VOLUME I

Geological, Geochemical and Geophysical Report

-- on the --

RABBITT MINE PROPERTY Similkameen Mining Division, British Columbia

-- for ---

Discovery Ventures Inc. #430 – 580 Hornby Street Vancouver, B.C. V6C 3B6 BC Geological Survey Assessment Report 31355a

Location: 120 49' west; and 49 34' north NTS map sheet 92H/10 2-10 km west of Tulameen, B.C.

Work Completed: October 1 – December 15, 2009

PROLOGICAL S'

Prepared By:

John R. Kerr, P. Eng. 208 – 515 West Pender Street Vancouver, B.C. V6B 6H4

February 10, 2010

Ministry of Energy & Mines Energy & Minerals Division Geological Survey Branch	MINERAL TITLES BRANCH File Rec'r FEB 1 0 2010	ASSESSMENT REPORT TITLE PAGE AND SUMMARY
TITLE OF REPORT [type of survey(s)] Grological, Geochemical și Gi AUTHOR(S) AUTHOR(S) NOTICE OF WORK PERMIT NUMBER(S)/DATE(S)	Eng signature(s)	YEAR OF WORK_
STATEMENT OF WORK - CASH PAYMENT EVENT NUMBE PROPERTY NAME <u>Rabbit</u> CLAIM NAME(S) (on which work was done) <u>Rabbi</u>	er(s)/DATE(S) Event 445	1472), Rabbitt Mine
Road (531508), Red Bill <u>Red Bild 3 (567139)</u> , K COMMODITIES SOUGHT MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN_	d L (567136), Red Ded Bird 4 (567140) opper	Brid 2 (567137),) & Red Bird 5 (567142)
MINING DIVISION	ZNTS <u>92</u> /1/1 LONGITUDE <u>120</u> ° <u>49'</u> 2) <u>Richard</u> Dway ne	Billingslay KIESS
MAILING ADDRESS #818-470 Granvilles Vancouver, B.C. V6C OPERATOR(S) [who paid for the work]	1V5.	
1) <u>JISCOVERY LATUR</u> MAILING ADDRESS <u>#430-580 Homog</u> Vancover BI	<u>51.</u>	
PROPERTY GEOLOGY KEYWORDS (lithology, age, stratign <u>Property underlain</u> ma <u>Group</u> Julaneen ufm Vein gold potential m	aphy, structure, alteration, mineralization, size a in by by volc. rock complex in western western port of put	nd attitude): sofTriassic No colo portion of property perty & VITS
Copper potential in las REFERENCES TO PREVIOUS ASSESSMENT WORK AND	ASSESSMENT REPORT NUMBERS	ury.

	EXTENT OF WORK		PROJECT COSTS
THIS REPORT	(IN METRIC UNITS)	ON WHICH CLAIMS	APPORTIONED (incl. support)
GEOLOGICAL (scale, area)			
Ground, mapping		all	# 16,712
Photo interpretation			
GEOPHYSICAL (line-kilometres)			
Ground			
Magnetic			
Electromagnetic			
Induced Polarization			
Radiometric			
Seismic			
Other		•	
Airborne 401 km		Red Bird claims	# 57.685
GEOCHEMICAL	· · ·		
(number of samples analysed for)			
Soil 739 5.01	15	all	
Silt		<u>}</u>	\$15,509
Rock 67 10	ck chips	all	
Other Collectio	0		#23,438
DRILLING (total metres; number of holes, size)			
Core			
Non-core			
· · · · · · · · · · · · · · · · · · ·			
RELATED TECHNICAL	· · · · · · · · · · · · · · · · · · ·		
RELATED TECHNICAL Sampling/assaying			
RELATED TECHNICAL Sampling/assaying			
RELATED TECHNICAL Sampling/assaying Petrographic Mineralographic		· · · · · · · · · · · · · · · · · · ·	
RELATED TECHNICAL Sampling/assaying Petrographic Mineralographic Metallurgic			
RELATED TECHNICAL Sampling/assaying Petrographic Mineralographic Metallurgic PROSPECTING (scale, area)	•	all claims .	# 6,300
RELATED TECHNICAL Sampling/assaying Petrographic Mineralographic Metallurgic PROSPECTING (scale, area) PREPARATORY/PHYSICAL Scapport SecuriceS, INC. 7 Ling/grid (kitometers) Scan a Line of a	transpatcher,	all claims.	# 6;300 # 28,928
RELATED TECHNICAL Sampling/assaying Petrographic Mineralographic Metallurgic PROSPECTING (scale, area) PREPARATORY/PHYSICAL Scapport Securices, Inc., J Ling/grid (kilometres) Scapp Lices 3 ¹ /9 Langgraphie/Photogrammetric	transpatcher, Accomodation	all claims .	# 6,300 # 28,928
RELATED TECHNICAL Sampling/assaying Petrographic Mineralographic Metallurgic PROSPECTING (scale, area) PREPARATORY/PHYSICAL Scapport Services, inc. 7 Ling/grid (kitometros) Serp fries 3 ¹ /9 Tapographie/Photogrammetric (scale, area)	transpatchen, Ccomaclation	all claims .	* 6,300 * 28,928
RELATED TECHNICAL Sampling/assaying Petrographic Mineralographic Metallurgic PROSPECTING (scale, area) PREPARATORY/PHYSICAL Scapped for the second se	transpatution, Accomoclation	all claims .	# 6,300 # 28,928
RELATED TECHNICAL Sampling/assaying Petrographic Mineralographic Metallurgic PROSPECTING (scale, area) PREPARATORY/PHYSICAL Scappoll Scout Cos, inc. 7 Ling/grid (kilometres)/trail Legal surveys (scale, area) Road, local access (kilometres)/trail	transpatcher,	all claims	# 6,300 # 28,928
RELATED TECHNICAL Sampling/assaying Petrographic Mineralographic Metallurgic PROSPECTING (scale, area) PREPARATORY/PHYSICAL Scapport (kitometres) Scapp files 3 ⁱ / ₁ Ing/grid (kitometres) Scapp files 3 ⁱ / ₁ Legal surveys (scale, area) Road, local access (kilometres)/trail Trench (metres)	transpatchor, Sceamodation	all claims .	# 6,300 # 28,928
RELATED TECHNICAL Sampling/assaying Petrographic Mineralographic Mineralographic Metallurgic PROSPECTING (scale, area) PREPARATORY/PHYSICAL Supplied (statemetres) Supplied (statemetres) Legal surveys (scale, area) Legal surveys (scale, area) Road, local access (kilometres)/trail Trench (metres) Underground dev. (metres)	tronspatetor,	all claims .	# 6,300 # 28,928
RELATED TECHNICAL Sampling/assaying Petrographic Mineralographic Mineralographic Metallurgic PROSPECTING (scale, area) PREPARATORY/PHYSICAL Sampling/Photogrammetric (scale, area) Legal surveys (scale, area) Road, local access (kilometres)/trail Trench (metres) Underground dev. (metres) Other	transpatchon, Ccomodation	all claims .	# 6,300 # 28,928

.

.

Table of Contents:

.

•

.

0

.

SUMMARY:	Preface
INTRODUCTION:	1
PROPERTY and LOCATION:	2
ACCESSIBILITY, CLIMATE, INFRASTRUCTURE and PHYSIOGRAPHY:	3
HISTORY:	4
GEOLOGY: Regional Setting Property Geology	6 6
DEPOSIT TYPES:	7
MINERALIZATION:	8
EXPLORATION: Pre – 2008 Exploration Programs 2008 Field Program	9 9
EXPLORATION RESULTS	10
DRILLING:	10
METALLURGICAL TESTING and OTHER INFORMATION:	11
MINERAL RESOURCE ESTIMATES:	11
INTERPRETATION and CONCLUSIONS:	12
RECOMMENDATIONS:	12

.

List of Appendices:

- Appendix A Cost Estimates (Volume I)
- Appendix B References (Volume I)
- Appendix C Technical Report on the Geological and Geochemical Surveys By Gordon J. Allen, P. Geo, December 31, 2009 (Volume II)
- Appendix D Report on Heliborne AeroTEM and Magnetic Survey, February, 2010 By Aeroquest International Ltd. (Volume I)

Appendix E - Writer's Certificate (Volume I)

List of Maps: (all Volume I)

- Figure 1 Location Map
- Figure 2 Regional Geological Map
- Figure 3 Claim Map

Figure 4 - Geological Plan, Showing Resource Areas and Showings

SUMMARY

Discovery Ventures Inc. (Discovery) has entered into two agreements, one with David Javorsky and the second with Richard Billingsley and Dwayne Kress, whereby Discovery can earn a 100% interest in the **Rabbitt Mine** property, an early stage exploration project with no known resource. This report summarizes all data available on the property. The property consists of 19 mineral claims (3856 hectares), located in the Similkameen Mining Division, 10 km west of Tulameen, British Columbia. Well-maintained gravel logging and public roads at Tulameen provide good access to all areas of the property.

Placer gold and platinum was discovered in the Tulameen River in the mid nineteenth century, resulting in the discovery of bedrock source at the Rabbitt Mine in 1887. Earliest production is reported during the period 1938 – 1940 when 1,387 tons were shipped to a smelter yielding some 1,043 ounces of gold. It is believed massive sulphides were discovered at the Red Bird prospect in the early 1900s. All historical exploration was completed during the period 1960 – 1986, which consisted of geological mapping, soil sampling, ground geophysics and 57 diamond drill holes.

The property is located in the Intermontane belt of Triassic volcanic rocks in central British Columbia. In the southern areas of the province, the dominant rock types are volcanic rocks of the Nicola group. The Nicola group is the principal rock group of the property and is the host rocks of most mineralization of value. Intruding the Nicola group are late Triassic felsic intrusive bodies and the Tulameen ultramafic complex. Later Cretaceous and Tertiary sedimentary and volcanic rocks are also present on the property. The structural setting of the property is very complex.

Twelve mineral showings are reported on the property. The Rabbitt mine is a gold bearing quartz vein, having been developed over a strike length of 100 meters and widths up to 3 meters, with values ranging 0.19 - 1.65 opt gold. The Red Bird prospect is a volcanogenic massive sulphide (VMS) occurrence up to 4 meters thick, with values ranging 0.29 - 2.4% copper. The other 10 prospects are either VMS or quartz vein in nature.

Max Investments Inc., on behalf of Discovery, carried out the initial phase of an exploration program on the property during the period October 1 - December 15, 2009. The program consisted of a 401 kilometer airborne TEM and magnetic survey, completed by Aeroquest International Ltd, and a ground grid survey supervised by Gordon J. Allen, P. Geo. at a cost of **\$153,638**.

Results of the airborne TEM survey have identified four conductive zones in the eastern portion of the property that target potential VMS deposits. The ground grid-work was successful in establishing additional targets for gold-bearing vein deposit. Further detailed ground-work is recommended on the property, prior to drilling.



INTRODUCTION

Gold mining in British Columbia has focused on small high grade quartz veins since the late 19th century. Principal areas are in historical camps, such as Goldbridge, Cassiar, Atlin, Barkerville, Likely and the Tulameen, however small economic gold-bearing quartz veins are found in several locations throughout the Province. The lode deposits are often accompanied by rich placer deposits downstream from the lode source. Such is the case along the Tulameen River, northwest of Princeton. Not only is this river recognized for its gold content, rich platinum placer deposits often accompany the gold. The source of the gold and platinum are the gold bearing veins, such as the Rabbitt Mine and platinum bearing veins and structures in the Tulameen ultramafic complex. The Rabbitt Mine property covers several gold bearing quartz veins, including the Rabbitt Mine and a small portion of the ultramafic complex.

David Javorsky, the beneficial owner of the Rabbitt Mine and 4 claims in the western portion of the property, has entered into an option agreement with Discovery Ventures Inc. (Discovery), dated May 27, 2008. Richard Billingsley, Gaye Richards and Dwayne Kress, the beneficial owners of the Redbird Mine and 15 claims in the eastern portion of the property, have entered into an option agreement with Discovery, dated April 28, 2008. Both agreements allow Discovery to earn 100% interest in all nineteen claims, which constitute the Rabbitt Mine property.

During the period October 1 – December 15, 2009, a field program was completed on the Rabbitt Property. Under supervision of Mr. Gord Allen, P. Geo, a surface exploration program was conducted, consisting of detailed grid work, soil and rock-chip sampling and geological mapping over the old Rabbitt Mine and western portion of the property. Results of this program are compiled in a report by Gord Allen (Appendix C). Aeroquest International Ltd of Toronto completed a 401 km airborne TEM survey over the Red Bird showing and eastern portion of the property. Results of this program are documented in a report by Aeroquest International Ltd. (Appendix D). Mr. Chris Dyakowski, President of Max Investments Inc., requested on behalf of Discovery, that I compile all data from these programs and report and prepare this assessment report.



PROPERTY and LOCATION

The property is located in south-central British Columbia, the eastern boundary being 2 kilometers northwest of the village of Tulameen. Tulameen is located 25 kilometers northwest of Princeton. The geographic coordinates of the property are 120 49' west; and 49 34' north (NTS map sheet 92H/10). The Rabbitt Mine property consists of twenty contiguous claims, comprising approximately 4002 hectares. All claims are located in the Similkameen Mining Division. Details of the claims are as follows:

Tenure	Claim Name	Owner	Мар	Area(h/a)	Expiry Date*
567136	RED BIRD 1	146911 (100%)	092H	167.603	Dec 31, 2015
567137	RED BIRD 2	146911 (100%)	092H	20.95	Dec 31, 2015
567139	RED BIRD 3	146911 (100%)	092H	167.61	Dec 31, 2015
567140	RED BIRD 4	146911 (100%)	092H	62.861	Dec 31, 2015
567142	RED BIRD 5	146911 (100%)	092H	188.606	Dec 31, 2015
567143	RED BIRD 6	146911 (100%)	092H	209.513	Dec 31, 2015
567147	RED BIRD 7	146911 (100%)	092H	251.417	Dec 31, 2015
567150	RED BIRD 9	146911 (100%)	092H	167.642	Dec 31, 2015
569050	RED BIRD NORTH 1	146911 (100%)	092H	62.883	Dec 31, 2015
569051	RED BIRD NORTH 2	139085 (100%)	092H	125.652	Dec 31, 2015
569055	RED BIRD NORTH 3	139085 (100%)	092H	439.815	Dec 31, 2015
569056	RED BIRD NORTH 4	139085 (100%)	092H	314.134	Dec 31, 2015
569070	REB BIRD NORTH 8	139085 (100%)	092H	146.574	Dec 31, 2015
584997	RED BIRD 7	139085 (100%)	092H	20.94	Dec 31, 2015
567149	RED BIRD 8	139085 (100%)	092H	419.577	Dec 31, 2015
531472	RABBITT GOLD MINE	113058 (100%)	092H	524.02	Dec 31, 2015
531477	BEAR CREEK	113058 (100%)	092H	419.111	Dec 31, 2015
531506	RABBITT MINE ROAD	113058 (100%)	092H	125.735	Dec 31, 2015
563616	DJ	113058 (100%)	092H	20.955	Dec 31, 2015
601860	LOCKIE CREEK PT	113058 (100%)	92H	41.900	Mar 30, 2010
639823	LAWLESS	113058 (100%)	92H	104.740	Dec 31, 2015

Total

4002.238h/a

*Expiry dates are as documented at Mining Recorder's records on February 08, 2010, and are contingent on the acceptance of this report.

Six of the claims are recorded in the name of David Javorsky (113058). Mr. Javorsky has entered into agreement with Discovery Ventures Inc. dated April 28, 2008, whereby Discovery can earn a 100% interest in the claims by paying \$115,000 and 200,000 shares of Discovery to the vendor over a four year period, subject to a 2% Net Smelter Royalty (NSR). The NSR can be purchased by Discovery for \$1,000,000 per percentage point.



Fifteen of the claims are recorded in the name of Richard John Billingsley (139085) and Dwayne Edward Kress (146911). Messrs. Billingsley and Kress have entered into an agreement dated May 27, 2008 with Discovery Ventures Inc., whereby Discovery can earn a 100% interest in the claims by paying \$50,000 to the vendors over a three year period. The claims are subject to no residual NSR or Net Profits interest.

Four old crown-granted mineral claims are noted on the Tulameen River in the southern portion of the Javorsky claims. It has been verified at the land titles office in Kamloops, B.C. that all (Lots 72, 79 and 1191) but one of these crown-grants has reverted to the Crown (see Figure 3 for details). The Wild Cat crown-grant (Lot 1189) covering the El Alamein mine is believed to be owned and maintained by other interests. This crown-granted claim is not located in areas of recommended work. Much of the area in the southeast portion of the Billingsley/Kress claims is covered by deeded land title lots, which include only surface rights. Exploration and development work on these lots will require permission of the owners.

ACCESSIBILITY, CLIMATE, INFRASTRUCTURE and PHYSIOGRAPHY

The property is accessed along well-maintained gravel roads from Tulameen or the Coquihalla Highway. Access to the Rabbitt Mine is best accessed from Tulameen along the Tulameen River road 7 miles west to an old road only accessible by 4WD All terrain vehicles a distance of 3.5 kilometers in a northerly direction. Several well-maintained to 4WD roads provide access to all areas of the property.

The Rabbitt Mine prospect is located on the eastern flank of the Coast Mountain Range, where a transition from high rainfall in the mountains to semi-arid conditions of the interior prevails. The property is very steep and rugged, with outcrop exposed in all areas. River valleys generally form steep canyons. Overall relief is 700 meters, elevations ranging 820 meters (asl) in the Tulameen River valley to 1530 meters (asl) on top of Mount Rabbitt. Vegetation is typical interior forest cover of fir, hemlock, balsam and pine, with some open grass-lands. Portions of the claims have been logged by clear-cut logging methods.

Climate is typical interior British Columbia weather patterns, the property being snow-free May until November. Exploration should be conducted during this period. The location is suited for year round development and mining.

Infra-structure, including power, water, and labour are all located within 20 kilometers of the property. The property is well-facilitated for all aspects of a large mining operation, including adequate areas for plant, waste and tailing disposal, and other recovery designs.

HISTORY

Placer gold and platinum was discovered in the Tulameen River in the mid nineteenth century, resulting in the discovery of bedrock sources in the latter part of the century. Gold was discovered at the Rabbitt Mine in 1887 and a short tunnel was driven later in the same year. Earliest production is reported during the period 1938 - 1940 when 1,387 tons were shipped to a smelter yielding some 1,043 ounces of gold. The mine shut down in 1940.

It is believed the other gold vein prospects on the property, including the Sunrise, the Bonanza Queen, the Redbird, the Hilltop, and Lloyd George were discovered in the early 20th century. There is no documented production from any of these prospects.

Gold at the El Alamein showing was discovered in 1937, which led to a small mine operation by El Alamein Mines Ltd. in 1949/50, recovering 215 ounces of gold. This mine is located along the southern boundary of the property, and is believed to be owned by other parties under crown-grant.

The area remained dormant until the 1960s, when the several operators, including Mr. David Javorsky, located mining claims covering the various mineral showing in the area. The following summarizes the work since 1962:

<u>1962 – 1968</u>: Copper Mountain Consolidated Ltd. completed trenching, geophysical surveys and 5 diamond drill holes (381 meters) on the Red Bird showing. Results of this program are not available.

<u>1975 – 1979</u>: The Rabbitt Mine was owned by Mr. Javorsky, who optioned the claims to unknown operators. It is reported that several bulk-sample shipments were made from the mine in 1978 and 1979. Results of this work is not documentd.

<u>1978 – 1990</u>: Kenam Resources Ltd. and Brican Resources Ltd. controlled the eastern portion of the property, including the Red Bird showing, and with various operators completed extensive geological mapping, soil geochemistry and ground geophysics. There was no reported drilling completed during this period.

<u>1982 – 1988</u>: During this period, Monica Resources Ltd. completed a substantial exploration program over the area of the Rabbitt mine, including a 20 hole diamond drill program (1102m), geological mapping, geochemistry and limited geophysical surveys. Reference is made to several (30) drill holes being drilled on the property in earlier years, however data from this work is not documented.

<u>1995 - 1997</u>: Goosmus Mining and Exploration Ltd. controlled the Rabbitt Mine and attempted to compile as much historical data as possible on the property. There is no recorded exploration during this period.

<u>1999/2000</u>: A private Alberta company gained control of the Rabbitt Mine, completing no evident work programs.

All historic claims expired in the early 2000s.

<u>2006 - 2008</u>: The claims were located by Messrs Javorsky, Billingsley and Kress, who optioned the claims to Discovery Ventures Inc. in 2008. An airborne magnetometer and VLF-EM survey was completed by Discovery in August, 2008.

<u>2009</u>: During the period October 1 – December 15, 2009, an airborne geophysical survey and detailed ground work consisting of grid establishment, soil and rock geochemistry and geological mapping was completed

This report integrates the results of 2009 field program into historical data and provides the material to recommend ongoing work programs on the property.

GEOLOGY

Regional Setting

The project area lies within the Intermontane belt of Mesozoic rocks between Princeton and Merritt. This belt of rocks carries south into the United States and north into the Yukon Territory. The distinguishing and oldest rock group in this belt is the volcanic and sedimentary rocks of the Triassic Nicola group. Preto (Bulletin 69) has subdivided this group into the western, central, and eastern facies. The eastern facies is dominantly intermediate purple/gray/green flows, breccias, tuffs, lahar breccias, with minor sandstones and siltstones. The central facies is intermediate to basic flows, breccias and tuffs, with more dominant limestone, siltstone, argillite, and conglomerate. The western facies is acidic to intermediate flows, breccias and tuffs, with minor limestone.

Intruding the Nicola volcanics are numerous stocks, sills, small plutons, batholiths and dikes of various ages and of a varied composition. The largest intrusion in the area is the early Jurassic Tulameen ultramafic complex, which is defined as a layered Alaskan-type u/m body with a significant dunite core grading to peridotites, pyroxenites and gabbros towards the outer rim. The northeast corner of this body is located in the western portion of the property.

Other intrusive rocks are more acidic in composition, however most are alkalic in nature, the most dominant body being the Eocene Otter Lake intrusion in the eastern portion of the property. The most dominant rock descriptions of the late intrusions are diorite, monzonite and granodiorite.

The lower Cretaceous Kingsvale Group and Spences Bridge Group of mixed volcanic and sedimentary rocks unconformably overly the Nicola group and earlier intrusions. These rocks are intermediate to felsic flows, tuffs, ash flows, lahar breccias and clastic sediments. Overlying all rocks are Eocene basalts, andesites and sediments of the Princeton Group and sedimentary rocks of the Coldwater beds.

Property Geology

The geology of the property is shown on Figure 4. Detailed geological and lithological descriptions are contained in the geological section of Gord Allen's report (Appendix C – Volume II).

In summary, the dominant rock types of the property are volcanic and sedimentary rocks of the western and central facies of the Triassic Nicola group, the Jurassic Tulameen ultramafic body and stocks and small batholiths of Triassic diorites and monzonites. The Tulameen u/m body occupies the western portion of the property and the Otter Lake intrusion occupies the eastern portion of the property.

The central facies of the Nicola group has been subdivided into three basic units; flows, pyroclastics and sediments. The flows are most abundant and are described as purple/green amygdaloidal augite andesite with interbedded trachyandesite feldspar porphyry. The pyroclastic units are massive to finely bedded crystallithic andesite tuffs with interbedded siltstone and light gray/green dacite tuff. Graded bedding is locally identified, with occasional diagnostic lapilli sized fragments, common to explosive breccias and lahars.

The sediments are dominantly interbedded greywacke, siltstone and minor conglomerate and massive beds of gray to light brown limestone. All Triassic rocks are hornfelsic in nature near the contact of intrusions. Some of the sedimentary horizons have developed slaty and/or schistose cleavages.

The western facies rocks are the youngest sequence of the Nicola group and are dominantly plagioclase rich andesite, dacite and lesser rhyolite flows, breccias, lithic tuffs and pyroclastic rocks. Sediments are less abundant than the other facies, however limestone beds are common.

The Tulameen ultramafic rocks occupy the western portion of the property. Most rocks encountered are periphery pyroxenites and gabbro. Alteration of some of these rocks to serpentine is present. Two small satellite ultramafic intrusuions are present in the central portion of the property

The later felsic intrusive rocks on the property have been classified as alkalic late Tertiary granodiorite and quartz diorite, and are located in the eastern portion of the property (Otter Lake intrusion) and as small stocks in all areas of the property. One small sliver of the Tertiary intrusions is located within the ultramafic rocks in the western portion of the property.

A small finger of the late Cretaceous Spences Bridge Group of volcanic rocks occurs in the north boundary of the property. Tertiary sediments of the Princeton Group are found in the southeastern corner of the property. Late felsic and porphyritic dike swarms are found in all areas of the property, dominantly in the contact area of the Otter Lake batholith. The ages are unknown, however are probably related to intrusive activity. Very late basic dikes are related to Tertiary vulcanism. These dikes are post-mineralization.

Major structures have been identified on government geological maps and are identified on Figure 4.

DEPOSIT TYPES

The geological environment is suited to host a number of deposit types. The principal targets are gold-bearing quartz veins, similar to the Rabbitt mine and copper, gold, silver, lead and zinc VMS deposits similar to the Red Bird prospect. Secondary targets are platinum/palladium vein and/or layered deposits in the Tulameen ultramafic complex, porphyry copper (gold, molybdenum) deposits in the various intrusive rocks in the eastern portion of the claims, and skarn deposits in limestone adjacent to intrusive bodies.

MINERALIZATION

.

Mineralization noted on the property is discussed in detail in Gord Allen's report (Appendix C – Volume II) mainly related to the interpreted structures and small intrusive bodies. In total, twelve old mineral prospects are reported on the property.



EXPLORATION

Historical Exploration Programs:

Exploration Programs were conducted on the property during the period 1965 - 1986 by various operators, and are detailed in the <u>History of Exploration</u> section of this report. In summary, 50 diamond drill holes have been drilled in the area of the Rabbitt mine. Extensive geophysics, geochemistry and geological mapping programs were also completed. Results of most of these programs are well documented as assessment reports.

In June, 2008, Max Investments Inc., on behalf of Discovery Ventures Inc., commissioned a 425 line kilometer airborne geophysical survey to Canadian Mine Geophysics (CMG). The survey covered the entire property area and was flown on lines spaced at 200 meter intervals.

The purpose of the survey was to determine the geophysical signatures over known mineralized showings, to detect other areas of potential mineralization, and to provide data that may be useful in the interpretation of geology, including lithologies, structures and alteration zones. The interpretation of magnetic data is useful for understanding lithologies and structures as well as identifying potential magnetic bodies. The interpretation of electromagnetic data is useful in understanding geological structures, identifying electromagnetic anomalies and supporting magnetite content in identified magnetic anomalies.

2009 Exploration Program:

The geological and geochemical portion of the program commenced on October 5 and was completed by October 2, 2009. The program was supervised by Gordon J. Allen, P. Geo, and the results are detailed and documented in his report (Appendix C - Volume II).

In summary, a 34.8 km compass and chain grid was established over the Rabbitt mine and Sunshine showing area. Soils were collected at 50 meter intervals along all lines where possible. Soils were analyzed by 1DX-MS methods for 36 elements at the Vancouver Laboratories of Acme Analytical Laboratories Ltd. Results are plotted showing values of gold, silver and copper, and anomalous results are summarized for arsenic, lead, zinc and nickel.

The grid area was mapped, with particular detail focusing on old showing and mine areas. Rock chip samples were collected from mineralized outcrop areas, old pits, tunnels and excavations. In addition, some regional prospecting and mapping was completed in the eastern portion of the property, not covered by the grid.

The 401 km airborne TEM survey was completed by Aeroquest International Ltd. during the period December 7 - 9, 2009, and presented in a report by Aeroquest and dated February, 2010 (Appendix D). Project costs for the entire program was **\$153,638.47** (see Appendix A for details).

The results of each surveyed area and portion of this program are well-documented in Appendix C (Geochemical and Geological Report) and Appendix D (Airborne Geophysical Report). These results are summarized below:

- 1) The grid and ground surveys over the Rabbitt Mine area identified strike extensions of the main Rabbitt Mine vein in a north and south direction.
- 2) The compilation of drill results on the main Rabbitt Mine identified that only the northeast vein was drilled in detail. Only one drill hole penetrated the north/south vein.
- 3) Several other target areas within the grid identified areas of other potential gold-bearing veins, especially the north-western area of the grid.
- 4) Visual examination of known VMS occurrences did not identify targets of further interest, however did confirm the presence of VMS style mineralization.
- 5) The airborne TEM Survey identified six strong electromagnetic conductors, four located in Triassic Nicola volcanic rocks and two located in Eocene Princeton Group volcanic and sediments.
- 6) Two of the conductors in the Princeton Group are possibly related to carboniferous or graphitic sediments and are considered of no interest.
- 7) The four conductors located in the Nicola volcanic are related to known VMS occurrences, and probably reflect extensions of VMS horizons.
 - a) The main target zone is 2500 meter lineament in the north-central portion of the property. The southern extension of this conductor falls on the Hilltop Showing, and a southeastern splay of the conductor may be associated with the Red Bird Showing. The entire northern extension of this conductor provides the best target for further detailed ground grid, soil sampling and geological mapping.
 - b) Two conductors are identified in the western portion of the flight area, one associated with the Brandy VMS Showing. These two conductors may be related due to fault offset, and provide a target area for further detailed grid, soil and geological mapping.
 - c) One east/west trending 800 meter lineament is interpreted in the southern portion of the property. This target has no associated showings and is considered worthy of prospecting and reconnaissance geochemistry.

DRILLING

There is recorded reference of historical diamond drilling having been completed on the Rabbitt mine and Red Bird prospects. Results and data from drill programs (20 holes, totalling 1102 meters) on the Rabbitt mine in the 1980s are documented in assessment reports. Earlier drilling, reported to be 30 holes, is not documented. Gordon Allen summarizes location and results of this drilling in his report (Appendix C – Volume II)

Five holes, totalling 381 meters were drilled on the Red Bird property in the 1960s. Results of this work are poorly documented in public records, and are not summarized in this report.

.

METALLURGICAL TESTING and OTHER INFORMATION

.

.

.

.

.

.

There is no documented history of metallurgical testing on the property. There is no other relevant information pertaining to the property that the writer is aware of.

MINERAL RESOURCE ESTIMATES

There are no documented reports of mineral resource estimates ever being completed on this property. A mineral resource has not been confirmed by sampling or drill testing.

INTERPRETATION and CONCLUSIONS

A mineral resource has not been discovered on the property at this time. For this reason, the property is considered an early stage exploration project, with excellent potential of discovering a resource.

The grid soil and rock-chip sampling and geological mapping program identified several targets in the vicinity of the Rabbitt Mine that are worthy of further follow-up exploration. In addition, most of the drilling in the vicinity of the old Rabbitt Mine was completed on the northeasterly trending vein. The north by northwesterly vein has been underexplored. Northwest and southeast extensions to this vein are indicated by soil geocehemistry and mapping. Further detailed mapping and soil sampling are suggested in these promising areas and vein extensions.

The airborne TEM and magnetic survey identified four targets of potential VMS style mineralization. Two of these target areas are related to known VMS occurrences.

RECOMMENDATIONS

Further ground surveys are recommended in the following areas of the property:

- Further detailed grid work on the north and south extension of the main Rabbitt Mine vein. Grid line density is to be established at 50 meter intervals and samples collected at 25 meter intervals along all lines.
- 2) Detailed grid work at similar line and sample spacing in the western portion of the gris area covering known anomalous stations.
- 3) Detailed grid work on the four airborne TEM anomalies, consisting of soil geochemistry and geological mapping.
- 4) Drilling should only be considered on the main N/S trending Rabbitt Mine vein at the present time. It may be more prudent to evaluate drilling after completion of gridwork surveys.

Submi ers John 🕏 ng. February 10, 2010

Appendix A – Exploration Cost Statement

Appendix A – Exploration Cost Statement

.

.

.

ş.

٠

Costs and Details of Work Performed on the Rabbitt Mine Property during the 2009 Exploration Program

WAGES and CONTRACTS:		
C. Dyakowski, P. Geo Project Manager 5 Days@ 500/day		\$2,500.00
John R. Kerr, P.Eng- Program Planning and Site Examination		
22 hrs @ \$90/hr		1,980.00
Gordon Allen, P. Geo		
Geological mapping and mineral showing examination		
26 days @ \$550/day		14,300.00
Expenses including meals and fuel		2,412.12
Data compilation, maps and report writing		
27.5 days @ \$550/day		15,125.00
David Javorsky, Prospector - Guiding, prospecting and sampling		
21 days @ \$300/day		6,300.00
Landmark Systems Inc - Consulting services		
4 days@\$500/day		2,000.00
Aeroquest Limited - Airborne TEM and Magnetic Geophysical Survey	•	57,685.00
Rainbow & Sunshine Holdings Ltd – Grid-work and Soil Sampling		
37.5 km @ \$625/km		23,437.50
TRANSPORTATION		
Ford F350 (9 days@ $100/day$)		900.00
Chev P/U (22 days $@$ \$75/day)		1 650 00
ATV rental (3 wks $@$ 400/wk)		1 200 00
Fuel		450.00
1 401		+50.00
ACCOMMODATION: Villager Inn Princeton, B.C.		2,700.00
Misc meals and snacks		317.00
		01,100
FIELD SUPPLIES: Deakin Industries		106.75
		15 500 (0
ASSAYING: Acme Labs		15,508.69
REPORT PREPARATION:		
John R. Kerr, P. Eng 42 hours @ 90/hour	3.780.00	
Drafting	150.00	
Photocopying and Report Binding	1,136.41	5,066.41
TOTAL	\$ 15	3,638.47

\$ 153,638.47

Appendix B – References

۰.

.

REFERENCES

2010, Report on Heliborne AeroTEM and Magnetic Survey, Rabbitt Mine Property By Aeroquest International Ltd., February, 2010

2009, Gordon J. Allen, P. Geo. Technical Report on the Geological and Geochemical Surveys on the Rabbitt Mine Property, British Columbia, December 31, 2009

2008, Sean Scrivens, P. Geo, Canadian Mine Geophysics Ltd. – Report on a Helicopter-borne Magnetic Gradiometer &VLF-EM Survey Tulameen, B.C., October 6, 2008

1999, J. Douglas Branchflower – Report on the Rabbitt Property, Similkameen Mining Division for 801358 Alberta Ltd., May 28, 1999

1995, Thomas R. Tough, P. Eng. – Summary Geological Report on the Rabbitt Property, for Goosmus Mining and Exploration Inc., August 18, 1995

1994, F. Marshall Smith, FGAC – Letter to Goosmus Mining and Exploration Inc. July 20, 1994

1979, V. A. Preto, P. Eng. – Bulletin 69, Geology of the Nicola Group between Merritt and Princeton, British Columbia Ministry of Energy, Mines and Petroleum Resources

- 1969 1990, Various Assessment Reports from Ministry of Energy, Mines and Petroleum Resources files (too numerous to list)
- 1965 1999, Annual Reports and Mineral Inventory Files, Ministry of Energy, Mines and Petroleum Resources.
- 1947, H.M.A. Rice, PhD Memoir 243, Geological Survey of Canada Geology of the Princeton Area

Appendix C – Technical Report on the Geological and Geochemical Surveys Rabbitt Mine Property, By Gordon J. Allen, P. Geo.

.

.

See Volume II

Appendix D – Results of the Airborne TEM Survey By Aeroquest International Ltd., February, 2010 •

.

Report on a Helicopter-Borne AeroTEM System Electromagnetic & Magnetic Survey



Aeroquest Job # 10-007

Rabbit Mine Property Princeton, B.C., Canada NTS 092H10 For

Max Investments Inc.

On behalf of Discovery Ventures Inc.

by



7687 Bath Road, Mississauga, ON, L4T 3T1 Tel: (905) 672-9129 Fax: (905) 672-7083 www.aeroquest.ca

Report date: February 2010

Report on a Helicopter-Borne AeroTEM System Electromagnetic & Magnetic Survey

Aeroquest Job # 10-007

Rabbitt Mine Property

Princeton, B.C., Canada NTS 092H10

For

Max Investments Inc.

On behalf of Discovery Ventures Inc.

3750 West 49th Avenue Vancouver, BC, Canada V6N-3TB

by

AEROQUEST

7687 Bath Road, Mississauga, ON, L4T 3T1 Tel: (905) 672-9129 Fax: (905) 672-7083 <u>www.aeroquest.ca</u>

Report date: February 2010



-

TABLE OF CONTENTS

.

TABLE OF CONTENTSi
LIST OF FIGURES
LIST OF MAPS (1:10,000)
1. INTRODUCTION
2. SURVEY AREA
3. SURVEY SPECIFICATIONS AND PROCEDURES
3.1. Navigation43.2. System Drift43.3. Field QA/QC Procedures4
4. AIRCRAFT AND EQUIPMENT
4.1. Aircraft54.2. Magnetometer64.3. Electromagnetic System64.4. AeroDAS Acquisition System74.5. Magnetometer Base Station84.6. Radar Altimeter84.7. Video Tracking and Recording System94.8. GPS Navigation System94.9. Digital Acquisition System9
5. PERSONNEL
6. DELIVERABLES
6.1. Hardcopy Deliverables106.2. Digital Deliverables106.2.1. Final Database of Survey Data (.GDB)106.2.2. Geosoft Grid files (.GRD)106.2.3. Digital Versions of Final Maps (.MAP, .PDF)116.2.4. Google Earth Files (.kmz)116.2.5. Free Viewing Software (.EXE)116.2.6. Digital Copy of this Document (.PDF)11
7. DATA PROCESSING AND PRESENTATION11
7.1. Base Map117.2. Flight Path & Terrain Clearance127.3. Electromagnetic Data127.4. Magnetic Data13
8. General Comments
8.1. Magnetic Response138.2. Apparent Resistivity138.3. EM Anomalies13
APPENDIX 1: Survey Boundaries



APPENDIX 2: Description of Database Fields	. 17
APPENDIX 3: AeroTEM Anomaly Listing	. 18
APPENDIX 4: AeroTEM Design Considerations	. 22
APPENDIX 5: AeroTEM Instrumentation Specification Sheet	. 28

LIST OF FIGURES

Figure 1. Rabbitt Mine Property with flight path, overlain on shaded topography	3
Figure 2. Helicopter registration number C-GLOV	5
Figure 3. The magnetometer bird (A) and AeroTEM III EM bird (B)	6
Figure 4. Schematic of Transmitter and Receiver waveforms	7
Figure 5. AeroTEM III Instrument Rack	7
Figure 6. Digital video camera typical mounting location.	9
Figure 7. AeroTEM response to a 'thin' vertical conductor1	4
Figure 8. AeroTEM response for a 'thick' vertical conductor1	4
Figure 9. AeroTEM response over a 'thin' dipping conductor1	5

LIST OF MAPS (1:10,000)

- TMI Total Magnetic Intensity (TMI) with line contours and EM anomaly symbols.
- Z1-OFF– AeroTEM Z1 Off-time with line contours, and EM anomaly symbols.
- EM AeroTEM off-time profiles Z3 Z13, and EM anomaly symbols.
- DTM Digital Terrain Model with line contours, and EM anomaly symbols.
- RES Early Off-time Resistivity, and EM anomaly symbols.



1. INTRODUCTION

This report describes a helicopter-borne geophysical survey carried out on behalf of Max Investments Inc. for Rabbit Mine Property, near Princeton, B.C.

The principal geophysical sensor is Aeroquest's exclusive AeroTEM III (Mike) time domain helicopter electromagnetic system which is employed in conjunction with a high-sensitivity caesium vapour magnetometer. Ancillary equipment includes a real-time differential GPS navigation system, radar altimeter, video recorder, and a base station magnetometer. Full-waveform streaming EM data is recorded at 36,000 samples per second. The streaming data comprise the transmitted waveform, and the X component and Z component of the resultant field at the receivers.

The total survey coverage is 401 line-km, of which 371 line-km fell within the defined project area (Appendix 1). The survey was made up of one block, flown at 50 metre line spacing and at $75^{\circ}/345^{\circ}$ flight direction (Table 1). The survey flying described in this report took place from December 7^{th} - December 9^{th} , 2009. This report describes the survey logistics, the data processing, presentation, and provides the specifications of the survey.

2. SURVEY AREA

The Project area is located in central B.C. The survey consisted of one block, Rabbit Mine Property and was located approximately 25 kilometres Northwest of Princeton, B.C. The base of survey operations was at Princeton, B.C.



Figure 1. Rabbitt Mine Property with flight path, overlain on shaded topography



Job # 10-007

3. SURVEY SPECIFICATIONS AND PROCEDURES

The survey specifications are summarised in the following table:

Project Name	Line/Tie Spacing (metres)	Line Direction	Survey Coverage (line-km)	Date flown
Rabbit Mine Property	50/500	75°/345°	401	December 7 th - December 9 th , 2009

Table 1. Survey specifications summary

The survey coverage was calculated by summing 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 50 metres. The control (tie) lines were flown perpendicular to the survey lines with 500 metres, tie line spacing.

The nominal EM bird terrain clearance is 30 metres, but can be higher in more rugged terrain due to safety considerations and the capabilities of the aircraft. The magnetometer sensor is mounted in a smaller bird connected to the tow rope 30.5 metres above the EM bird and 18.3 metres below the helicopter (Figure 3). 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 36,000 samples per second and is processed to generate final data at 10 samples per second. The 10 samples per second translate to a geophysical reading about every 1.5 to 2.5 metres along the flight path.

3.1. 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 less than 3 metres. A recent static ground test of the Mid-Tech WAAS GPS yielded a standard deviation in x and y of less than 0.6 metres and for z less than 1.5 metres over a two-hour period.

3.2. SYSTEM DRIFT

Unlike frequency domain electromagnetic systems, the AeroTEM III 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.

3.3. FIELD QA/QC PROCEDURES

On return of the pilot and operator to the base, usually after each flight, the AeroDAS streaming EM 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.

4. AIRCRAFT AND EQUIPMENT

4.1. AIRCRAFT

A Eurocopter (Aerospatiale) SA 315B - registration C-GLOV was used as survey platform. The helicopter was owned and operated by Hi-Wood Helicopters Ltd. Installation of the geophysical and ancillary equipment was carried out by Aeroquest Limited personnel in conjunction with a licensed aircraft. The survey aircraft was flown at a nominal terrain clearance of 275 ft (82metres).



Figure 2. Helicopter registration number C-GLOV



4.2. MAGNETOMETER

The AeroTEM III airborne survey system employs the Geometrics G-823A caesium vapour magnetometer sensor installed in a two metre towed bird airfoil attached to the main tow line, 18.3 metres below the helicopter (Figure 3). The sensitivity of the magnetometer is 0.001 NanoTesla at a 0.1 second sampling rate. The nominal ground clearance of the magnetometer bird is 60.5 metres (198 ft.). The magnetic data is recorded at 10 Hz by the ADAS.

4.3. ELECTROMAGNETIC SYSTEM

The electromagnetic system is an Aeroquest AeroTEM III time domain towed-bird system (Figure 3). The current AeroTEM III transmitter dipole moment is 179 kNIA. The AeroTEM bird is towed 48.8 metres (160 ft) below the helicopter. More technical details of the system may be found in Appendix 5.

The wave-form is triangular with a symmetric transmitter on-time pulse of 1.10 ms and a base frequency of 90 Hz (Figure 4). The current alternates polarity every on-time pulse. During every Tx on-off cycle (180 per second), 200 contiguous channels of raw X and Z component (and a transmitter current monitor, itx) of the received waveform are measured. Each channel width is 27.78 microseconds starting at the beginning of the transmitter pulse. This 200 channel data is referred to as the raw streaming data. The AeroTEM system has one separate EM data recording stream, the newly designed AeroDAS system which records the full waveform (Figure 5).



Figure 3. The magnetometer bird (A) and AeroTEM III EM bird (B)





Figure 4. Schematic of Transmitter and Receiver waveforms

4.4. AERODAS ACQUISITION SYSTEM

The 200 channels of raw streaming data are recorded by the AeroDAS acquisition system (Figure 5) onto a removable hard drive. In addition the magnetic, altimeter and position data are also recorded in it, six channels of real time processed off-time EM decay in the Z direction and one in the X direction can be viewed on a color monitor on board, these channels are derived by a binning, stacking and filtering procedure on the raw streaming data.

The primary use of the displayed EM data (Z1 to Z6, X1), magnetic and altimeter is to provide for real-time QA/QC on board.



Figure 5. AeroTEM III Instrument Rack



Job # 10-007

The streaming data are processed post-survey to yield 33 stacked and binned on-time and offtime channels at a 10 Hz sample rate. The timing of the final processed EM channels is described in the following table:

Average Average	TxOn -9.5288 TxSwitch 878.1358	us us			
Average	TxOff 1/02.531	9 us . mine midth			(
Cr	nannel Sample Rang	e Time Width	(us) Time Center	(us) Time After TXOn	(us)
Onl	5 - 5	27.8	125.0	134.5	
On2	0 - 0	27.8	152.8	162.3	
On3	/ - /	27.8	180.6	190.1	
On4	8 - 8	27.8	208.3	217.9	
Un5	9 = 9	27.8	236.1	245.6	
0n6	10 - 10	27.8	263.9	2/3.4	
On /	11 - 11	27.8	291.7	301.2	
Un8	12 - 12	27.8	319.4	329.0	
0n9	13 - 13	27.8	347.2	356.8	
0110	14 - 14	27.8	375.0	384.5	
0111	15 - 15	27.8	402.8	412.3	
0n12	16 - 16	27.8	430.6	440.1	
0n13	1/ - 1/	27.8	458.5	467.9	
0n14	18 - 18	27.8	486.1	495.6	
0n15	19 - 19	27.8	513.9	523.4	
OUIP	20 - 20	27.8	541.7	551.2	
Channel	Sample Range Tim	e Width (us)	Time Center (us)	Time After TxOff (us)	
Off0	65 - 65	27.8	1791.7	89.1	
Off1	66 - 66	27.8	1819.4	116.9	
Off2	67 - 67	27.8	1847.2	144.7	
Off3	68 - 68	27.8	1875.0	172.5	
Off4	69 - 69	27.8	1902.8	_ 200.2	
Off5	70 - 70	27.8	1930.6	228.0	
Off6	71 - 73	83.3	1986.1	283.6	
Off7	74 - 76	83.3	2069.4	366.9	
Off8	77 - 79	83.3	2152.8	450.2	
Off9	80 - 82	83.3	2236.1	533.6	
Off10	83 - 87	138.9	2347.2	644.7	
Off11	88 - 92	138.9	2486.1	783.6	
Off12	93 - 99	194.4	2652.8	950.2	
Off13	100 - 109	277.8	2888.9	1186.4	
Off14	110 - 124	416.7	3236.1	1533.6	
Off15	125 - 148	666.7	3777.8	2075.2	
Off16	149 - 186	1055.6	4638.9	2936.4	

4.5. MAGNETOMETER BASE STATION

The base magnetometer was a Geometrics G-859 caesium vapour magnetometer system with integrated GPS. Data logging and UTC time synchronisation was carried out within the magnetometer, with the GPS providing the timing signal. The 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 of low magnetic gradient and 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 variation.

4.6. 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. Therefore, the recorded data reflect the height of the helicopter above the ground. The Terra altimeter has an altitude accuracy of +/-1.5 metres.



4.7. VIDEO TRACKING AND RECORDING SYSTEM

A high resolution digital colour 8 mm 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 6. Digital video camera typical mounting location.

4.8. 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 less than 3 metres.

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 10 N projection. The real-time differentially corrected GPS positional data was recorded by the AeroDAS system in geodetic coordinates (latitude and longitude using WGS84) at 0.2 s intervals.

4.9. DIGITAL ACQUISITION SYSTEM

The AeroTEM received waveform sampled during on and off-time at 200 channels per decay, 180 times per second, was logged by the proprietary AeroDAS data acquisition system. The streaming data was recorded on a removable hard-drive and was later backed-up onto DVD-ROM from the field-processing computer.



5. PERSONNEL

The following Aeroquest personnel were involved in the project:

- Operations Project Manager: Troy Will
- Field Data Processor: Thomas Wade
- Field Operator: Viktor Shevchenko
- Data Interpretation and Reporting: Chris Kahue, Liz Johnson

The survey pilot, Ted Slavin, was employed directly by the helicopter operator – HiWood Helicopters Ltd.

6. DELIVERABLES

6.1. HARDCOPY DELIVERABLES

The report includes a set of four 1:10,000 maps and the following four geophysical data products are delivered:

- TMI-Total Magnetic Intensity (TMI) with line contours and EM anomaly symbols.
- Z1-OFF– AeroTEM Z1 Off-time with line contours, and EM anomaly symbols.
- EM AeroTEM off-time profiles Z3 Z13, and EM anomaly symbols.
- DTM Digital Terrain Model with line contours, and EM anomaly symbols.
- RES Early Off-Time Resistivity with line contours, and EM anomaly symbols.

The coordinate/projection system for the maps is NAD83 – UTM Zone 10 N. For reference, the latitude and longitude in WGS84 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 off-time conductance, a thick or thin classification and an anomaly identifier label. The anomaly symbol legend and survey specifications are displayed on the left margin of the maps.

6.2. DIGITAL DELIVERABLES

6.2.1. Final Database of Survey Data (.GDB)

The geophysical profile data is archived digitally in a Geosoft GDB binary format database. A description of the contents of the individual channels in the database can be found in Appendix 2. A copy of this digital data is archived at the Aeroquest head office in Mississauga.

6.2.2. Geosoft Grid files (.GRD)

Levelled Grid products used to generate the geophysical map images. All grids have 10 m cell size.

- Total Magnetic Intensity (10-007_magu.grd)
- AeroTEM Z Offtime Channel 1 (10-007_zoff1.grd)
- Digital Terrain Model (10-007_dtm.grd)
- Early Time Resistivity EM Channel 1 (10-007 Resistivity ZOff1.grd)



- Job # 10-007
 - Restivity Depth Slice 100 Meters (10-007 Resistivity 100m.grd)
 - Restivity Depth Slice 150 Meters (10-007 Resistivity 150m.grd)

6.2.3. Digital Versions of Final Maps (.MAP, .PDF)

Map files in Geosoft .map and Adobe PDF format.

6.2.4. Google Earth Files (.kmz)

Flight navigation lines, EM Anomalies and geophysical grids in Google earth kmz format. Double click to view in Google Earth.

6.2.5. Free Viewing Software (.EXE)

- Geosoft Oasis Montaj Viewing Software
- Adobe Acrobat Reader
- Google Earth Viewer

6.2.6. Digital Copy of this Document (.PDF)

Adobe PDF format of this document.

7. 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 36-inch and 42-inch wide Hewlett Packard ink-jet plotters.

7.1. BASE MAP

The geophysical maps accompanying this report are based on positioning in the NAD83 datum. The survey geodetic GPS positions have been projected using the Universal Transverse Mercator projection in Zone 10 North. A summary of the map datum and projection specifications is given following:

- 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 10 (Central Meridian 123°W)
- Central Scale Factor: 0.9996
- False Easting, Northing: 500,000m, 0m

For reference, the latitude and longitude in WGS84 are also noted on the maps.

The background vector topography was sourced from Natural Resources Canada 1:50000 National Topographic Data Base data and the background shading were derived from NASA Shuttle Radar Topography Mission (SRTM) 90 metre resolution DEM data.



Job # 10-007

7.2. 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 (5 Hz) 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. These high elevation checks are to ensure that the gain of the system remained constant and within specifications.

7.3. ELECTROMAGNETIC DATA

The raw streaming data, sampled at a rate of 36,000 Hz (200 channels, 180 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. 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, levelled and split up into the individual line segments. Further base level adjustments may be carried out at this stage. The filtering of the stacked data is designed to remove or minimize high frequency noise that cannot be sourced from the geology.

The final field processing step was to merge the processed EM data with the other data sets into a Geosoft GDB file. The TS "time stamp" and EM Fiducial are used to synchronize the two datasets. The processed channels are merged into 'array format; channels in the final Geosoft database as Zon, Zoff, Xon, and Xoff.

Apparent bedrock EM anomalies were interpreted with the aid of an auto-pick from positive peaks and troughs in the off-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 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 usually because of low signal amplitudes. Each conductor pick was then classified according to a set of seven ranges of calculated off-time conductance values. For high conductance sources, the on-time conductance values may be used, since it provides a more accurate measure of high-conductance sources. Each symbol is also given an identification letter label, unique to each flight line. Conductor picks that did not yield an acceptable estimate of offtime conductance due to a low amplitude response were classified as a low conductance source. Please refer to the anomaly symbol legend located in the margin of the maps.



7.4. MAGNETIC DATA

Prior to any levelling 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 bi-directional grid technique with a grid cell size of 10 metres. The final levelled grid provided the basis for threading the presented contours which have a minimum contour interval of 5 nT.

8. GENERAL COMMENTS

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 detailed interpretation please contact Aeroquest Limited.

8.1. 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 minerals such as pyrrhotite.

8.2. APPARENT RESISTIVITY

Apparent resistivity was computed from the off-time z-component data at each measurement location. The algorithm uses the pseudo-layer half-space model (Huang, H. and Rudd, J., 2008). The primary advantages of this method are immunity to altimeter errors, and better resolution of conductive layers than other methods. A table lookup procedure is established based on the analytic solution of a half-space model to speed up the processing. This method can be expanded to generate depth section images (CDIs). The effective depths for the sections are derived empirically from the computed diffusion depth and apparent thickness of the pseudo-layer.

The computed resistivity values were interpolated onto a 10 m regular grid, using the bigridding algorithm, and then clipped with minimum and maximum values of 0 and 995 and finally applied hanning filter.

8.3. EM ANOMALIES

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 (Figure 7). For a vertically orientated thick source (say, greater than 10 metres), the response is a single peak in the z-component response and a negative to positive crossover in the x-component response (Figure 8). 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 9). 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.







Figure 8. AeroTEM response for a 'thick' vertical conductor.

Aeroquest International - Report on a Helicopter-Borne AeroTEM System Electromagnetic & Magnetic Survey



Figure 9. AeroTEM response over a 'thin' dipping conductor.

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.



APPENDIX 1: SURVEY BOUNDARIES

The following table presents the block boundaries. All geophysical data presented in this report have been windowed to 100m outside of these boundaries. X and Y positions are in metres: NAD83 UTM Zone 10 N.

.

Rabbit Mine Property:

х	Y
654376.0	5494794.0
657274.0	5495566.0
657274.0	5495566.0
657296.0	5495520.0
658648.0	5495160.0
659860.0	5495160.0
659860.0	5492431.0
659902.0	5492390.0
661254.0	5492031.0
661251.0	5492001.0
658355.0	5491218.0
658357.0	5491249.0
657005.0	5491614.0
656852.0	5491625.0
655750.0	5491625.0
655749.0	5494383.0
654397.0	5494748.0
654376.0	5494792.0



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".

COLUMN	UNITS	DESCRIPTOR
line	#	Line number
flight	#	Flight #
emfid	#	AERODAS Fiducial
utctime	hh:mm:ss.ss	UTC time
x	Μ	UTM Easting (NAD83, Zone 10)
У	М	UTM Northing (NAD83, Zone 10)
galt	Μ	GPS elevation of magnetometer bird
ralt	Μ	Helicopter radar altimeter (height above terrain)
bheight	М	Terrain clearance of EM bird
basemag	nT	Base station total magnetic intensity
magU	nT	Final levelled total magnetic intensity from upper magnetometer sensor (installed on the tail of the EM bird).
dtm	М	Digital Terrain Model
zon	nT/s	EM On-Time Z component Channels 1-16
zoff	nT/s	EM Off-Time Z component Channels 0-16
Xon	nT/s	EM On-Time X component Channels 1-16
Xoff	nT/s	EM Off-Time X component Channels 0-16
pwrline	#	powerline monitor data channel
Grade	#	Classification from 1-7 based on conductance of conductor pick
Anom_Labels		Letter label of conductor pick (Unique per flight line)
Off_Con	S	Off-time conductance at conductor pick
Off_Tau	μs	Off-time decay constant at conductor pick
Anom_ID	K/N	EM Anomaly response style (K= thicK, N = thiN)
Off_AllCon	S	Off-time conductance
Off_AllTau	μs	Off-time decay constant
TranOff	S	Transmitter turn off time
TranOn	S	Transmitter turn on time
TranPeak	А	Transmitter peak current
TranSwitch	S	Transmitter peak current time
Off_Pick	#	Anomaly pick channel
Res100m	Ωm	Resistivity at 100 m depth
Res150m	Ωm	Resistivity at 150 m depth
ResOff1	Ωm	Early time Resistivity



Job # 10-007

~

APPENDIX 3: AEROTEM ANOMALY LISTING

.

Rabbitt Mine:

Line	Anom	ID	Cond (S)	Tau (µs)	Flight #	UTC Time	Bird height (m)	Easting (m)	Northing (m)
10011	A	к	1.5	124.1	5	20:56:08	41.5	657151.0	5495539.3
10021	A	к	1.2	107.3	5	20:58:06	56.2	657167.7	5495458.2
10031	А	к	1.0	97.5	5	21:03:09	43.6	657179.4	5495438.7
10041	A	К	0.9	92.7	5	21:04:47	51.6	657181.8	5495388.3
10051	А	К	1.4	119.5	5	21:12:00	48.4	657194.6	5495333.3
10061	А	К	1.1	103.3	5	21:13:41	58.6	657196.5	5495282.1
10071	А	К	1.7	128.8	5	21:18:13	59.7	657207.9	5495233.6
10081	A	К	1.1	103.8	5	21:20:23	53.7	657209.7	5495188.4
10091	A	К	1.2	110.6	5	21:24:38	44.6	657215.5	5495137.9
10101	A	К	1.2	108.2	5	21:27:05	53.1	657220.0	5495092.4
10111	A	К	1.4	116.0	5	21:31:08	49.2	657222.4	5495024.4
10121	A	К	1.3	111.6	5	21:33:28	49.2	657223.6	5494980.4
10131	А	К	1.4	117.9	5	21:37:04	43.5	657215.5	5494936.1
10140	А	К	1.7	129.4	2	18:51:27	56.1	657208.6	5494880.2
10150	A	K	2.5	159.3	2	18:54:55	66.8	657193.7	5494825.7
10160	A	К	2.2	148.5	2	18:58:03	61.6	657175.7	5494760.7
10170	A	К	2.3	150.8	2	19:01:11	68.4	657171.6	5494709.9
10180	A	К	4.7	216.8	2	19:04:25	67.4	657174.3	5494653.3
10190	A	K	11.1	332.9	2	19:10:03	91.7	657181.4	5494606.5
10200	A	К	8.2	286.3	2	19:13:41	83.7	657188.0	5494560.1
10210	A	K	2.8	166.2	2	19:16:48	79.0	657206.8	5494507.2
10220	A	К	3.6	190.4	2	19:21:04	78.5	657216.9	5494469.2
10230	A	К	4.5	212.7	2	19:24:06	65.4	657225.9	5494420.1
10240	A	К	8.8	295.9	2	19:28:27	64.2	657238.0	5494371.4
10250	A	К	9.8	312.3	2	19:31:36	73.3	657273.1	5494322.1
10260	A	К	8.4	290.1	2	19:35:51	69.8	657326.7	5494292.0
10260	В	K	49.7	704.6	2	19:36:15	62.5	656702.0	5494124.7
10270	А	К	2.2	148.5	2	19:39:02	78.7	657365.2	5494234.6
10280	A	К	5.2	226.9	2	19:46:34	67.1	657403.4	5494209.2
10290	A	К	2.5	158.3	2	19:49:51	70.6	657429.3	5494156.4
10300	А	K	2.4	155.7	2	19:54:11	58.4	657452.2	5494115.9
10310	A	К	1.1	106.6	2	19:57:26	67.5	657475.0	5494070.4
10320	А	К	2.1	145.7	2	20:01:44	64.0	657493.1	5494023.7
10330	A	К	1.8	133.2	2	20:05:00	67.6	657516.6	5493969.5
10340	А	К	2.2	147.8	2	20:09:06	79.3	657532.1	5493928.0
10350	A	K	1.6	125.8	2	20:12:12	74.3	657559.3	5493876.6
10360	A	К	1.5	122.7	2	20:16:31	75.7	657595.0	5493836.5
10370	А	к	1.9	137.2	2	20:19:54	67.1	657637.6	5493801.3
10380	А	К	0.8	86.4	3	21:50:13	68.5	657656.5	5493764.6
10380	В	K	0.6	75.5	3	21:51:26	60.2	655691.1	5493228.8
10390	A	К	1.0	98.6	3	21:52:28	66.2	655706.6	5493172.3

Aeroquest International - Report on a Helicopter-Borne AeroTEM System Electromagnetic & Magnetic Survey

AEROQUEST

,

Job # 10-007

- -

Line	Anom	ID	Cond	Tau	Flight	UTC Time	Bird	Easting	Northing
			(S)	(µs)	#		height	(m)	(m)
10390	В	К	0.8	86.4	3	21:54:00	69.6	657684.1	5493712.8
10400	A	К	2.1	144.4	3	21:58:29	68.2	657705.4	5493670.7
10400	В	К	1.4	118.9	3	21:59:39	62.3	655730.8	5493134.1
10410	A	К	2.3	150.9	3	22:00:38	77.5	655753.3	5493096.1
10410	В	К	0.9	93.3	3	22:02:05	69.5	657737.9	5493625.8
10420	А	к	5.4	232.1	3	22:06:08	66.5	657777.5	5493579.5
10420	В	к	2.1	144.8	3	22:07:22	66.3	655760.3	5493041.4
10430	А	ĸ	2.7	164.8	3	22:08:25	73.7	655781.3	5492999.5
10430	В	К	1.1	102.9	3	22:09:50	66.4	657811.2	5493538.6
10440	А	к	5.5	234.4	3	22:13:38	59.2	657851.4	5493493.8
10440	В	ĸ	0.9	97.0	3	22:14:51	67.6	655795.6	5492948.6
10450	А	к	2.9	171.2	3	22:15:58	69.5	655808.0	5492890.9
10450	в	к	0.8	88.5	3	22:17:29	67.5	657888.1	5493462.9
10460	A	К	2.5	157.4	3	22:21:00	55.2	657914.3	5493409.8
10460	В	к	0.9	95.9	3	22:22:17	73.3	655809.1	5492843.6
10470	А	ĸ	2.0	140.9	3	22:23:23	80.4	655842.1	5492792.5
10470	В	ĸ	1.1	106.4	3	22:24:46	60.3	657928.5	5493369.4
10480	A	К	1.4	116.6	3	22:28:04	55.8	657929.3	5493310.0
10480	В	К	1.2	107.3	3	22:29:18	73.6	655876.0	5492757.2
10500	А	К	0.5	72.4	3	22:40:03	64.0	656254.6	5492753.4
10510	A	к	0.9	93.5	3	22:41:47	68.8	656274.0	5492705.7
10520	A	к	0.7	83.7	3	22:47:19	67.2	656291.6	5492665.2
10530	A	К	1.5	120.7	3	22:49:03	54.6	656273.2	5492602.5
10540	A	К	0.9	92.6	3	22:54:24	65.0	656278.5	5492548.3
10550	A	к	1.7	128.5	3	22:56:06	62.6	656264.9	5492493.3
10550	В	К	5.3	229.2	3	22:58:34	55.1	659788.8	5493443.5
10560	А	к	3.5	187.6	3	22:59:33	65.1	659776.5	5493388.3
10560	В	К	0.7	82.9	3	23:01:45	68.7	656237.6	5492440.4
10570	A	К	2.1	146.2	3	23:03:13	72.1	656230.7	5492383.1
10570	В	К	2.9	169.7	3	23:05:49	62.8	659884.9	5493371.8
10580	A	к	2.4	153.6	3	23:06:42	74.5	659813.7	5493302.2
10580	в	ĸ	0.4	60.5	3	23:08:54	68.6	656227.8	5492329.3
10590	А	К	0.8	88.8	3	23:10:18	78.7	656202.2	5492291.4
10590	В	К	3.6	190.6	3	23:12:56	66.3	659883.1	5493265.5
10600	А	ĸ	3.5	186.6	3	23:13:45	79.3	659899.6	5493207.2
10600	В	ĸ	0.7	82.4	3	23:16:15	77.2	656161.9	5492210.3
10610	А	К	1.0	97.4	3	23:17:39	79.3	656161.5	5492165.7
10610	В	К	4.5	212.3	3	23:20:20	55.3	659888.6	5493154.2
10620	А	К	7.2	268.0	4	17:18:05	48.9	659874.1	5493099.5
10620	В	K	0.8	87.2	4	17:21:38	79.0	656140.2	5492099.1
10630	A	К	1.2	107.5	4	17 : 23 : 59	59.9	656166.7	5492072.9
10630	В	К	4.7	217.5	4	17:27:15	53.3	659690.9	5493003.1
10640	А	К	4.6	214.9	4	17:28:24	64.1	659745.5	5492981.2
10640	В	К	0.7	84.3	4	17:31:46	50.6	656172.8	5492016.2
10650	A	К	1.1	104.1	4	17:33:32	61.5	656168.3	5491963.0

AEROQI EST

•

Job # 10-007

.

Line	Anom	ID	Cond (S)	Tau (µs)	Flight #	UTC Time	Bird height (m)	Easting (m)	Northing (m)
10650	В	K	6.0	243.9	4	17:36:42	46.1	659815.0	5492942.3
10660	A	К	9.7	311.0	4	17:37:38	49.1	659890.5	5492901.2
10660	В	К	0.6	78.1	4	17:41:01	88.2	656207.7	5491917.7
10670	А	к	0.8	87.0	4	17:43:01	44.1	656232.6	5491862.0
10680	A	К	0.6	79.1	4	17:49:56	64.8	656227.6	5491812.6
10690	A	К	0.7	82.5	4	17:51:40	41.2	656246.8	5491766.9
10700	A	К	0.9	92.8	4	18:03:10	48.8	656247.3	5491728.7
10710	A	K	0.3	53.1	4	18:04:39	49.0	656222.8	5491662.6
10720	A	К	12.6	355.4	4	18:08:21	43.7	659784.2	5492567.9
10720	В	K	0.6	80.0	4	18:11:38	52.5	656218.2	5491627.0
10720	A	К	0.4	61.6	4	18:12:39	64.4	656312.2	5491593.6
10720	В	К	12.7	356.9	4	18:15:38	64.7	659844.6	5492538.1
10740	A	K	16.6	407.3	4	18:16:35	60.6	659934.8	5492508.9
10750	A	К	5.9	243.1	4	18:22:38	54.4	659748.4	5492401.4
10760	A	к	6.5	255.7	4	18:23:39	58.3	659705.6	5492345.0
10770	A	К	9.7	311.6	4	18:29:06	49.8	659742.8	5492286.2
10790	A	К	13.9	372.6	4	18:35:37	69.8	659792.8	5492202.3
10790	В	К	19.3	439.5	4	18:36:03	68.7	660324.8	5492342.4
10800	A	ĸ	15.6	395.4	4	18:37:05	61.8	659805.5	5492156.7
10800	В	K	1.1	106.3	4	18:38:25	54.8	658088.2	5491707.1
10810	A	K	0.9	92.1	4	18:40:14	52.8	658117.0	5491644.1
10810	В	ĸ	13.5	367.1	4	18:41:38	57.7	659832.0	5492114.7
10810	С	ĸ	22.0	468.9	4	18:42:02	61.6	660330.3	5492252.8
10820	A	ĸ	22.5	474.1	5	20:18:45	66.7	660251.2	5492170.7
10820	В	ĸ	2.5	158.3	5	20:20:38	58.1	658135.7	5491609.9
10830	A	ĸ	1.1	103.6	5	20:22:15	48.9	658190.5	5491560.6
10830	В	ĸ	23.8	487.6	5	20:23:50	58.1	660260.0	5492116.1
10840	A	r v	1 7	400.0	5	20:25:50	56.2	650205.5	5492084.9
10840	<u>Б</u>	ĸ	3.9	105.9	5	20:27:10	50.2	650350 3	5491347.0
10850		ĸ	35.0	592.0	5	20.20.33	10.5	660270 3	5492015 2
10850		K	10 9	630.2	5	20.30.13	54.0	660270.3	5492013.2
10860	B	ĸ	1 1	106 1	5	20.32.20	47 3	658423 7	5491477 7
10870	A	к	0.7	83.5	5	20:35:14	47.6	658470.8	5491429.7
10870	В	к	35.5	595.9	5	20:36:28	46.4	660255.8	5491911.8
10880	A	к	34.7	589.3	5	20:39:09	55.2	660246.7	5491860.7
10880	в	к	0.6	79.2	5	20:40:19	47.5	658550.4	5491404.5
10890	A	К	0.5	71.4	5	20:41:50	50.4	658587.7	5491354.3
10890	В	К	35.6	596.2	5	20:42:58	39.0	660190.2	5491792.3
10900	A	К	36.9	607.4	5	20:46:27	64.3	660050.8	5491698.5
10900	В	К	0.6	79.4	5	20:47:24	59.8	658596.7	5491324.1
19040	A	К	1.0	100.4	1	20:37:42	60.4	656544.7	5494123.7
19050	A	К	11.8	342.8	1	20:32:36	79.6	657025.4	5494236.8
19060	A	К	8.8	297.2	1	20:27:31	54.4	658271.8	5491534.6
19060	В	К	2.6	161.6	1	20:29:29	75.0	657636.5	5493900.2
	L	L	1	L	l		1	L	1

AEROQUEST

Job # 10-007

.

	Line	Anom	ID	Cond (S)	Tau (µs)	Flight #	UTC Time	Bird height (m)	Easting (m)	Northing (m)
ſ	19060	С	К	4.1	202.1	1	20:30:36	57.9	657244.1	5495375.5
ſ	19070	A	К	2.0	140.8	1	20:26:06	80.4	658828.6	5491353.0
Γ	19100	A	К	46.8	683.9	1	20:09:28	58.3	660255.3	5491890.5

.

.



APPENDIX 4: 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 dat

3a 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 favour 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 International - Report on a Helicopter-Borne AeroTEM System Electromagnetic & Magnetic Survey



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 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 favourable 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 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 in phase 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.

Figure 6 shows a comparison between the Dighem HEM system (900 Hz and 7200 Hz coplanar) and AeroTEM (Z-axis) 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 5: AEROTEM INSTRUMENTATION SPECIFICATION SHEET

AEROTEM Helicopter Electromagnetic System

System Characteristics

- Transmitter: Triangular Pulse Shape Base Frequency 90 Hz
- Tx On Time 1,833 (90 Hz) μs
- Tx Off Time 3,667 (90 Hz) μs
- Loop Diameter 10 m
- Peak Current 455 A
- Peak Moment 178,600 NIA
- Typical Z Axis Noise at Survey Speed = 5 nT/s peak to peak
- Sling Weight: 1000 lb
- Length of Tow Cable: 48.8 m
- Bird Survey Height: 30 m nominal

Receiver

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

Display & Acquisition

- AERODAS Digital recording at 200 samples per decay curve at a maximum of 180 decay curves per second (27.778 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 183.131 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.











Appendix E - Writer's Certificate

.

1

.

.

.

<u>APPENDIX E</u> - Writer's Certificate

I, John R. Kerr, of the City of Vancouver, B.C. hereby certify that:

- 1) I graduated with a BASc degree in geological engineering from the University of British Columbia, Vancouver, B.C. in 1964.
- 2) I am a consulting, contract geologist, with my address of business 208 515 West Pender Street, Vancouver, B.C. V6B 6H5.
- 3) I am a member in good standing of the Association of Engineers and Geoscientists of the Province of British Columbia (#6858).
- 4) I have worked as a geologist continuously for 46 years since graduation.
- 5) I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, professional affiliation, and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
- 6) I am responsible for the compilation of this assessment report on the Rabbitt Mine **Property, British Columbia,** and dated February 10, 2010. The report is a compilation of two phases of exploration documented in two separate reports included as Appendix C and D of this report.
- 7) The author has had no prior direct involvement in work programs on the property, and is independent of the issuer applying all tests in Section 1.4 of NI 43-101.

I consent to the filing of this report with the Ministry of Mines for the purpose of filing assessment work towards the property.

Certified Correct:

John R. Kett, P. Eng. Date: February 10, 2010