historical Perspective on Ore Formation Concepts, Republic Mining District, Ferry County, Washington, *in* Washington Geology, Vol.24, No.2, June 1996.

Lee, L., 1990a.

Geology, Geochemistry and Geophysical Report on the Tam 90 Group, for Minnova Inc., November 16, 1990. Assessment Report 20,588.

Lee, L., 1990b.

Geochemical Report on the Min, Horn, Hide and Tam Claims, for Minnova Inc., November 30, 1990. Assessment Report 21,077.

Little, H.W., 1957.

Geology - Kettle River (East Half), GSC Map 6-1957.

Little, H.W., 1961.

Geology - Kettle River (West Half), GSC Map 15-1961.

Little, H.W., 1983.

Geology of the Greenwood Map area, British Columbia. GSC paper 79-29.

Massey, N.W.D., 2006.

Boundary Project: Reassessment of Paleozoic Rock Units of the Greenwood Area (NTS 82E/02), Southern British Columbia, *in* Geological Fieldwork 2005, Ministry of Energy and Mines Paper 2006-1, p.99-107.

Minfile 082ESE116 (Golconda Fr.) www.em.gov.bc.ca/Mining/GeolSurv/Minfile

Minister of Mines Annual Reports for the Province of B.C.

1896 p.577; 1897 p.587; 1898 p.1125; 1899 p.849; 1901 p.1230; 1902 p.180, 304, 306; 1906 p.253; 1907 p.111; 1921 p.186; 1933 p.161, 1967 p.225-6.

Monger, J.W.H., 1967.

Early Tertiary Stratified Rocks, Greenwood Map-Area (82 E/2) British Columbia. Geological Survey of Canada Paper 67-42.

Muessig, S., 1967.

Geology of the Republic Quadrangle and a Part of the Aeneas Quadrangle, Ferry County, Washington, USGS Bulletin 1216.

Parker, R.L. and J.A. Calkins, 1964.

Geology of the Curlew Quadrangle, Ferry County, Washington. USGS Bulletin 1169.

Paxton, J., 1986a.

Geological Report on the Wild Rose Property, Greenwood Mining Division, British Columbia, for Wild Rose Resources Ltd., July 21, 1986.

Paxton, J., 1986b.

The 1986 Wild Rose Exploration Program, for Wild Rose Resources Ltd., December 1986.

Paxton, J., 1994.

Proposed Mine Development and Exploration on the Wild Rose Property, Greenwood B.C., for 593749 Alberta Limited, December 20, 1994.

Schroeter, T.G, C. Lund and G. Carter, 1989.

Gold Production and Reserves in British Columbia. Ministry of Energy, Mines and Petroleum Resources, Open File 1989-22.

Smitheringale, W.G., 1983.

Geological Report on the Wild Rose Property, Greenwood Mining Division, British Columbia, for Silver Hoarde Resources Inc., June 3, 1983.

7.0 STATEMENT OF QUALIFICATIONS & SIGNATURE PAGE

I, Linda J. Caron, certify that:

- 1. I am an independent consulting geologist residing at 717 75th Ave (Box 2493), Grand Forks, B.C., V0H 1H0
- 2. I obtained a B.A.Sc. in Geological Engineering (Honours) in the Mineral Exploration Option, from the University of British Columbia (1985) and graduated with an M.Sc. in Geology and Geophysics from the University of Calgary (1988).
- 3. I have practised my profession since 1987 and have worked in the mineral exploration industry since 1980. Since 1989, I have done extensive geological work in Southern B.C. and particularly in the Greenwood Grand Forks area, both as an employee of various exploration companies and as an independent consultant.
- 4. I am a member in good standing with the Association of Professional Engineers and Geoscientists of B.C. with professional engineer status.
- 5. I have no direct or indirect interest in the property described herein, or in the securities of 730821 B.C. Ltd. or of Genesis Gold Corp. nor do I expect to receive any. I am a Qualified Person and independent of both 730821 B.C. Ltd. and Genesis Gold Corp., as defined by National Instrument 43-101.

Dated at Grand Forks, B.C., this 28th day of March, 2006.

Linda Caron, M.Sc., P. Eng.



APPENDIX 1

Cost Statement

COST STATEMENT

Labour	
Linda Caron, Geologist 5 days @ \$535/day	\$ 2,675.00
Survey layout, data analysis, report preparation	
Donald Rippon, Project Manager	\$_1,500.00
	\$ 4,175.00
Geophysics	
Aeroquest Limited, Milton, Ontario	\$15.049.80
125 line kilometers helicopter-borne magnetic and AeroTEM II,	
including maps and reporting	
meraamy miles and reporting	
Expenses	
Helicopter fuel	\$ 700.00
Helicopter pad rental	120.00
Travel expenses - Project Manager	1,000.00
Meals and Accommodation	796.00
Vehicle rental	200.00
Report costs - drafting, copying, binding, plotting	
	\$ 3.141.00
	,

TOTAL: \$22,365.80

APPENDIX 2

Report on a Helicopter-Borne AeroTEM Electromagnetic & Magnetometer Survey by Aeroquest Limited Report on a Helicopter-Borne AeroTEM II Electromagnetic & Magnetometer Survey



Aeroquest Job # 05051 Wild Rose Project Copper Camp Project Greenwood Area, British Columbia 53C/07

for

730821 B.C. Ltd.

Suite 522 – 34a 2755 Lougheed Highway Port Coquitlam, B.C. Canada V3B 5Y9

by

EAEROQUEST LIMITED

4-845 Main Street East Milton, Ontario, L9T 3Z3 Tel: (905) 693-9129 Fax: (905) 693-9128 www.aeroquestsurveys.com January, 2006

= AEROQUEST LIMITED

845 Main St. East, Unit #4 Milton, Ontario, Canada L9T 3Z3

1. TABLE OF CONTENTS

1. TA	BLE OF CONTENTS	1
1.1.	List of Figures	2
1.2.	Appendices	2
1.3.	List of Maps (1:10,000)	2
2. INT	FRODUCTION	3
3. SU	RVEY AREA	3
4. LO	CAL GEOLOGY & PREVIOUS WORK	6
4.1.	Property	6
4.2.	Ownership	6
4.3.	Geology	7
5. SU	RVEY SPECIFICATIONS AND PROCEDURES	7
5.1.	Navigation	8
5.2.	System Drift	8
5.3.	Field QA/QC Procedures	8
6. AIF	RCRAFT AND EQUIPMENT	8
6.1.	Aircraft	8
6.2.	Magnetometer 1	0
6.3.	Electromagnetic System 1	0
6.4.	AERODAS Acquisition System 1	0
6.5.	RMS DGR-33 Acquisition System 1	1
6.6.	Magnetometer Base Station 1	2
6.7.	Radar Altimeter 1	2
6.8.	Video Tracking and Recording System 1	2
6.9.	GPS Navigation System1	3
6.10.	Digital Acquisition System 1	4
7. PEI	RSONNEL1	4
8. DE	LIVERABLES1	4
9. DA	TA PROCESSING AND PRESENTATION 1	5
9.1.	Base Map 1	5
9.2.	Flight Path & Terrain Clearance 1	5
9.3.	Electromagnetic Data 1	5
9.4.	Magnetic Data1	6
10. F	RESULTS and INTERPRETATION 1	17
10.1.	Magnetic Response 1	17
10.2.	EM Anomalies – General Comments 1	8
10.3.	EM Anomalies -Interpretation	20

EAEROQUEST LIMITED

845 Main St. East, Unit #4 Milton, Ontario, Canada L9T 3Z3

1.1. List of Figures

Figure 1. Regional location map of the project area.	. 4
Figure 2. Copper Camp Project Flight Path and Mining Claims.	. 5
Figure 3. Wildrose Project Flight Path and Mining Claims	. 6
Figure 4. Survey helicopter C-GPTY.	. 9
Figure 5. The magnetometer bird (A) and AeroTEM II EM bird (B)	. 9
Figure 6. AeroTEM II Instrument Rack	10
Figure 7. Schematic of Transmitter and Receiver waveforms	13
Figure 8. AeroTEM response to a 'thin' vertical conductor	18
Figure 9. AeroTEM response for a 'thick' vertical conductor	19
Figure 10. AeroTEM response over a 'thick' dipping conductor	19

1.2. Appendices

Appendix 1: Survey Block Co-ordinates

Appendix 2: Description of Database Fields

Appendix 3: Technical Paper: "Mineral Exploration with the AeroTEM System"

Appendix 4: Instrumentation Specification Sheet

1.3. List of Maps (1:10,000)

Total Magnetic Intensity (TMI) with line contours and EM anomalies

Tilt Derivative of TMI with EM anomalies

Z component off-time EM profiles and EM anomalies

Off-time Z-component channel 1 with contours and EM anomalies

2. INTRODUCTION

This report describes a helicopter-borne geophysical survey carried out on behalf of 730821 B.C. Ltd. on the Copper Camp and Wild Rose Project areas, Greenwood area, southern British Columbia.

The principal geophysical sensor is Aeroquest's exclusive AeroTEM II helicopter time domain electromagnetic (HTEM) system which is employed in conjunction with a high-sensitivity cesium vapour magnetometer. Ancillary equipment includes a real-time differential GPS navigation system, radar altimeter, video recorder, and a base station magnetometer.

The total coverage over the two survey blocks is 610.1 line-km. The coverage on the Wild Rose survey is 306.4 line-km and the Copper Camp survey is 303.7 line-km. The survey flying described in this report took place between December 11 and December 17, 2005.

The survey was successful in mapping the conductive and magnetic properties of the survey areas and in identifying prospective targets for follow-up.

3. SURVEY AREA

The project areas are situated in southern British Columbia, approximately 75 km southeast of Penticton and 75 km west of Trail not far north of the U.S. border (Figure 1). The field crew was based in Greenwood for the duration of the survey. The properties are both accessible by all-weather roads.





Figure 1. Regional location map of the project area.





Figure 2. Copper Camp Project Flight Path and Mining Claims.





Figure 3. Wildrose Project Flight Path and Mining Claims.

4. LOCAL GEOLOGY & PREVIOUS WORK

4.1. Property

The Wild Rose property is centred approximately 3 km southwest of Greenwood, B.C. and is accessible by road. The Copper Camp property is centred approximately 9 km northwest of Greenwood. Access to the properties is good by all-weather road.

4.2. Ownership

The Wild Rose property is comprised of 2 Mineral Titles map cell claims totaling 783 hectares, that were acquired by 730821 B.C. Ltd in 2005 under option from VentureWorks Inc. The Copper Camp property is also owned by 730821 B.C. Ltd.

4.3. Geology

The properties are situated in the Boundary District of southern B.C. and northern Washington State. The area has a long history of exploration supported by numerous deposits and mines.

The area sits within the Quesnellia terrane, which accreted onto North America in the mid-Jurassic. The oldest rocks of this terrane are late Paleozoic volcanics and sediments. Common lithologies of this terrane are chert, greenstone and related intrusives, serpentinite, argillite, siltstone, limestone and andesite. Unconformably overlying these older units are rocks of the Triassic Brooklyn Formation. Common lithologies are limestone, clastic sediments and pyroclastics.

Both the skarn deposits and the gold-bearing volcanogenic magnetite-sulphide deposits in this area are hosted within the Triassic rocks.

Four known intrusive events have cut the sequence – Jurassic alkalic intrusions, Triassic microdiorite, Cretaceous-Jurassic intrusives, and Eocene dykes and stocks.

In the Greenwood area, the pre-Tertiary rocks form a series of thrust slices which dip gently to the north and which often have associated serpentinite. There is a strong spatial association between these thrust faults and gold mineralization in this area. In addition, three Tertiary fault sets are recognized – an early shallow easterly dipping set, a shallow westerly dipping set, and a late steep dipping north to northeast trending set. Epithermal gold mineralization related to Eocene structural activity is important in the area.

5. SURVEY SPECIFICATIONS AND PROCEDURES

Survey Block	Line Spacing (m)	Line direction	Total Coverage (line-km)	Dates Flown
Wild Rose	50/100	72°	306.4	December 11 to 17, 2005
Copper Camp	50/100	115°	303.7	December 11 to 17, 2005

The survey specifications are summarized in the following table:

The survey coverage was calculated by adding up the along-line distance of the survey lines and control (tie) lines as presented in the final Geosoft database. The survey was flown with a line spacing of 100 m with infill coverage at 50 m over portions of the survey areas. The control (tie) lines were flown perpendicular to the survey lines with a spacing of 1 km. The nominal EM bird terrain clearance is 30m (98 ft), but can be higher in more rugged terrain. The magnetometer sensor is mounted in a smaller bird connected to the tow rope 17 metres above the EM bird and 19 metres below the helicopter.

The nominal survey speed over relatively flat terrain is 75 km/hr and is generally lower in rougher terrain. Scan rates for ancillary data acquisition is 0.1 second for the magnetometer and altimeter, and 0.2 second for the GPS determined position. The EM data is acquired as a data stream at a sampling rate of 38,400 samples per second and is processed to generate final data at 10 samples per second.



The 10 samples per second translates to a geophysical reading about every 1.5 to 2.5 metres along the flight path.

5.1. Navigation

Navigation is carried out using a GPS receiver, an AGNAV2 system for navigation control, and an RMS DGR-33 data acquisition system which records the GPS coordinates. The x-y-z position of the aircraft, as reported by the GPS, is recorded at 0.2 second intervals. The system has a published accuracy of under 3 metres. A recent static ground test of the Mid-Tech WAAS GPS yielded a standard deviation in x and y of under 0.6 metres and for z under 1.5 metres over a two-hour period.

5.2. System Drift

Unlike frequency domain electromagnetic systems, the AeroTEM© II system has negligible drift due to thermal expansion. The operator is responsible for ensuring the instrument is properly warmed up prior to departure and that the instruments are operated properly throughout the flight. The operator maintains a detailed flight log during the survey noting the times of the flight and any unusual geophysical or topographic features. Each flight included at least two high elevation 'background' checks. During the high elevation checks, an internal 5 second wide calibration pulse in all EM channels was generated in order to ensure that the gain of the system remained constant and within specifications.

5.3. Field QA/QC Procedures

On return of the pilot and operator to the base, usually after each flight, the ProtoDAS streaming EM data and the RMS data are carried on removable hard drives and FlashCards, respectively and transferred to the data processing work station. At the end of each day, the base station magnetometer data on FlashCard is retrieved from the base station unit.

Data verification and quality control includes a comparison of the acquired GPS data with the flight plan; verification and conversion of the RMS data to an ASCII format XYZ data file; verification of the base station magnetometer data and conversion to ASCII format XYZ data; and loading, processing and conversion of the steaming EM data from the removable hard drive. All data is then merged to an ASCII XYZ format file which is then imported to an Oasis database for further QA/QC and for the production of preliminary EM, magnetic contour, and flight path maps.

Survey lines which show excessive deviation from the intended flight path are re-flown. Any line or portion of a line on which the data quality did not meet the contract specification was noted and reflown.

6. AIRCRAFT AND EQUIPMENT

6.1. Aircraft

A Eurocopter (Aerospatiale) AS350-B2 "A-Star" helicopter - registration C-GPTY was used as the survey platform. The helicopter was owned and operated by Hi-Wood Helicopters Limited based in Okotoks, Alberta. The survey aircraft was flown at a nominal terrain clearance of 220 ft (70 m).





Figure 4. Survey helicopter C-GPTY.



Figure 5. The magnetometer bird (A) and AeroTEM II EM bird (B)

Aeroquest Limited - Report on an AeroTEM II Airborne Geophysical Survey

<u>= AEROQUEST LIMITED</u>

845 Main St. East, Unit #4 Milton, Ontario, Canada L9T 3

6.2. Magnetometer

The Aeroquest airborne survey system employs the Geometrics G-823A cesium vapour magnetometer sensor. The sensor is positioned within a two metre towed bird airfoil attached to the main tow line, 17 metres above the EM bird. The sensitivity of the magnetometer is 0.001 nanoTesla at a 0.1 second sampling rate. The nominal ground clearance of the magnetometer sensor is 47 m. The magnetic data are sampled at 10Hz by the RMS DGR-33.

6.3. Electromagnetic System

The electromagnetic system is an Aeroquest AeroTEM II time domain towed-bird system. The current AeroTEM II transmitter dipole moment is 38.8 kNIA. The AeroTEM II bird is towed 36 m (125 ft) below the helicopter. More technical details of the system may be found in Appendix 4.

The wave-form is triangular with a symmetric transmitter on-time pulse of 1.1 ms and a base frequency of 150 Hz. The current alternates polarity every on-time pulse. During every Tx on-off cycle (300 per second), 128 contiguous channels of raw x and z component (and a transmitter current monitor, itx) of the received waveform are measured. Each channel width is 26.04 microseconds starting at the beginning of the transmitter pulse. This 128 channel data is referred to as the raw streaming data. The AeroTEM II system has two separate EM data recording streams, the conventional RMS DGR-33 and the AeroDAS system which records the raw streaming data.



Figure 6. AeroTEM II Instrument Rack

6.4. AERODAS Acquisition System

The 128 channels of raw streaming data are recorded by the AeroDAS acquisition system onto a removable hard drive. The streaming data are processed post-survey to yield 33 stacked and binned on-time and off-time channels at a 10 Hz sample rate. The timing of the final processed EM channels is described in the following table:

<u>= AEROQUEST LIMITED</u>

845 Main St. East, Unit #4 Milton, Ontario, Canada L9T 3Z3

Channel:	Start Gate	End Gate	Start	Start Stop		Width	
			(us)	(us)	(us)	(us)	
1 ON	25	25	651.0	677.0	664.0	26.0	
2 ON	26	26	677.0	703.1	690.1	26.0	
3 ON	27	27	703.1	729.1	716.1	26.0	
4 ON	28	28	729.1	755.2	742.1	26.0	
5 ON	29	29	755.2	781.2	768.2	26.0	
6 ON	30	30	781.2	807.2	794.2	26.0	
7 ON	31	31	807.2	833.3	820.3	26.0	
8 ON	32	32	833.3	859.3	846.3	26.0	
9 ON	33	33	859.3	885.4	872.3	26.0	
10 ON	34	34	885.4	911.4	898.4	26.0	
11 ON	35	35	911.4	937.4	924.4	26.0	
12 ON	36	36	937.4	963.5	950.5	26.0	
13 ON	37	37	963.5	989.5	976.5	26.0	
14 ON	38	38	989.5	1015.6	1002.5	26.0	
15 ON	39	39	1015.6	1041.6	1028.6	26.0	
16 ON	40	40	1041.6	1067.6	1054.6	26.0	
0 OFF	44	44	1145.8	1171.8	1158.8	26.0	
1 OFF	45	45	1171.8	1197.8	1184.8	26.0	
2 OFF	46	46	1197.8	1223.9	1210.9	26.0	
3 OFF	47	47	1223.9	1249.9	1236.9	26.0	
4 OFF	48	48	1249.9	1276.0	1262.9	26.0	
5 OFF	49	49	1276.0	1302.0	1289.0	26.0	
6 OFF	50	50	1302.0	1328.0	1315.0	26.0	
7 OFF	51	51	1328.0	1354.1	1341.1	26.0	
8 OFF	52	52	1354.1	1380.1	1367.1	26.0	
9 OFF	53	53	1380.1	1406.2	1393.1	26.0	
10 OFF	54	54	1406.2	1432.2	1419.2	26.0	
11 OFF	55	55	1432.2	1458.2	1445.2	26.0	
12 OFF	56	56	1458.2	1484.3	1471.3	26.0	
13 OFF	57	60	1484.3	1588.4	1536.4	104.2	
14 OFF	61	68	1588.4	1796.8	1692.6	208.3	
15 OFF	69	84	1796.8	2213.4	2005.1	416.6	
16 OFF	85	110	2213.4	2890.4	2551.9	677.0	

6.5. RMS DGR-33 Acquisition System

In addition to the magnetics, altimeter and position data, six channels of real time processed off-time EM decay in the Z direction and one in the X direction are recorded by the RMS DGR-33 acquisition system at 10 samples per second and plotted real-time on the analogue chart recorder. These channels are derived by a binning, stacking and filtering procedure on the raw streaming data. The primary use of the RMS EM data (Z1 to Z6, X1) is to provide for real-time QA/QC on board the aircraft.



RMS Channel	Start time (microsec)	End time (microsec)	Width (microsec)	Streaming Channels
Z1, X1	1269.8	1322.8	52.9	48-50
Z2	1322.8	1455.0	132.2	50-54
Z3	1428.6	1587.3	158.7	54-59
Z4	1587.3	1746.0	158.7	60-65
Z5	1746.0	2063.5	317.5	66-77
Z6	2063.5	2698.4	634.9	78-101

The channel window timing of the RMS DGR-33 6 channel system is described in the table below.

6.6. Magnetometer Base Station

The base magnetometer was a GEM Systems GSM-19 overhauser magnetometer with a built in GPS receiver and external GPS antenna. Data logging and UTC time syncronisation was carried out within the magnetometer, with the GPS providing the timing signal. That data logging was configured to measure at 1.0 second intervals. Digital recording resolution was 0.001 nT. The sensor was placed on a tripod in an area free of cultural noise sources. A continuously updated display of the base station values was available for viewing and regularly monitored to ensure acceptable data quality and diurnal levels.

6.7. Radar Altimeter

A Terra TRA 3500/TRI-30 radar altimeter is used to record terrain clearance. The antenna was mounted on the outside of the helicopter beneath the cockpit. The recorded data represents the height of the antenna, i.e. helicopter, above the ground. The Terra altimeter has an altitude accuracy of +/-1.5 metres.

6.8. Video Tracking and Recording System

A high resolution colour VHS/8mm video camera is used to record the helicopter ground flight path along the survey lines. The video is digitally annotated with GPS position and time and can be used to verify ground positioning information and cultural causes of anomalous geophysical responses.





Figure 7. Schematic of Transmitter and Receiver waveforms

6.9. GPS Navigation System

The navigation system consists of an Ag-Nav Incorporated AG-NAV2 GPS navigation system comprising a PC-based acquisition system, navigation software, a deviation indicator in front of the aircraft pilot to direct the flight, a full screen display with controls in front of the operator, a Mid-Tech RX400p WAAS-enabled GPS receiver mounted on the instrument rack and an antenna mounted on the magnetometer bird. WAAS (Wide Area Augmentation System) consists of approximately 25 ground reference stations positioned across the United States that monitor GPS satellite data. Two master stations, located on the east and west coasts, collect data from the reference stations and create a GPS correction message. This correction accounts for GPS satellite orbit and clock drift plus signal delays caused by the atmosphere and ionosphere. The corrected differential message is then broadcast through one of two geostationary satellites, or satellites with a fixed position over the equator. The corrected position has a published accuracy of under 3 metres. A recent static ground test of the Mid-Tech WAAS GPS yielded a standard deviation in x and y of under 0.6 metres and for z under 1.5 metres over a two-hour period.

Survey co-ordinates are set up prior to the survey and the information is fed into the airborne navigation system. The co-ordinate system employed in the survey design was WGS84 [World] using the UTM zone 18N projection. The real-time differentially corrected GPS positional data was recorded by the RMS DGR-33 in geodetic coordinates (latitude and longitude using WGS84) at 0.2 second intervals.

Aeroquest Limited - Report on an AeroTEM II Airborne Geophysical Survey

845 Main St. East, Unit #4 Milton, Ontario, Canada L9T 3Z3

6.10. Digital Acquisition System

The AeroTEM© received waveform sampled during on and off-time at 128 channels per decay, 300 times per second, was logged by the proprietary AeroDAS data acquisition system. The channel sampling commences at the start of the Tx cycle and the width of each channel is 26.04 microseconds. The streaming data was recorded on a removable hard-drive and was later backed-up onto DVD-ROM from the field-processing computer.

The RMS Instruments DGR33A data acquisition system was used to collect and record the analogue data stream, i.e. the positional and secondary geophysical data, including processed 6 channel EM, magnetics, radar altimeter, GPS position, and time. The data was recorded on 128Mb capacity FlashCard. The RMS output was also directed to a thermal chart recorder.

7. PERSONNEL

The following AeroQuest personnel were involved in the project:

- Manager of Operations: Bert Simon
- Field Data Processors: Nick Venter
- Field Operators: Markus Watson
- Data Interpretation and Reporting: Jonathan Rudd, Marion Bishop

The survey pilots Paul Kendall and R. Fashano were employed directly by the helicopter operator – HiWood Helicopters.

8. DELIVERABLES

The report includes a set of four geophysical maps for each of the two survey areas plotted at a scale of 1:10,000.

- Total Magnetic Intensity (TMI) with line contours and EM anomalies
- Tilt Derivative of TMI with line contours and EM anomalies
- AeroTEM Off-Time Profiles (Z1-Z16) with EM anomalies
- Off-time Channel Z1 with line contours and EM anomalies

The coordinate/projection system for the maps is NAD83 Universal Transverse Mercator Zone 11 (for Canada; Central America; Mexico; USA (ex Hawaii Aleutian Islands)). For reference, the latitude and longitude in NAD83 are also noted on the maps. All the maps show flight path trace, skeletal topography, and conductor picks represented by an anomaly symbol classified according to calculated off-time conductance. The anomaly symbol is accompanied by postings denoting the calculated on-time conductance, a thick or thin classification and an anomaly identifier label. The anomaly symbol legend is given in the margin of the maps. The magnetic field data is presented as superimposed line contours with a minimum contour interval of 25 nT. Bold contour lines are separated by 500 nT.

AEROQUEST LIMITED

The geophysical profile data is archived digitally in a Geosoft GDB binary format database. The database contains the processed streaming data, the RMS data, the base station data, and all processed channels. A description of the contents of the individual channels in the database can be found in Appendix 3. A copy of this digital data is archived at the Aeroquest head office in Milton.

9. DATA PROCESSING AND PRESENTATION

All in-field and post-field data processing was carried out using Aeroquest proprietary data processing software, and Geosoft Oasis montaj software. Maps were generated using Hewlett Packard ink-jet plotters.

9.1. Base Map

The geophysical maps accompanying this report are based on positioning in the datum of NAD83. The survey geodetic GPS positions have been projected using the Universal Transverse Mercator projection in Zone 15. A summary of the map datum and projection specifications are as follows:

- Ellipse: GRS 1980
- Ellipse major axis: 6378137m eccentricity: 0.081819191
- Datum: North American 1983 Canada Mean
- Datum Shifts (x,y,z) : 0, 0, 0 metres
- Map Projection: Universal Transverse Mercator Zone 11 (Central Meridian 117°W)
- Central Scale Factor: 0.9996
- False Easting, Northing: 500,000m, 0m

9.2. Flight Path & Terrain Clearance

The position of the survey helicopter was directed by use of the Global Positioning System (GPS). Positions were updated five times per second (5Hz) and expressed as WGS84 latitude and longitude calculated from the raw pseudo range derived from the C/A code signal. The instantaneous GPS flight path, after conversion to UTM co-ordinates, is drawn using linear interpolation between the x/y positions. The terrain clearance was maintained with reference to the radar altimeter. The raw Digital Terrain Model (DTM) was derived by taking the GPS survey elevation and subtracting the radar altimeter terrain clearance values. The calculated topography elevation values are relative and are not tied in to surveyed geodetic heights.

Each flight included at least two high elevation 'background' checks. During the high elevation checks, an internal 5 second wide calibration pulse in all EM channels was generated in order to ensure that the gain of the system remained constant and within specifications.

9.3. Electromagnetic Data

The raw streaming data, sampled at a rate of 38,400 Hz (128 channels, 300 times per second) was reprocessed using a proprietary software algorithm developed and owned by Aeroquest Limited. Processing involves the compensation of the X and Z component data for the primary field waveform.

AEROQUEST LIMITED

Coefficients for this compensation for the system transient are determined and applied to the stream data. The stream data are then pre-filtered, stacked, binned to the 33 on and off-time channels and checked for the effectiveness of the compensation and stacking processes. The stacked data is then filtered, leveled and split up into the individual line segments. Further base level adjustments may be carried out at this stage.

The final field processing step was to merge the processed EM data with the other data sets into a Geosoft GDB file. The EM fiducial is used to synchronize the two datasets. The processed channels are labeled in the "streaming" database as Zon1 to Zon16, Zoff0 to Zoff16, Xon1 to Xon16, and Xoff0 to Xoff16.

The filtering of the stacked data is designed to remove or minimize high frequency noise that can not be sourced from the geology. Apparent bedrock EM anomalies were interpreted with the aid of an auto-pick from positive peaks and troughs in the on-time Z channel responses correlated with X channel responses. The auto-picked anomalies were reviewed and edited by a geophysicist on a line by line basis to discriminate between thin and thick conductor types. Anomaly picks locations were migrated and removed as required. This process ensures the optimal representation of the conductor centres on the maps.

At each conductor pick, estimates of the on-time and off-time conductance have been generated based on a horizontal plate source model for those data points along the line where the response amplitude is sufficient to yield an acceptable estimate. Some of the EM anomaly picks do not display a tau value; this is due to the inability to properly define the decay of the conductor where the amplitude of the signal response is low. Each conductor pick was then classified according to a set of seven ranges of calculated off-time conductance values. Each symbol is also given an identification letter label, unique to each flight line. Conductor picks that did not yield an acceptable estimate of off-time conductance were classified as a low conductance source.

9.4. Magnetic Data

Prior to any leveling the magnetic data was subjected to a lag correction of -0.1 seconds and a spike removal filter. The filtered aeromagnetic data were then corrected for diurnal variations using the magnetic base station and the intersections of the tie lines. No corrections for the regional reference field (IGRF) were applied. The corrected profile data were interpolated on to a grid using a random grid technique with a grid cell size of 18 metres. The final leveled grid provided the basis for threading the presented contours which have a minimum contour interval of 25 nT.

In order to map shallow basement response a 'tilt' derivative product was calculated from the total magnetic intensity (TMI) grid. The Tilt Derivative (TDR) of the TMI enhances small wavelength magnetic features which define shallow basement structures as well as potential mineral exploration targets. The TILT derivative can be though of as a combination of the first vertical derivative and the total horizontal derivative of the total magnetic intensity.

Mathematically, the TDR is defined as:

 $TDR = \arctan(VDR/THDR)$



where VDR and THDR are first vertical and total horizontal derivatives, respectively, of the total magnetic intensity T.

$$\label{eq:VDR} \begin{split} VDR &= dT/dz \\ THDR &= sqrt \; (\; (dT/dx)^2 + (dT/dy)^2 \;) \end{split}$$

The calculated TDR grid is presented a colour image. Line contours are also overlain which have a minimum contour interval of 0.2 radians.

10. RESULTS and INTERPRETATION

The survey was successful in mapping the magnetic and conductive properties of the geology throughout the survey area. Below is a brief interpretation of the results. For a more detailed interpretation please contact Aeroquest Limited.

10.1. Magnetic Response

The magnetic data provide a high resolution map of the distribution of the magnetic mineral content of the survey area. This data can be used to interpret the location of geological contacts and other structural features such as faults and zones of magnetic alteration. The sources for anomalous magnetic responses are generally thought to be predominantly magnetite because of the relative abundance and strength of response (high magnetic susceptibility) of magnetite over other magnetic

With a couple of minor exceptions, the magnetic data appear to be reflecting primarily induced magnetization with little evidence of remanent magnetization. In intrusive environments, remanent magnetization is more commonly seen in areas where there has been rapid quenching, so an apparent lack of remanent magnetization in the survey areas suggests slower cooling of any magmas.

The higher frequency (and gain-controlled) magnetic response visible in the 'tilt derivative' map identifies the more subtle linear magnetic highs and offsets which may be important to an understanding of the structural history of the areas. The tilt derivative map also better defines the width and magnetic features throughout the survey areas. minerals such as pyrrhotite.

Wild Rose Property

The magnetic data ranges from lows of approximately 55,500 nT to highs of over 56,900 nT with an average background of 56,000 nT. The magnetic pattern is dominated by a broad arcuate high which extends across the central portion of the survey area. There is no dominant trend, which is consistent with the complex geologic history of the area. When interpreting the magnetic response, it is important to consider that magnetic can be generated through several metamorphic or epithermal processes, so may not simply be reflecting lithologic variations in the survey area.

Copper Camp Property

The magnetic data ranges from a low of approximately 55,460 nT to over 57,000 nT with an average background of 55,950 nT. The property has a dominant north northeast trend, enforced by several

Aeroquest Limited - Report on an AeroTEM II Airborne Geophysical Survey

AEROQUEST LIMITED 845 Main St. East, Unit #4 Milton, Ontario, Canada L9T 3Z3

linear highs. However, the area can, in general, be described as having a complex pattern. Several linear trends defined by truncation or offset of magnetic sources appear to define structural features.

10.2. EM Anomalies – General Comments

The EM anomalies on the maps are classified by conductance (as described earlier in the report) and also by the thickness of the source. A thin, vertically orientated source produces a double peak anomaly in the z-component response and a positive to negative crossover in the x-component response. For a vertically orientated thick source (say, greater than 10m), the response is a single peak in the z-component response and a negative to positive crossover in the x-component response (Figure 9). Because of these differing responses, the AeroTEM system provides discrimination of thin and thick sources and this distinction is indicated on the EM anomaly symbols (N = thin and K = thick). Where multiple, closely spaced conductive sources occur, or where the source has a shallow dip, it can be difficult to uniquely determine the type (thick vs. thin) of the source (Figure 10). In these cases both possible source types may be indicated by picking both thick and thin response styles. For shallow dipping conductors the 'thin' pick will be located over the edge of the source, whereas the 'thick' pick will fall over the downdip 'heart' of the anomaly.

All cases should be considered when analyzing the interpreted picks and prioritizing for follow-up. Specific anomalous responses which remain as high priority should be subjected to numerical modeling prior to drill testing to determine the dip, depth and probable geometry of the source.



Figure 8. AeroTEM response to a 'thin' vertical conductor.





Figure 9. AeroTEM response for a 'thick' vertical conductor.



Figure 10. AeroTEM response over a 'thick' dipping conductor.

AEROQUEST LIMITED

845 Main St. East, Unit #4 Milton, Ontario, Canada L9T

10.3. EM Anomalies -Interpretation

There are several anomalous responses in both survey areas which have been confirmed to have cultural sources. Most of these are caused by power transmission lines and are readily identified from the power line monitor (60Hz) in the data sets. In the vicinity of these sources, the noise levels in the data are increased and do, to a certain extent, degrade the interpretability of the survey. However, where valid bedrock responses exist, even in close proximity to the cultural sources, they can be interpreted with good confidence.

Both survey areas have areas of elevated EM response which can be attributed to a more conductive geology but on a broad scale. In these areas, no EM anomalies have been indicated. The EM anomaly symbols are reserved for more discrete (spatially confined) sources which are more typical of economic mineralization. Refer to the Channel Zoff1 maps to identify the broader areas of higher conductivity.

Wild Rose Survey

There are several strong conductive trends in the south central and eastern portion of the survey area. These responses are typical of thick sequences of conductive sediments and, as such, may not be considered as high priority for follow-up. The more discrete zones such as at the central and eastern portions of lines 10260, 10270 and 10280 may be considered as higher priority because they are less likely to be sourced as sediments. There are several isolated conductive sources in the south eastern portion of the survey.

Copper Camp Survey

The Copper Camp project area yielded fewer discrete conductive sources than the Wild Rose survey. Most of the sources are broad, and are identified readily on the Zoff 1 map. Where these broad anomalies produce a 'sharper', more discrete response, an anomaly symbol has been placed. One interesting discrete source feature occurs near the southern margin of the survey where a weakly conductive source extends from anomaly 10570A to 10580A. The source appears to be a thin source with a shallow easterly dip.

All of the EM anomalies should be reviewed in conjunction with any available geological or geochemical information. Prioritization should be based on all available information. The highest priority EM targets should then be subjected to quantitative modeling prior to any drill testing to determine the optimal collar location, azimuth and dip for testing of the source.

Respectfully submitted,

Jonathan Rudd, P.Eng. Manager of Processing and Interpretation Aeroquest Limited January, 2006

Aeroquest Limited - Report on an AeroTEM II Airborne Geophysical Survey



APPENDIX 1 – PROJECT CORNER COORDINATES

The two project areas are rectangular in shape as defined in the following: All coordinates are given in UTM Zone 11 - NAD83.

Copper Camp

Survey Boundary

369159.45446764.6372596.75445174.4371114.85441238.4371575.25441019.6370789.85439574.7367801.05440974.4368248.65442582.9367802.05442798.0

Wild Rose

Survey Boundary

373250.0	5438350.0
376150.0	5439000.0
376112.9	5436369.3
378531.8	5436876.2
378498.8	5435606.8
376045.8	5435095.8
376000.0	5433500.0
372998.1	5432870.2



APPENDIX 2 - Description of Database Fields

The GDB file is a Geosoft binary database. In the database, the Survey lines and Tie Lines are prefixed with an "L" for "Line" and "T" for "Tie".

Databases - CopperCamp_AeroTEM_05051_ final.gdb - WildRose_AeroTEM_05051_ final.gdb:

Column	Units	Description
emfid		AERODAS Fiducial
utctime	hh:mm:ss.ss	UTC time
Х	m	UTM Easting (NAD83, zone 15N)
у	m	UTM Northing (NAD83, zone 15N)
bheight	m	Terrain clearance of EM bird
dtmf	m	Digital Terrain Model
magf	nT	Total magnetic intensity
basemagf	nT	Base station total magnetic intensity
ZOn	nT/s	Processed Streaming On-Time Z component Channels 1-16
ZOff	nT/s	Processed Streaming Off-Time Z component Channels 0-16
XOn	nT/s	Processed Streaming On-Time X component Channels 1-16
XOff	nT/s	Processed Streaming Off-Time X component Channels 0-16
pwrline		Powerline monitor (60 Hz)
Anom_labels		Letter label of conductor pick
Anom_type		Letter label of conductor thickness (N or K)
Tau	μs	Off-time decay constant
Cond	S	Off-time Conductance based on 100m by 100m plate
grade		Classification from 1-7 based on conductance of conductor pick

=AEROQUEST LIMITED

845 Main St. East, Unit #4 Milton, Ontario, Canada L9T 3Z

APPENDIX 3: AEROTEM DESIGN CONSIDERATIONS

Helicopter-borne EM systems offer an advantage that cannot be matched from a fixed-wing platform. The ability to fly at slower speed and collect data with high spatial resolution, and with great accuracy, means the helicopter EM systems provide more detail than any other EM configuration, airborne or ground-based. Spatial resolution is especially important in areas of complex geology and in the search for discrete conductors. With the advent of helicopter-borne high-moment time domain EM systems the fixed wing platforms are losing their *only* advantage – depth penetration.

Advantage 1 – Spatial Resolution

The AeroTEM system is specifically designed to have a small footprint. This is accomplished through the use of concentric transmitter-receiver coils and a relatively small diameter transmitter coil (5 m). The result is a highly focused exploration footprint, which allows for more accurate "mapping" of discrete conductors. Consider the transmitter primary field images shown in Figure 1, for AeroTEM versus a fixed-wing transmitter.





The footprint of AeroTEM at the earth's surface is roughly 50m on either side of transmitter

The footprint of a fixed-wing system is roughly 150 m on either side of the transmitter

Figure 1. A comparison of the footprint between AeroTEM and a fixed-wing system, highlights the greater resolution that is achievable with a transmitter located closer to the earth's surface. The AeroTEM footprint is one third that of a fixed-wing system and is symmetric, while the fixed-wing system has even lower spatial resolution along the flight line because of the separated transmitter and receiver configuration.

At first glance one may want to believe that a transmitter footprint that is distributed more evenly over a larger area is of benefit in mineral exploration. In fact, the opposite is true; by energizing a larger surface area, the ability to energize and detect discrete conductors is reduced. Consider, for example, a comparison between AeroTEM and a fixed-wing system over the Mesamax Deposit (1,450,000 tonnes of 2.1% Ni, 2.7% Cu, 5.2 g/t Pt/Pd). In a test survey over three flight lines spaced 100 m apart, AeroTEM detected the Deposit on all three flight lines. The fixed-wing system detected the Deposit only on two flight lines. In exploration programs that seek to expand the flight line spacing in an effort to reduce the cost of the airborne survey, discrete conductors such as the Mesamax Deposit can go undetected. The argument often put forward in favor of using fixed-wing systems is that because of their larger footprint, the flight line spacing can indeed be widened. Many fixed-wing surveys are flown at 200 m or 400 m. Much of the survey work performed by Aeroquest has been to survey in areas that were previously flown at these wider line spacings. One of the reasons for AeroTEM's impressive discovery record has been the strategy of flying closely spaced lines and finding all the discrete near-surface conductors. These higher resolution surveys are being flown within existing mining camps, areas that improve the chances of discovery.

AEROQUEST LIMITED 845 Main St. East, Unit #4 Milton, Ontario, Canada L9T 3Z3



Figure 2. Fixed-wing (upper) and AeroTEM (lower) comparison over the eastern limit of the Mesamax Deposit, a Ni-Cu-PGE zone located in the Raglan nickel belt and owned by Canadian Royalties. Both systems detected the Deposit further to the west where it is closer to surface.

The small footprint of AeroTEM combined with the high signal to noise ratio (S/N) makes the system more suitable to surveying in areas where local infrastructure produces electromagnetic noise, such as power lines and railways. In 2002

Aeroquest Limited - Report on an AeroTEM II Airborne Geophysical Survey

AEROQUEST LIMITED

845 Main St. East, Unit #4 Milton, Ontario, Canada L9T 32

Aeroquest flew four exploration properties in the Sudbury Basin that were under option by FNX Mining Company Inc. from Inco Limited. One such property, the Victoria Property, contained three major power line corridors.

The resulting AeroTEM survey identified all the known zones of Ni-Cu-PGE mineralization, and detected a response between two of the major power line corridors but in an area of favorable geology. Three boreholes were drilled to test the anomaly, and all three intersected sulphide. The third borehole encountered 1.3% Ni, 6.7% Cu, and 13.3 g/t TPMs over 42.3 ft. The mineralization was subsequently named the Powerline Deposit.

The success of AeroTEM in Sudbury highlights the advantage of having a system with a small footprint, but also one with a high S/N. This latter advantage is achieved through a combination of a high-moment (high signal) transmitter and a rigid geometry (low noise). Figure 3 shows the Powerline Deposit response and the response from the power line corridor at full scale. The width of power line response is less than 75 m.



Figure 3. The Powerline Deposit is located between two major power line corridors, which make EM surveying problematic. Despite the strong response from the power line, the anomaly from the Deposit is clearly detected. Note the thin formational conductor located to the south. The only way to distinguish this response from that of two closely spaced conductors is by interpreting the X-axis coil response.

Advantage 2 – Conductance Discrimination

The AeroTEM system features full waveform recording and as such is able to measure the on-time response due to high conductance targets. Due to the processing method (primary field removal), there is attenuation of the response with increasing conductance, but the AeroTEM on-time measurement is still superior to systems that rely on lower base frequencies to detect high conductance targets, but do not measure in the on-time.

The peak response of a conductive target to an EM system is a function of the target conductance and the EM system base frequency. For time domain EM systems that measure only in the off-time, there is a drop in the peak response of a target as the base frequency is lowered for all conductance values below the peak system response. For example, the AeroTEM peak response occurs for a 10 S conductor in the early off-time and 100 S in the late off-time for a 150 Hz base frequency. Because base frequency and conductance form a linear relationship when considering the peak response of any EM system, a drop in base frequency of 50% will double the conductance at which an EM system shows its peak response. If

Aeroquest Limited - Report on an AeroTEM II Airborne Geophysical Survey

AEROQUEST LIMITED

845 Main St. East, Unit #4 Milton, Ontario, Canada L9T 3Z

the base frequency were lowered from 150 Hz to 30 Hz there would be a fivefold increase in conductance at which the peak response of an EM occurred.

However, in the search for highly conductive targets, such as pyrrhotite-related Ni-Cu-PGM deposits, a fivefold increase in conductance range is a high price to pay because the signal level to lower conductance targets is reduced by the same factor of five. For this reason, EM systems that operate with low base frequencies are not suitable for general exploration unless the target conductance is more than 100 S, or the target is covered by conductive overburden.

Despite the excellent progress that has been made in modeling software over the past two decades, there has been little work done on determining the optimum form of an EM system for mineral exploration. For example, the optimum configuration in terms of geometry, base frequency and so remain unknown. Many geophysicists would argue that there is no single ideal configuration, and that each system has its advantages and disadvantages. We disagree.

When it comes to detecting and discriminating high-conductance targets, it is necessary to measure the pure inphase response of the target conductor. This measurement requires that the measured primary field from the transmitter be subtracted from the total measured response such that the secondary field from the target conductor can be determined. Because this secondary field is in-phase with the transmitter primary field, it must be made while the transmitter is turned on and the transmitter current is changing. The transmitted primary field is several orders of magnitude larger than the secondary field. AeroTEM uses a bucking coil to reduce the primary field at the receiver coils. The only practical way of removing the primary field is to maintain a rigid geometry between the transmitter, bucking and receiver coils. This is the main design consideration of the AeroTEM airframe and it is the only time domain airborne system to have this configuration.





The off-time AeroTEM response for the 16 channel configuration.

The on-time response assuming 100% removal of the measured primary field.

Figure 4. The off-time and on-time response nomogram of AeroTEM for a base frequency of 150 Hz. The on-time response is much stronger for higher conductance targets and this is why on-time measurements are more important than lower frequencies when considering high conductance targets in a resistive environment.

Advantage 3 – Multiple Receiver Coils

AeroTEM employs two receiver coil orientations. The Z-axis coil is oriented parallel to the transmitter coil and both are horizontal to the ground. This is known as a maximum coupled configuration and is optimal for detection. The X-axis coil is oriented at right angles to the transmitter coil and is oriented along the line-of-flight. This is known as a minimum coupled configuration, and provides information on conductor orientation and thickness. These two coil configurations combined provide important information on the position, orientation, depth, and thickness of a conductor that cannot be matched by the traditional geometries of the HEM or fixed-wing systems. The responses are free from a system geometric effect and can be easily compared to model type curves in most cases. In other words, AeroTEM data is very easy to interpret. Consider, for example, the following modeled profile:





Figure 5. Measured (lower) and modeled (upper) AeroTEM responses are compared for a thin steeply dipping conductor. The response is characterized by two peaks in the Z-axis coil, and a cross-over in the X-axis coil that is centered between the two Z-axis peaks. The conductor dips toward the higher amplitude Z-axis peak. Using the X-axis cross-over is the only way of differentiating the Z-axis response from being two closely spaced conductors.

HEM versus AeroTEM

Traditional helicopter EM systems operate in the frequency domain and benefit from the fact that they use narrowband as opposed to wide-band transmitters. Thus all of the energy from the transmitter is concentrated in a few discrete frequencies. This allows the systems to achieve excellent depth penetration (up to 100 m) from a transmitter of modest power. The Aeroquest Impulse system is one implementation of this technology.

The AeroTEM system uses a wide-band transmitter and delivers more power over a wide frequency range. This frequency range is then captured into 16 time channels, the early channels containing the high frequency information and the late time channels containing the low frequency information down to the system base frequency. Because frequency domain HEM systems employ two coil configurations (coplanar and coaxial) there are only a maximum of three comparable frequencies per configuration, compared to 16 AeroTEM off-time and 12 AeroTEM on-time channels.

Aeroquest Limited - Report on an AeroTEM II Airborne Geophysical Survey

EAEROQUEST LIMITED

845 Main St. East, Unit #4 Milton, Ontario, Canada L9T 3Z3

Figure 6 shows a comparison between the Dighem HEM system (900 Hz and 7200 Hz coplanar) and AeroTEM (Zaxis) from surveys flown in Raglan, in search of highly conductive Ni-Cu-PGM sulphide. In general, the AeroTEM peaks are sharper and better defined, in part due to the greater S/N ratio of the AeroTEM system over HEM, and also due to the modestly filtered AeroTEM data compared to HEM. The base levels are also better defined in the AeroTEM data. AeroTEM filtering is limited to spike removal and a 5-point smoothing filter. Clients are also given copies of the raw, unfiltered data.



Figure 6. Comparison between Dighem HEM (upper) and AeroTEM (lower) surveys flown in the Raglan area. The AeroTEM responses appear to be more discrete, suggesting that the data is not as heavily filtered as the HEM data. The S/N advantage of AeroTEM over HEM is about 5:1.

Aeroquest Limited is grateful to the following companies for permission to publish some of the data from their respective surveys: Wolfden Resources, FNX Mining Company Inc, Canadian Royalties, Nova West Resources, Aurogin Resources, Spectrem Air. Permission does not imply an endorsement of the AeroTEM system by these companies.



APPENDIX 4: AeroTEM Instrumentation Specification Sheet

AEROTEM Helicopter Electromagnetic System

System Characteristics

- Transmitter: Triangular Pulse Shape Base Frequency 30 or 150 Hz
- Tx On Time 5,750 (30Hz) or 1,150 (150Hz) µs
- Tx Off Time 10,915 (30Hz) or 2,183 (150Hz) µs
- Loop Diameter 5 m
- Peak Current 250 A
- Peak Moment 38,800 NIA
- Typical Z Axis Noise at Survey Speed = 10 nT peak
- Sling Weight: 270 Kg
- Length of Tow Cable: 40 m
- Bird Survey Height: 30 m or less nominal

Receiver

- Two Axis Receiver Coils (x, z) positioned at centre of transmitter loop
- Selectable Time Delay to start of first channel 21.3, 42.7, or 64.0 ms

Display & Acquisition

- PROTODAS Digital recording at 128 samples per decay curve at a maximum of 300 curves per second (26.05 μs channel width)
- RMS Channel Widths: 52.9,132.3, 158.7, 158.7, 317.5, 634.9 µs
- Recording & Display Rate = 10 readings per second.
- On-board display six channels Z-component and 1 X-component

System Considerations

Comparing a fixed-wing time domain transmitter with a typical moment of 500,000 NIA flying at an altitude of 120 m with a Helicopter TDEM at 30 m, notwithstanding the substantial moment loss in the airframe of the fixed wing, the same penetration by the lower flying helicopter system would only require a sixty-fourth of the moment. Clearly the AeroTEM system with nearly 40,000 NIA has more than sufficient moment. The airframe of the fixed wing presents a response to the towed bird, which requires dynamic compensation. This problem is non-existent for AeroTEM since transmitter and receiver positions are fixed. The AeroTEM system is completely portable, and can be assembled at the survey site within half a day.

Tel: +1 905 693-9129. Fax: +1 905 693-9128. Email: sales@aeroquestsurveys.com

APPENDIX 3

Listing of EM Conductors

Wild Rose Anomaly Listing

Easting	Northing	Labels	Grade	Туре	cond	tau	dtm	bheight	emfid	Line	utctime
378060	5436499	A	6	K	36	602	1099.6	47.34	552780	20260	22.94203
377432	5436365	В	1	Ν	0.8	89	941.9	58.14	560700	20260	22.94936
376354	5436144	С	2	Ν	2.9	169	745.8	51.43	573840	20260	22.96153
376089	5436083	А	3	Ν	7.4	272	857.6	46.01	606360	20261	22.99311
376032	5436072	А	3	K	7.4	272	882.7	48.13	607710	20261	22.99436
374734	5435786	В	2	K	1.1	106	1003.5	89.04	631380	20261	23.01628
374281	5435701	С	2	К	1.1	106	1117.3	54.7	640620	20261	23.02483
374010	5435634	D	2	К	4.2	205	1110.1	61.23	643830	20261	23.02781
373489	5435639	А	2	К	1.4	117	1224.7	51.08	676890	20270	23.05842
373827	5435712	В	2	К	2.1	144	1141.8	56.87	681150	20270	23.06236
374727	5435907	С	2	К	1.3	115	1024.6	73.28	694440	20270	23.07467
376055	5436190	D	5	K	22.2	471	860.7	63.4	717240	20270	23.09578
376316	5436243	E	5	к	27.7	526	760.9	48.32	721410	20270	23.09964
377879	5436577	F	4	K	12.5	353	1040.8	44.52	745650	20270	23.12208
378110	5436625	G	5	N	24	490	1065.6	45.86	749070	20270	23 12525
378151	5436633	G	5	ĸ	24	490	1067.3	38.17	749670	20270	23.12581
377867	5436668	A	6	ĸ	47	684	1033.9	51 07	775230	20280	23 14947
377592	5436600	B	4	ĸ	14	374	962.2	60.87	779040	20280	23.153
376271	5436341	- C	2	N	4.8	218	778	59.36	796380	20280	23 16906
376206	5436328	Č	2	ĸ	4.8	218	798.1	54.64	797280	20280	23.16989
376054	5436290	D	5	ĸ	21.9	468	860.6	50 17	799740	20280	23 17217
373584	5436062	Ā	2	ĸ	1.25	112	1237.2	72.71	1012440	20310	23.37206
376156	5436618	B	1	ĸ	0.2	42	886.8	59.61	1056390	20310	23 41275
374759	5436411	Ā	1	K	0.5	72	1057.5	64.86	1083360	20320	23.43769
374787	5436531	А	2	к	2.6	161	1053.6	66.11	1152540	20330	23.50175
374695	5436598	A	2	K	1.1	105	1072.9	61.78	1201050	20340	23.54667
374777	5436670	А	2	Ν	1.3	115	1066.2	49.78	1576050	20345	23.89389
374715	5436657	А	2	К	1.3	115	1072.4	51.6	1576860	20345	23.89464
374753	5436725	А	2	К	1.4	120	1077.1	59.59	1269330	20350	23.60989
374694	5436764	А	1	К	0.64	80	1099.5	67.22	1639890	20355	23.953
374800	5436787	В	1	К	0.5	70	1086.1	51.67	1641600	20355	23.95458
374750	5436810	А	1	К	0.65	80	1097	62.03	1321470	20360	23.65817
374744	5436861	А	1	K	0.7	84	1103.7	72.01	1697790	20365	0.006611
374747	5436929	А	2	К	1.7	131	1119	66.12	1384830	20370	23.71683
375125	5437010	В	1	K	0.06	25	1049	50.91	1391220	20370	23.72275
375108	5437057	А	1	К	0.11	33	1052.2	60.54	1791420	20376	0.095778
375134	5437111	А	1	K	58	0.34	1055.8	53.06	1434930	20380	23.76322
375108	5437154	А	1	К	0.82	91	1057.8	51.36	1838070	20385	0.139
375092	5437210	А	1	К	0.31	56	1048.9	73.24	1509840	20390	23.83258
375113	5437259	А	1	К	0.23	48	1039	70.42	1913070	20395	0.208444
375073	5437305	А	1	К	0.63	79	1046.4	78.37	2575534	20400	0.180306
375034	5437346	А	1	K	0.99	100	1061.9	57.28	782812	20406	20.35308
375022	5437382	A	1	K	0.99	99.7	1065.4	54.01	2508604	20410	0.118333
373462	5437566	А	1	K	0.47	68	1297.3	64.02	2230114	20460	23.85892
375012	5434304	А	1	Ν	0.01	10	829.5	45.52	1485136	29040	17.85744







