2012 TECHNICAL REPORT

ON THE

TREASURE MOUNTAIN PROPERTY

Similkameen & New Westminster Mining Divisions, British Columbia

UTM 642,600E; 5,477,250N (NAD 83, North Zone 10)
Latitude 49° 25' 52"N Longitude 121° 02' 00" W

FOR

CANADIAN STRATEGIC METALS CORP.

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February 24, 2012

Date and Signature Page

Report to: CANADIAN STRATEGIC METALS CORPORATION

TECHNICAL REPORT ON THE TREASURE MOUNTAIN PROPERTY, BRITISH COLUMBIA

February 24, 2012

/s/ "Donald G. Allen"

Donald G. Allen, PEng (B.C.)

Signed on the 24th day of February, 2012.

/s/ "Tor Bruland"

Tor Bruland, PGeo(B.C.)

Signed on the 24th day of February, 2012.

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1.0 SUMMARY

1.1 *Property Description and Location*

The Treasure Mountain Property (TM Property) is situated 30 km east of Hope, and 150 km east of and 3 hour's drive from Vancouver, British Columbia (BC). The TM Property comprises 36 contiguous mineral tenures covering an area of 10,880.4 hectares (108.8 km^2) in the Similkameen and New Westminster Mining Divisions.

The mineral tenures surround Huldra Silver Inc.'s (Huldra) Treasure Mountain project to the northwest, north, east and southeast. Huldra is currently working on plans to put this project into production.

1.2 *Ownership*

The Treasure Mountain mineral tenures are held in the name of Canadian International Minerals Inc. (CIN) a Vancouver based junior mining exploration public company listed on the TMX Venture under the symbol CIN. The private BC Company Canadian Strategic Metals Corporation (CSM or Company) holds an option to earn a 50% interest in the TM Property by paying $50,000 and incur $375,000 in exploration expenditures over two years. CSM can earn an additional 10% interest in the TM Property by paying an additional $50,000 and incur an additional $500,000 in exploration expenditures within five years.

1.3 *History*

The earliest known work in the Treasure Mountain area took place in the late 1800s and was directed toward locating the source of gold and platinum-bearing placers in the Tulameen River drainage. As summarized by Meyers and Hubner (1989), the first claim to be staked was the Eureka in 1894, when prospectors reported the discovery of silver-bearing galena veins in the Sutter Creek area. In 1906 Andrew Jenson discovered the Silver Chief lode on Treasure Mountain and in 1911 the Treasure Mountain Mining Company purchased the property and began exploration and development. Between 1912 and 1926 a 20-metre shaft and three adits were developed near the summit of Treasure Mountain.

Exploration continued intermittently and the property went through a number of name changes, including Silver Chief, Mary E, Silver King and Old Dornberg. During the same period on the adjoining Eureka claim, Jenson supervised the development of three adits and eventually 21 tonnes of high-grade mineralized rocks were shipped. In 1929 the Silver King Mining Company mined and shipped three railcar loads of sorted mineralized rocks to the Cominco smelter in Trail. A small mill was built in 1930 and was operated at intervals until 1934. The property was then dormant from 1935 until 1951 when Silver Hill Mines Ltd. took over the property, optioned the Eureka claim and carried out further exploration. A 45 tonne per day (tpd) mill was built during the 1953-56 period and a small shipment of zinc concentrate was sent to the Trail smelter. However, in 1957 the mill was dismantled and the property again lay dormant until 1979-80, when Magnus Bratlien negotiated an option from one of the Silver Hill Mines owners, E. Borup, and formed Huldra Silver Inc.

1.4 *Geology*

The Treasure Mountain property straddles the Pasayten fault, the accretionary boundary between the Methow-Tyaughton Terrane on the west and the Quesnellia Terrane to the east (Monger, 1989).

The Methow-Tyaughton Terrane is a northwest-trending Jurassic-Cretaceous sedimentary-volcanic basin bounded to the east by the Pasayten Fault which separates the terrane from the Jurassic-Cretaceous Eagle Plutonic Complex to the east, and to the west by the Hozameen Fault which separates the terrane from the Permian to Jurassic Hozameen complex to the west. The northwest striking Chuwanten Thrust Fault is located more or less in the centre of the southern part of the Methow-Tyaughton Terrane.

Rocks of the Methow-Tyaughton Terrane in the south include the following rock sequences from west to east:

- Ladner Group (Early to Middle Jurassic) composed of argillites, slates, siltstones and tuffs.
- Jackass Mountain Group (Early to Middle Cretaceous) sandstones, argillites and conglomerates.
- Dewdney Creek Formation (part of the Ladner Group and of Early to Middle Jurassic age) composed of sandstones and argillites with mafic to intermediate volcanics locally. The Ladner Group, Jackass Mountain Group and Dewdney Creek Formation are all west of the Chuwanten Thrust Fault.
- Pasayten Group (Early to Middle Cretaceous) east of the Chuwanten Thrust Fault is divided in two facies:
    - Winthrop in the west composed of arkoses, conglomerates and argillites with minor red beds and tuffs.
    - Virginian Ridge in the east composed of chert grain sandstones and argillites. This facies is probably a non-marine facies equivalent of the upper part of the Jackass Mountain Formation.
- Intruded by Eocene Needle Peak granodiorite stocks and Oligocene Chilliwack Batholith granodiorite stocks along northeast-southwest striking structures.

The Dewdney Creek Formation on the west side of the Chuwanten Thrust Fault is described as a volcanic-rich marine facies of the Ladner Group while the Pasayten Group sediments are described as a non-marine succession derived from both the Nicola volcanic arc complex to the east and the Hozameen oceanic sedimentary succession to the west. They are in fault contact with each other along the northwest-trending Chuwanten Thrust Fault, which extends the full length of the southern part of the terrane. Northwest of the Treasure Mountain area the Chuwanten Thrust Fault is truncated by the northeast-southwest striking Coquihalla Fault and the 17.5 km diameter Needle Peak Pluton on the north side of the Coquihalla Fault has obliterated the fault off set..

The Quesnellia Terrane (Intermontane Belt) contains the oldest rocks in this part of British Columbia. The Ordovician through Triassic Apex Mountain Complex is highly deformed and disrupted rocks exposed to the southeast of the Cascade Mountains. These rocks include strata that appear to have been deposited in an oceanic setting, and were probably deformed prior to deposition of the Nicola Group. The Devonian through Permian Harper Ranch Group possibly represents a basinal facies related to a volcanic arc, and is overlain by the Upper Triassic Nicola Group that is composed of four volcanic and sedimentary facies which with at least partly comagmatic Late Triassic to Early Jurassic intrusions, formed a west facing magmatic arc. The Mount Lytton Complex gneisses, amphibolites, mylonites and granitic rocks may represent deeper parts of the Nicola arc. The Nicola Group/Mount Lytton Complex is unconformably overlain by sediments of the Lower and Middle Jurassic Ashcroft Formation that have an eastern proximal facies derived in large part from the Nicola Group and associated intrusions, and a western distal facies.

North of the TM Property and underlying part of the southeastern mineral tenure area the Jurassic-Cretaceous rocks are unconformably overlain by felsic to intermediate volcanic rocks of the Oligocene-Miocene Coquihalla Formation. In the eastern part of the TM Property, a narrow belt of Eocene Princeton Group sediments flanks the eastern side of the Pasayten Fault, unconformably overlying the Eagle Plutonic Complex.

A number of intrusions are hosted along a Tertiary northeast fault trend with both transform and transtensional movements resulting in an extensional environment. These intrusions are phases of recent volcanic and plutonic activity of the Cascade Magmatic Arc, an arcuate belt of post-accretionary Miocene intrusions which intrude older rocks of the Coast Range and Intermontane belts. A large number of base and precious metal deposits in BC and Washington State are in either close association with these Middle Tertiary stocks and dykes or in or adjacent to intersections between compressional and extensional structures (Pinsent 1998; McDouough, 2011).

1.5 *Exploration*

A number of the prospects recorded in the BC Ministry of Mines database (MinFile) are within the company's mineral tenures.

In 1966 exploration for porphyry copper style mineralization was conducted in the Jim Kelly Creek area within TM Property. Traces of the trenching can be seen on satellite and Google images in the upper West Fork of Jim Kelly Creek.

In 2011 the Company conducted a limited program of reconnaissance prospecting in an attempt to locate the MinFile showings and other historic workings within the TM Property. The Cedarflat Creek showing (MinFile 092HSW066) was located and three massive sulphides samples were collected from the dump of a collapsed adit. The samples returned up to 11.9% Zn, 50.9 g/t Ag, 0.2% Cu and 0.12 g/t Au. None of the other historic showings within the TM Property boundaries have yet been located.

During the first half of October 2011 Fugro Airborne Surveys Corp. (Fugro) completed a 372.4 line-km an airborne electromagnetic (EM) and magnetometer survey with their Dighem instrument over the mineral tenures covering Cedarflat Creek and Sutter Creek drainages. The survey identified four conductive areas and two magnetic high anomalies.

1.6 *Mineralization and Target Types*

Reconnaissance work in 2011 confirmed the presence of mesothermal vein type mineralization at the Cedarflat showing, with apparent similarities to the mesothermal silver-lead-zinc deposit being developed by Huldra.

Other potential target mineralization types within the TM Property include porphyry style copper-gold-molybdenum mineralization associated with intrusive rocks within the Quesnellia Terrane (Intermontane Belt) that host numerous deposits including Copper Mountain porphyry copper-gold deposit 35 km to the east or Methow-Tyaughton Terrane hosted Oligocene intrusion hosted porphyry copper-gold mineralization like the Giant Copper mineralization 35 km to the south in Ladner Group sediments. .

The younger pyrite rich volcanics of the Coquihalla Volcanic Complex and caldera structures are prospective host for gold mineralization (Longe, 1982).

1.7 *Conclusion and Recommendation*

Reconnaissance sampling from the TM Property confirmed historic precious and base metals values at the Cedarflat showing. Further work is needed to locate and confirm other historic showings that have been reported within the TM Property boundaries. Specifically the following detailed work is recommended:

- Additional exploration at the headwater of Cedarflat Creek (MinFile 092HSW066) to expose the quartz-sulphide mineralization and establishing the strike extension of it. This work should comprise cleaning out the collapsed adit and old trenches as well as hand trenching of historic soil geochemical and ground geophysical anomalies.
- The historic trenches from the 1960s porphyry copper exploration along the West Fork of Jim Kelly Creek should be located, cleaned out, mapped and sampled. Wide spaced deep penetrating Induced Polarization (IP) survey centered on the trenches is recommended to investigate any potential buried porphyry copper±gold mineralization. In addition, prospecting should be done in the Jim Kelly Creek drainage to locate and sample the three structural controlled precious metal vein showings. Establishing alteration and structural control of these veins can assist in locating the centre of a potential buried porphyry copper ± gold system.
- The trenches and adits along the north slopes of Railroad Creek need to be located, mapped and sampled to establish control of the mineralization and its potential alteration. The historic workings along Railroad Creek should if located be cleaned out, mapped and sampled to establish any potential alteration and mineralization within them. The Superior showing (MinFile 092HSE240) should be located. Details geological, alteration and mineralization of these three areas within the Railroad Creek drainage should enable an evaluation of the potential for buried porphyry copper ± gold style mineralization here.

The high grade silver veins at the nearby Huldra deposit are associated with a feldspar porphyry dyke in a steeply dipping, northeasterly trending, sinistral fault (Treasure Mountain Fault) that cuts and truncate Cretaceous sediments (Pasayten Group & Dewdney Creek Formation) and the Chuwanten Thrust Fault. The mineralization occurs to the north of and immediately below an unconformity between felsic to intermediate volcanic rock of the Coquihalla Formation and fault juxtaposed Dewdney Creek Formation sediments and minor volcanics and Pasayten Group sedimentary rock.

The airborne geophysical survey interpretation did identify:

1. A zone with multiple EM anomalies and high magnetic signatures in the western part of the survey area that is coincident with the trace of the Chuwanten Thrust Fault.
2. Magnetic high anomaly that is associated with the eastern part of the multiple EM anomalies that could reflect a possible bedrock source along Cedarflat Creek.
3. Conductive northeast trending zone of EM conductors and magnetic highs around Cedarflat showing that is indicative of bedrock sources.
4. Conductive zone in the southeastern part of the survey area that is coincident with the contact between the two facies of the Pasayten Group sediments.

A program of detailed stream sediment sampling is recommended to provide a more detailed evaluation of the 108.8 km^2 TM Property. Stream sediment sampling should be combined with float examination and heavy mineral concentrate collection. Special attention should be given to looking for and sampling porphyritic intrusive rocks, breccias, altered rocks, chalcedonic quartz, sulphide mineralization, tourmaline etc.

Target mineralization for the regional evaluation of the TM Property is porphyry gold-copper +/- molybdenum (Quesnellia Terrane hosted Jurassic porphyry copper-gold mineralization (Copper Mountain deposit) and Methow-Tyaughton Terrane hosted Middle Tertiary Cascade Magmatic Arc association (Giant Copper mineralization)), mesothermal vein type silver-lead-zinc (Huldra's Treasure Mountain deposit) and volcanic hosted epithermal gold-silver (Miocene continental volcanic rocks). The program should be concurrent with the more detailed geological evaluation described above.

Estimated cost of this Phase I exploration program is $225,000. Further exploration will depend on results of this initial exploration phase and a Phase II exploration program will be designed following review of the results from the above program.

2.0 INTRODUCTION

2.1 *Terms of Reference*

CSM commissioned the authors in January 2012 to prepare a report to summarize historic information from the area and results of exploration work conducted by the Company on the TM Property in September and October of 2011. A summary of the exploration potential of the TM Property with recommendation and budget for the initial phase of exploration are presented. The report is consistent with the Canadian Securities Administrators National Instrument 43-101 and is expected to be used to support CSM's application for a listing on the TSX Venture Exchange.

2.2 *Qualification of the Authors*

Author Allen is an independent consulting economic geologist with extensive experience in mineral exploration in North and South America and Africa for more than 40 years. The experience includes work on mesothermal vein and porphyry copper mineralization in Canada and South America. Allen is a Qualified Person (QP) as defined by NI 43-101 regulations and independent of CSM and CIN as defined by NI 43-101 regulations. He does not have any material interest in CSM or CIN nor in the mineral assets considered in this report. Remuneration for this report is by way of a professional fee which is not determined by the outcome of this report. Due to snow condition in the Property area during January and February 2012 author Allen has not visited the TM Property, but will do so when the snow conditions permit later this year.

Author Bruland has worked as a geological consultant throughout North and South America evaluating and managing various precious and base metal projects for more than 35 years. The experience includes work on mesothermal vein and porphyry copper mineralization in Canada and South America. Bruland is a Qualified Person (QP) as defined by NI 43-101 regulations, but as a director of Canadian International Minerals (vendor of the TM Property) he is not completely independent of CSM as defined by NI 43-101 regulations. Author Bruland visited the TM Property in both September and October 2011.

2.3 *Overview*

The Treasure Mountain mineral tenures were acquired by CIN and CSM through direct application to BC Ministry of Energy and Mines, and through six separate mineral title agreements. The 36 mineral tenures comprising the TM propery cover an area of 10,880.4 Ha (108.8 km^2).

The TM Property surrounds Huldra Treasure Mountain property to the northwest, north, east and southeast. Huldra is currently conducting drilling, underground development and bulk sampling with the objective of placing their silver-lead-zinc deposit into production.

2.4 *Purpose of the Report and Scope of Work*

The purpose of this report is to summarize historic geological, geochemical and geophysical information of the area, results of a TM Property evaluation by author Bruland and airborne geophysical (Dighem magnetic and electromagnetic) survey conducted Fugro in the first half of October 2011 on the behalf of CSM.

Author Bruland conducted reconnaissance prospecting along and off logging roads evaluating known showings on September 9 and 10 and again on October 13 and 14. During the site visits various outcrops and an adit dump were examined and personally sampled. Only the Cedarflat showing was located (MinFile 092HSW066). Heavy snow conditions during January and February 2012 prevented author Allen from visiting the TM Property prior to the completion of this report. A site visit by author Allen is scheduled as soon as snow conditions permit.

The coordinate system used on maps included in this report is Universal Transverse Mercator ("UTM"), NAD83 datum in zone 10N.

3.0 RELIANCE ON OTHER EXPERTS

In writing this 2012 technical report the authors are in part relying on the truth and accuracy of other reports and information. Background information is based on information obtained from references listed at the end of this report.

The information on the mineral occurrences in CIN/CSM's TM Property area is taken from the BC MinFile database. Only one, Cedarflat, of at least 10 mineral occurrences has been found and verified on surface within the mineral tenure area to date. The location and description of the others are believed to be accurate to within 1 km, but until found and investigated on surface, cannot be verified.

The authors of this report are not qualified to provide extensive comment on legal and other issues associated with the TM Property. However, information on all 36 mineral tenures has been examined on the BC government official mineral tenure web site "Mineral Titles Online BC". All 36 mineral tenures are appropriately registered in the name of CIN and are in good standing as the effective date of this report.

4.0 PROPERTY DESCRIPTION AND LOCATION

4.1 *Location*

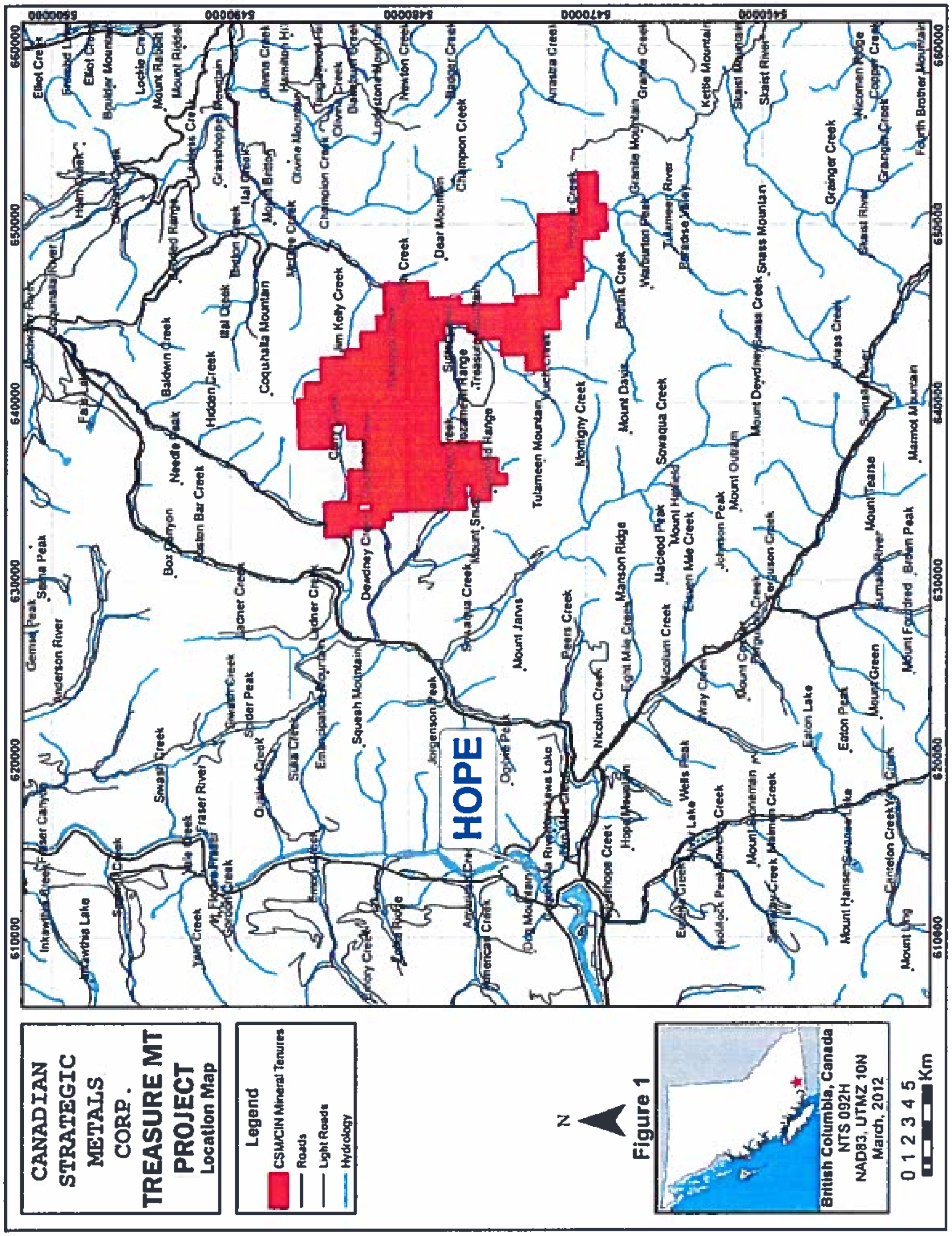
The TM Property is located in southwestern BC approximately 150 km east of Vancouver in the Similkameen Provincial Forest and part of the Cascade Mountain Range (Figure 1). It is approximately 30 km east of Hope and 24 km southwest of the village of Tulameen. The main part of the TM Property is in the Vuich Creek drainage with the southeastern part in the Tulameen River drainage and the northwest part in either Carry Creek, Cedarflat Creek or Dewdney Creek drainages.

The geographic centre of the TM Property is located at 642,600E and 5,477,250 N (UTM zone 10N) approximately 2.25 km northeast of Huldra's open pit and underground workings at Treasure Mountain.

4.2 *Treasure Mountain Property Mineral Tenures*

The TM Property is made up of 36 contiguous mineral tenures covering an area of 10,880.4 Ha or 108.8 km^2. The mineral tenures are located in both Similkameen and New Westminster Mining Divisions. Details of the mineral tenures are listed in Table 1 and plotted on Figure 2.

Canadian Strategic Metals Corp. was incorporated in the Province of British Columbia under the name of True North Minerals Corp on June 22, 2009. The name was changed to Canadian Strategic Metals Corp. on May 31, 2011.


CANADIAN STRATEGIC METALS CORP.
TREASURE MT PROJECT
Location Map
Legend
CSM/CIN Mineral Tenures
Roads
Light Roads
Hydrology
N
Figure 1
British Columbia, Canada
NTS 092H
NAD83, UTMZ 10N
March, 2012
0 1 2 3 4 5 Km
HOPE

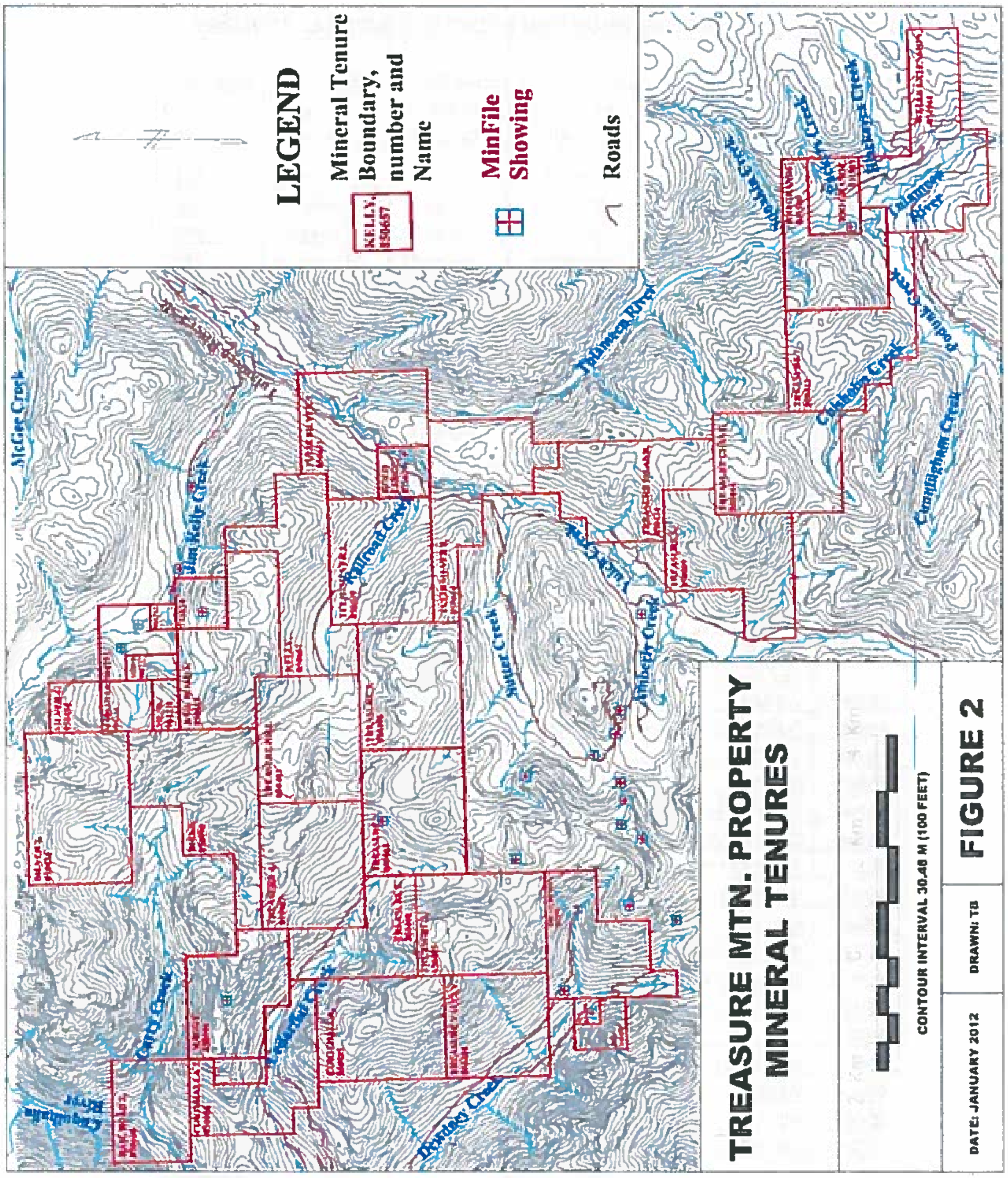

LEGEND
Mineral Tenure Boundary, number and Name
MinFile Showing
Roads
TREASURE MTN. PROPERTY
MINERAL TENURES
CONTOUR INTERVAL 30.48 M (100 FEET)
DATE: JANUARY 2012
DRAWN: TB
FIGURE 2
McGee Creek
Jim Kelly Creek
Railroad Creek
Sutter Creek
Amberty Creek
Tulameen River
Coliseum Creek
Cunningham Creek
Podunk Creek
Dewdney Creek
Coquihalla River

TABLE 1: TREASURE MOUNTAIN PROPERTY MINERAL TENURES

Tenure Number	Claim Name	Owner	Issue Date	Expiry	Area (ha)
732824		CIN (100%)	22-Mar-10	1-Aug-12	84.0
831855	RIO GRANDE	CIN (100%)	19-Aug-10	19-Oct-12	126.2
834961	WELLS EXTENSION	CIN (100%)	3-Oct-10	29-Oct-12	504.9
845588	RIO GRANDE	CIN (100%)	5-Feb-11	5-Feb-13	336.5
846267	H-1	CIN (100%)	12-Feb-11	30-Sep-12	21.01
846268	H-2	CIN (100%)	12-Feb-11	30-Sep-12	63.04
850403	TREASURE 1	CIN (100%)	1-Apr-11	1-Apr-13	420.0
850404	MAGGY	CIN (100%)	1-Apr-11	1-Apr-12	335.8
850405	TREASURE 2	CIN (100%)	1-Apr-11	1-Apr-13	420.1
850406	TREASURE 3	CIN (100%)	1-Apr-11	1-Apr-13	420.1
850407	TREASURE 4	CIN (100%)	1-Apr-11	1-Apr-13	419.9
850408	TREASURE 5	CIN (100%)	1-Apr-11	1-Apr-13	294.0
850409	TREASURE 6	CIN (100%)	1-Apr-11	1-Apr-13	441.5
850412	TREASURE 7	CIN (100%)	1-Apr-11	1-Apr-13	420.7
850414	TREASURE CHEST	CIN (100%)	1-Apr-11	1-Apr-13	420.5
850424	TREASURE ISLAND	CIN (100%)	1-Apr-11	1-Apr-13	420.3
850434	SILVER 2	CIN (100%)	1-Apr-11	1-Apr-12	503.5
850454	SILVER 4	CIN (100%)	1-Apr-11	1-Apr-12	83.9
850483	TREASURE HILL	CIN (100%)	1-Apr-11	1-Apr-12	419.9
850484	TREASURE VALLEY	CIN (100%)	1-Apr-11	1-Apr-12	336.1
850485	COKIEHALLA	CIN (100%)	1-Apr-11	1-Apr-12	420.0
850486	COKIEHALLA 2	CIN (100%)	1-Apr-11	1-Apr-12	356.9
850490	BIRKS	CIN (100%)	1-Jan-11	1-Apr-12	503.7
850648	TULIE SILVER 1	CIN (100%)	3-Apr-11	3-Apr-13	420.1
850649	TULIE SILVER 2	CIN (100%)	3-Apr-11	3-Apr-13	420.0
850651	TULIE SILVER 3	CIN (100%)	3-Apr-11	3-Apr-13	420.0
850653	RAIL ROAD 1	CIN (100%)	3-Apr-11	2-Apr-12	419.8
850657	KELLY	CIN (100%)	3-Apr-11	2-Apr-12	419.9
850660	RAILL ROAD 2	CIN (100%)	3-Apr-11	2-Apr-12	251.8
878629	GOLD LEDGE	CIN (100%)	2-Aug-11	2-Aug-13	84.0
904193		CIN (100%)	1-Oct-11	1-Oct-12	125.9
904212		CIN (100%)	1-Oct-11	1-Oct-12	21.0
904224	MARSAILLE	CIN (100%)	1-Oct-11	1-Oct-12	83.9
904231	MESS	CIN (100%)	1-Oct-11	1-Oct-12	42.0
904237	MID-2	CIN (100%)	1-Oct-11	1-Oct-12	42.0
937993	TREASURE MTN	CIN (100%)	20-Dec-11	20-Dec-12	357.24
					10,880.4

CSM signed an Option Agreement with CIN to acquire fifty percent (50%) of the rights, title and interest in the Property on September 1, 2011. Terms of the agreement are as follows:

- $25,000 down (paid).
- $125,000 in exploration in first year (completed-Table 2).
- $250,000 on exploration in year 2.
- $25,000 10 days after CSM is listed on the TSX venture exchange.

TABLE 2: TREASURE MOUNTAIN PROPERTY EXPLORATION EXPENDITURES

Month	Exploration Type	Contractor	Cost
September 2011	Prospecting (2 people)	Author Bruland & crew	$5,643.80
October 2011	Airborne Geophysics	Fugro	$106,163.00
October 2011	MinFile examinations (4 people)	Author Bruland & crew	$13.252.06
December 2011	Airborne Geophysics Evaluation	Author Bruland	$4,000.00
		TOTAL	**$129,058.86**

CSM can earn an additional 10% by paying $50,000 and spend an additional $500,000 in exploration expenditures within five years of signing the Option Agreement. CIN retains a 3% Net Smelter Return with an option for CSM to buy back 1% of the Net Smelter Return from CIN for $500,000.

The initial 19 Treasure Mountain mineral tenures that cover 7,394.8 Ha or 73.9 km^2 were acquired by CIN through direct application to BC Ministry of Energy and Mines. An additional 17 mineral tenures have been added to the Property since the signing of the Option Agreement through the Area of Interest clause.

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 Accessibility

The TM Property can be reached from the Coquihalla Lake/Highway Rest Stop turnoff on the Coquihalla Highway (BC Provincial Highway No. 5) along the two lane gravel Tulameen River Forest Service Road (FSR), a distance off approximately 24 km. Alternative the TM Property can be accessed on the historic unpaved road from the village of Tulameen, a road that is narrow with few locations for vehicles to pass. Both routes may be useable on a year round basis, but may require maintenance including snow removal during the winter months. Active logging is presently ongoing in the southwestern end of the Vuich Creek drainage and it appears that logging is planned for the near future near the confluence of the Podunk Creek and Tulameen River, which will mean that the Tulameen River FSR could be maintained on a year round basis to the southeast corner of the TM Property. The lower elevations of CIN/CSM mineral tenures can be easily reached by a network of logging roads from the Tulameen FSR along the Tulameen River and Vuich Creek. Access to the higher elevation is by helicopter only.

5.2 Climate

Available information indicate that there are extreme temperatures in the area ranging from winter lows of approximately -40°C to summer highs of approximately 30°C. There is heavy snow fall during the winter months and in the winter 2007-2008 the heavy snowfalls resulted in short duration closures of Coquihalla Highway 24 km to the north.

Climatic information is not available for the TM Property, but information from Hope (Table 2) 30 km to the west does give some indications of what can be expected on the TM Property in the Cascade Mountains.

TABLE 3: Climate data for Hope (Source: Environment Canada)

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Record high °C	15.0	19.4	25.1	30.1	38.4	36.7	40.0	39.1	38.3	29.0	18.9	16.1	40.0
Average high °C	3.8	6.7	11.3	15.0	18.4	20.7	23.8	24.5	21.2	14.6	7.2	3.9	14.3
Average low °C	-1.5	0.0	2.1	4.6	7.9	10.6	12.6	13.1	10.3	6.3	1.9	-0.9	5.6
Record low °C	-22.8	-21.1	-16.7	-4.4	-2.8	2.2	3.3	3.9	-1.1	-11.2	-21.4	-24.4	-24.4
Precipitation mm	281.2	208.3	174.0	145.2	106.3	93.1	64.4	53.5	98.5	191.0	309.8	283.1	2,008.4

Because of the Cascade Mountain Range's proximity to the Pacific Ocean and the region's prevailing westerly winds, precipitation is substantial, especially on the western slopes, with annual accumulations of up to 3,800 mm in some areas and heavy snowfall as low as 600 m elevation. It is not uncommon for some places in the Cascade Mountains to have over 5.5 m of snow accumulation. Most of the High Cascades are therefore white with snow and ice year-round.

Annual rainfall drops to 200 mm on the eastern foothills due to a rain shadow effect.

5.3 Local Resources

The village of Tulameen is the nearest community. It is a small recreational community approximately 24 km northeast of the TM Property and located between Otter Lake and the Tulameen River on the east side of the Cascades Mountain Range at elevation of 823 m with a population of approximately 250. There is a general store in the village that offers basic supplies and gas.

Hope (population approximately 6,200 in 2006) is the nearest town located approximately 30 km to the west of the TM Property at the confluence of the Fraser and Coquihalla Rivers. Driving from Hope to the TM Property along the Coquihalla Highway and the Tulameen River FSR takes approximately one hour. The town is the eastern most point on the Lower Mainland of BC approximately 120 km east of Vancouver and west of the Cascade Mountains.

Historically, the main industry in the area has been forestry with logging in the Cascade Mountains, but Hope has also supported the mining industry including the Carolin Mine (west of the Coquihalla Highway) which operated from 1982 to 1984, and the Western Nickel Mines Ltd. Giant Nickel Mine (west of the Fraser River north of Hope) which operated from 1958 to 1974. However, more specialized exploration and mining supplies have to be obtained from Vancouver.

5.4 Infrastructure

The Trans-Canada Highway (Highway No. 1) passes through Hope. Hope is the southern terminus of the Coquihalla Highway), the western terminus of the Crowsnest Highway, locally known as the Hope-Princeton highway (BC Highway No. 3), and the eastern terminus of Lougheed Highway (BC Highway No. 7). The town is serviced by national bus companies, local mini buses and taxis. Charter helicopter service is supplied by Valley Helicopters and an airport serves private planes.

5.5 Physiography

The TM Property is located in the Cascade Mountain Range that is a major mountain range of western North America that extends from southern BC through Washington and Oregon states to Northern California. It includes both non-volcanic mountains, such as the North Cascades, and the notable volcanoes known as the High Cascades. The small part of the range in BC is referred to as the Canadian Cascades or, locally as the Cascade Mountains. The Cascade Mountains are extremely rugged, with many of the peaks steep and glaciated, with valleys quite low relative to its peaks and ridges, resulting in great local relief. Elevations on the TM Property range from 580 to 1,950 m with major passes at approximately 1,000 m elevation. The southern part of the Canadian Cascade, particularly the Skagit Range, is geologically and topographically similar to the North Cascades in Washington State, while the northern and northeastern parts - the Coquihalla Range which is unofficial the northern half of the Hozameen Range and most of the Okanagan Range are less glaciated and more plateau-like in character, resembling nearby areas of the Thompson Plateau.

Bedrock exposure is limited in many areas of the mineral tenures. The western slopes are densely covered with Douglas Fir, Western Hemlock and Red alder, while the drier eastern slopes are mostly Ponderosa Pine, with Western Larch at higher elevations. Parts of the valley slopes have been logged or are presently being logged.

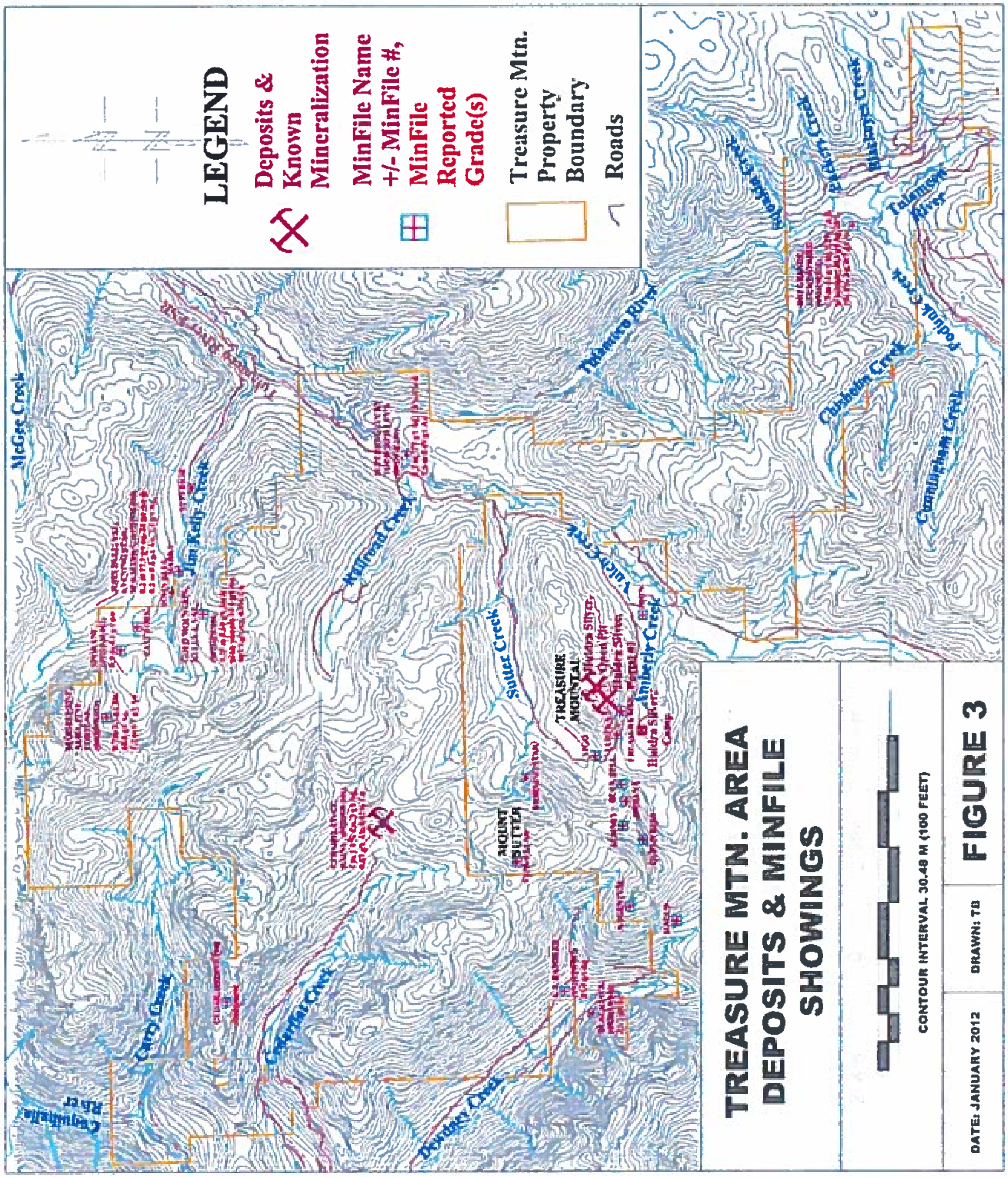
6.0 HISTORY

There are numerous mineral prospects in the area, including at least 10 within the CIN/CSM mineral tenures that have been investigated and recorded in the BC Ministry of Energy and Mines MinFile and Assessment Reports databases (Figure 3). The following is summaries of the history of the mineral prospects within or adjacent to the TM Property boundaries.

6.1 Cedarflat showing (MinFile 092HSW066)

During the first half of the 20th century an adit was driven and trenches were excavated in the headwaters of Cedarflat Creek (Figure 3).

Craigmont Mines Ltd. conducted magnetic, geochemical and geological surveys over an area of 600 by 700 m at the headwater of Cedarflat Creek in 1967. Young (1967) describes conglomerates, arkoses, argillites and diorite plugs, locally containing up to 2% disseminated pyrite. Minor amounts of sphalerite and pyrrhotite and trace amounts of chalcopyrite are present along shears and small fractures. The magnetic survey showed magnetic trends ranging in azimuth from 025 to 050 degrees. The copper and zinc geochemical soil survey revealed a broad band of >500 ppm zinc anomalies (peaks of 1,500 to 3,350 ppm) associated locally with low copper values.
The adit was caved and the trenches slumped by 1980 when Noranda Exploration Co., Ltd. (Noranda) explored the site. Noranda completed magnetometer, C.E.M. (Vertical Shootback Electromagnetic), soil geochemistry and geological survey on a 17.9 line km grid. The grid covered Winthrop facies sediments of the Pasayten Group intruded by diorite. The sediments are mainly pebble to boulder conglomerate inter-bedded with coarse grit and phyllite. The conglomerate fragments decrease in size to the north suggesting a southeastern source for it. The sediments strike to the northeast with dip to the southwest (45° to 90°) and carry disseminated pyrite to 2% locally. A diorite intrudes the sediments in the northeast and also contains up to 2% disseminated pyrite. Andesite outcrops in the southwest part of the grid.


LEGEND
Deposits & Known Mineralization
MinFile Name +/- MinFile #, MinFile Reported Grade(s)
Treasure Mtn. Property Boundary
Roads
McGee Creek
Jim Kelly Creek
Railroad Creek
Tulameen River
Sutter Creek
Vuich Creek
Coquihalla River
Chisholm Creek
Podunk Creek
TREASURE MOUNTAIN
MOUNT SUTTER
TREASURE MTN. AREA DEPOSITS & MINFILE SHOWINGS
CONTOUR INTERVAL 30.48 M (100 FEET)
FIGURE 3
DRAWN: TB
DATE: JANUARY 2012

Sphalerite, pyrrhotite, pyrite and chalcopyrite are hosted by shears and fractures. Massive sphalerite-pyrrhotite with minor pyrite is found in the dumps to the caved adit. Brecciated sediments with magnetite are also reported in the vicinity of the caved adit. The old trenches exposed sphalerite, pyrite, pyrrhotite and minor chalcopyrite parallel to phyllite foliation. The copper, lead and zinc soil geochemistry defined a north to northeast trending anomaly in the northeastern part of the grid that is partly concurrent with both magnetometer (that strike sub-parallel to bedding) and C.E.M. anomalies. The soil anomalies probably reflect the shear and fracture controlled mineralization.

Two E size diamond drill holes (112.3 m) were completed in 1980 by Noranda to investigate the C.E.M. and soil anomalies. The holes were drilled upslope and east of the caved adit and trenches and intersected narrow (<2 mm) carbonate veins with pyrrhotite-sphalerite-pyrite mineralization. The highest mineralization grade reported was 1 meter of 1.42 % zinc, 3 g/t silver with low grade copper and gold values.

6.2 Marsellaise showing *(MinFile 092HSW051)*

Gold was discovered on the ridge between the West and East Forks of Jim Kelly Creek (Figure 3) in 1913. A quartz vein with pyrite and minor chalcopyrite returned 0.68 g/t Au and trace silver over 1.2 m. A six m adit was driven in 1937 along a 12 to 66 cm quartz vein with pyrite, chalcopyrite and trace of galena in schistose rock with a 66 cm sample returning 3.5 g/t Au and 68.6 g/t Ag. The quartz vein is hosted by altered, fractured and fissured sandstone, conglomerate and pelite of the Allenby Formation (Princeton Group) or the Virginia Ridge facies of the Pasayten Group with Eagle Plutonic Complex diorite to the east. Prospecting and geochemical survey in search of porphyry copper mineralization was done by Bethex Exploration Ltd. (Bethex) north of the West Fork within altered Eagle Plutonic Complex diorite (secondary amphibole, chlorite, calcite, garnet & saussuritized feldspar) with disseminated hematite and pyrite plus chalcopyrite on fractures. Bethex excavated eight trenches in 1965 and another 35 trenches (5.5 km) in 1966. IP geophysical survey and five diamond drill holes (863.2 m) were also completed in 1966. There is no available information or results from the trenching and drilling, the only reference to this work is found in BC Ministry of Mines and Petroleum Resources Annual Report from 1965 (p. 161) and 1966 (p. 174). Prospecting in 1989 located some of the trenches and one of the drill holes.

6.3 Gold Mountain Showing (MinFile 092HSW048)

Gold mineralization south of Jim Kelly Creek has been known since 1913 (Figure 3). Gold was identified in a quartz-sulphide (galena, chalcopyrite, arsenopyrite and pyrite with minor tetrahedrite and bornite) vein in clastic sediments (Allenby Formation (Princeton Group) or the Virginia Ridge facies of the Pasayten Group) with Eagle Plutonic Complex diorite to the east. Sampling in 1913 returned 0.68 g/t Au with trace silver and a high-grade hand-picked sample returned 14.40 g/t Au, 685.7 g/t Ag and 4.9% Cu. Two attempts to locate this mineralization in past 5 years have failed.

6.4 Spokane Showing (MinFile 092HSW052)

Gold was discovered on the west side of the East Fork of the Jim Kelly Creek (Figure 3) in 1912. It is described as a gold bearing quartz vein hosted in a 0.9 m wide shear in Eagle Plutonic Complex diorite with reported assay of 4.1 g/t Au.

6.5 John Bull Showing (MinFile 092HSW050)

Gold was first reported in the lower parts of Jim Kelly Creek in 1913. It covers several known workings that are within, along the eastern boundary and to the east of the TM Property. Gold mineralization was discovered in quartz-carbonate sulphide (pyrite and minor chalcopyrite) veins that locally pinch and swell. The John Bull, Marks and Superior workings are located east of the Property and downstream from the confluence of the West and East Forks of Jim Kelly Creek (Figure 3). The presence of mica, chlorite and clay give the veins/dykes a distinctive "ribboned" appearance (similar to dykes at Treasure Mountain?-Section 23.1). Sampling in 1913 returned 24.0 g/t Au and 17.1 g/t Ag over 20 cm and a hand-picked high-grade sample returned 48.0 g/t Au. A sample from 1937 (18 cm) returned 9.6 g/t Au and 3.4 g/t Ag.

The showings are hosted by propylitic- (chloritization & sausurization) and minor argillic-altered green diorite with carbonate and quartz-carbonate alteration with less altered hornblende diorite to the south. The diorite is interpreted to be part of the Eagle Plutonic Complex and overlain by clastic sediments (Allenby Formation (Princeton Group) or the Virginia Ridge facies of the Pasayten Group) on an unconformity east of the Pasayten Fault. These rock types are intruded by felsic and dacite dykes of Miocene age that carry disseminated pyrite and minor chalcopyrite with minor gold. The dykes are generally less deformed than the host diorite. Both the diorite and the dykes are affected by carbonate alteration and quartz-carbonate sulphide bearing veins. Quartz-carbonate veins with sulphides are hosted in northwesterly striking shears or brecciated zones. The main shear zone (> 5 m) wide) is along the creek valley striking to northwest and dipping gently to southwest (30° to 50°).

Mineralization appears to be hosted in tension structures oblique and on both sides of the main shear zones. Quartz-carbonate vein stockwork and breccias related to the shear zones have width of >10 m. The veins locally contain massive pyrite lenses and there is disseminated pyrite in the veins wall rocks. Additional exploration was done between 1982 and 1991 in the form of geochemical and several geophysical surveys plus detailed geological mapping. Two VLF-EM conductors were defined, the discontinuous surveys along the creek valley have two conductors (>400 m & >750 m) that could be continuous and a >450 m conductor along the northern slope of the creek valley. Both could reflect mineralized shear zones. There is also reference to East Fork mineralization in the East Fork of Jim Kelly Creek within the property boundaries, but to date author Bruland has been unable to locate any description of this mineralization (Figure 3).

6.6 Superior Showing (MinFile 092HSE240)

The showing is located to the east of Vuich Creek in Eagle Plutonic Complex granodiorite/diorite where pyrite and chalcopyrite occur in narrow seams in fractures and in a quartz porphyritic dyke (Figure 3). A sample across 1.5 m in 1913 returned 0.69 g/t Au.

Geochemical and geophysical surveys were completed on the west side of Vuich Creek and south of Railroad Creek in 1980. Minor copper sulphides (chalcopyrite, bornite & tetrahedrite) were identified with some silver and traces of gold. A northeast trending VLF-EM anomaly extends across the contact between Allenby Formation (Princeton Group) sandstones, conglomerates and argillites and Eagle Plutonic Complex diorite ± amphibolite was identified in 1981. The VLF-EM anomaly strikes northeast towards a historic adit to the south of Railroad Creek and to a historic trench on the north side of the creek.

6.7 Rio Grande Showing (MinFile 092HSE075)

Historic reports refer to discovery of galena-sphalerite stringers (2.5-10 cm) within a 1.5 m shear zone with kaolin, sericite, crushed quartz and oxidized pyrite in 1928. The showing is described as being located approximately 250 m downstream from the confluence of Podunk Creek and Tulameen River (Figure 3) within Eagle Plutonic Complex granodiorite. The reported results are 14 g/t Ag with 1.2% Zn and 0.7 g/t Au and a high grade sample of galena with 463 g/t Ag, 28% Pb and 2% Zn. An attempt to locate the showing in 1990 by King (AR20350) focused upstream from the confluence of the creek and river and located samples with anomalous copper (0.13%) in one sample on the south side of Podunk Creek.

6.8 U.S. Rambler showing (MinFile 092HSW045)

Silver mineralization was discovered in 1913 in the north slope of the headwater of Dewdney Creek. Mineralization is found in minor shears along the bedding planes of tuffaceous sediments (volcanic sandstones, quartzites, siltstones, wackes, tuffs and argillites with interlayered fossiliferous limestones) of the Dewdney Creek Formation. There is also mineralization in bedded quartzites that is altered and oxidized with extensive limonite. Disseminated pyrite, galena and sphalerite is identified along the shears and a 15 m adit was developed along one of the shears in 1913 with a 0.76 m sample assaying 17.14 g/t Ag and trace of gold.

In 1985 mapping to the east of the MinFile showing identified a porphyry dyke and coarse intrusive dykes. A diorite body was found in the north slope of the headwater of Dewdney Creek and a conglomerate or breccia (1 to 3 cm angular fragments in siliceous matrix) contain up to 5% sulphides (mainly pyrrhotite) in fragments and matrix. Three minor shears contained a fair amount of pyrite with minor sphalerite and galena and assayed from 15.4 to 71.0 g/t Ag. Minor chalcopyrite and magnetite was identified in one intrusive.

6.9 Blackjack showing (MinFile 092HSW046)

The earliest reference to this showing is from 1913. It is located west of the confluence of two tributaries feeding into Dewdney Creek. The showing is hosted by inter-bedded tuffs, quartzites and argillites of the Dewdney Creek Formation that is intruded by a coarse grained, felsic dyke. Mineralization is hosted by 25 to 30 cm sheared and altered sediments with disseminated pyrite, galena and sphalerite. Mineralization appears to be related to the north to northeast striking felsic dyke. The MinFile reported silver value is from AR14714 that describes it in the central part of Argentum claim or >1 km to the east of the Blackjack showing from what could be the Argentum (MinFile 092HSW157) or Hall's (MinFile 092HSW047) showings, both east of the TM Property boundaries (Figure 3).

6.10 Cedar showing (MinFile 092HSW116)

A 1920 GSC report refers to a manganese occurrence "of commercial importance" on the ridge between Cedarflat Creek and the Coquihalla River within the Winthrop facies sediments of the Pasayten Group (Figure 3). An attempt to locate the showing in 2007 by William Amey (AR29362) was unsuccessful.

7.0 Geological Setting and Mineralization

7.1 Regional Geological Setting

Pre-Late Mesozoic rocks in the southwestern BC can be subdivided into at least six lithotectonic Terranes (Figures 4 & 5). Each Terrane has distinctive geological lithologies, and in some cases mineral deposits. Each is bounded by major faults, and original geographic relationships are unknown or uncertain. There is no basis for assuming any stratigraphic continuity across the region in Paleozoic and Early Mesozoic time. Linkages between the Terranes can be established at various times throughout the Mesozoic and by Middle Cretaceous the Terranes were together in the present position.

The Quesnellia Terrane (Intermontane Belt) underlies the eastern part of the TM Property (Figure 4) and comprises the oldest rocks in this part of BC (Figure 5). The Ordovician through Triassic Apex Mountain Complex is highly deformed and disrupted rocks that are exposed to the southeast of the Cascade Mountains. These rocks include strata that appear to have been deposited in an oceanic setting, and were probably deformed prior to deposition of the Upper Triassic Nicola Group. The Devonian through Permian Harper Ranch Group possibly represents a basinal facies related to a volcanic arc. It is overlain by the Nicola Group (Figure 5) which is comprised of four volcanic and sedimentary facies with at least partly comagmatic Late Triassic to Early Jurassic intrusions, forming a west facing magmatic arc. The Mount Lytton Complex (Figure 4) gneisses, amphibolites, mylonites and granitic rocks may represent deeper parts of the Nicola Group magmatic arc. The Nicola Group/Mount Lytton Complex is unconformably overlain by sedimentary rocks of the Lower and Middle Jurassic Ashcroft Formation that has an eastern proximal facies derived in large part from the Nicola Group and associated intrusions, and a western distal facies.

Cache Creek Terrane (Intermontane Belt) lies to the northeast of the Cascade Mountains (Figure 4) and is composed of the Pennsylvanian to Middle Jurassic Cache Creek Complex (Figure 5). The Cache Creek Complex is not an orderly stratified succession, but rather highly disrupted, and probably consists of several discrete elements, all of which probably formed in oceanic settings. The eastern part is a melange composed of Permian and Pennsylvanian carbonate blocks, together with blocks of cherts, basalts, minor gabbros and ultramafic rocks in an argillite-chert matrix of mainly Late Triassic age. The central part contains a large, mainly Middle to Late Permian carbonates, and the western part is of Permian to Middle Jurassic age and contains argillites, cherts and volcaniclastic rocks. It is possible that the eastern part of the Cache Creek Complex represents the subduction complex related to the Nicola Group.

Methow-Tyaughton Terrane (Coast & Cascade belts) underlies the western part of the TM Property (Figure 4). The terrane has a basal ophiolite (Spider Peak Formation and associated ultramafics) of probable Triassic age, which is overlain by the predominantly fine-grained, clastic Lower and Middle Jurassic Ladner Group and the Dewdney Creek Formation (part of the Ladner Group) sandstones and argillites with mafic to intermediate volcanics (Figure 5). In the south (Methow part) these rocks are overlain by the Late Jurassic Thunder Lake sequence while in the north (Tyaughton part) there is coeval strata form the thicker Upper Jurassic to Lower Cretaceous Relay Mountain Group. Overlaying the Thunder Lake and Relay Mountain Group are fine to coarse clastics of the partly coeval Lower Cretaceous Jackass Mountain and Pasayten Groups. The latter contain detritus from both Quesnellia and Bridge River rocks, thus linking these terranes together by about Middle Cretaceous.

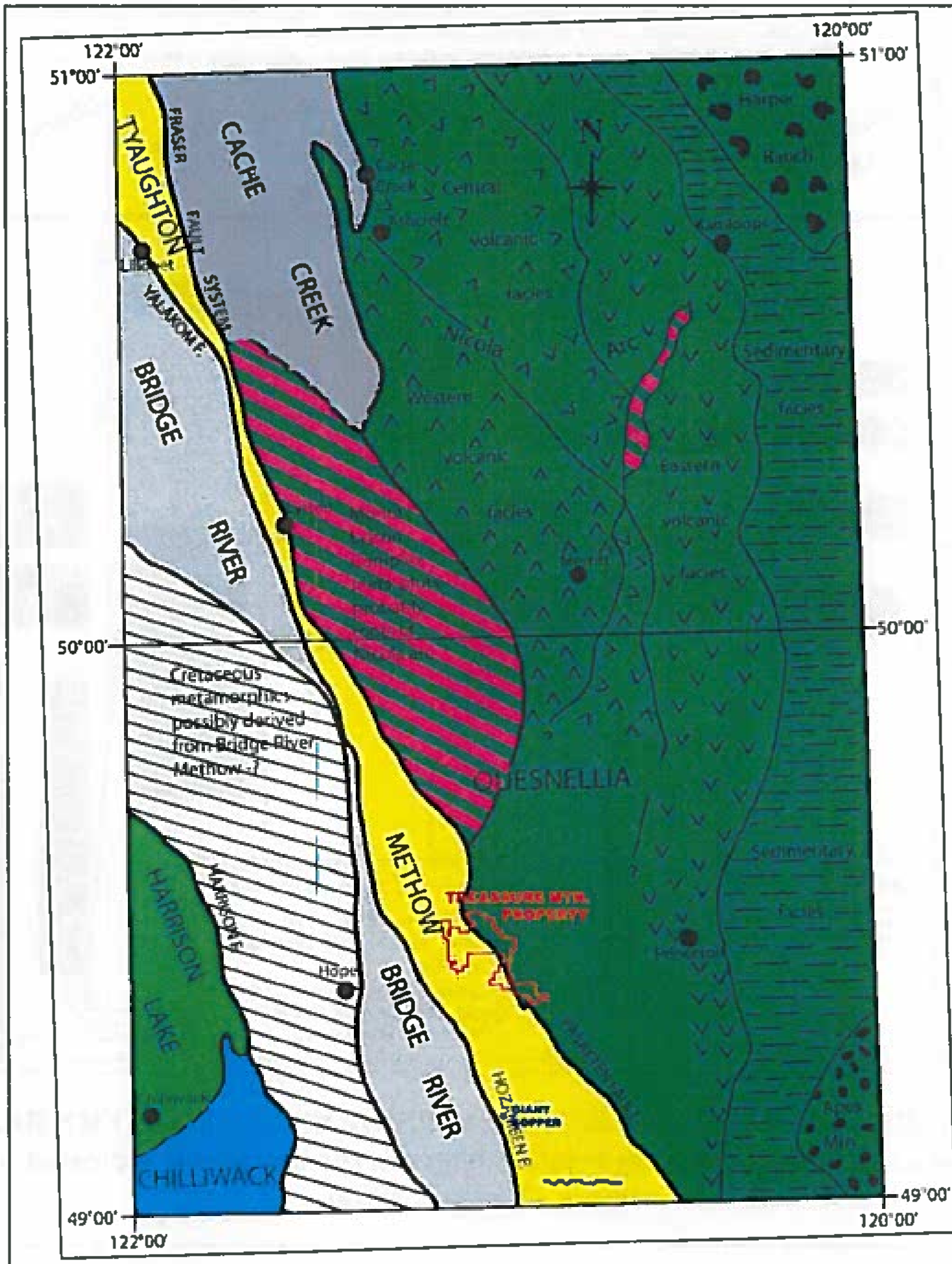


FIGURE 4: TERRANES & MAJOR FAULTS OF SOUTHWESTERN BC.
Facies within the Upper Triassic Nicola Group which characterizes Quesnellia, are shown. (adapted from Monger, 1989)

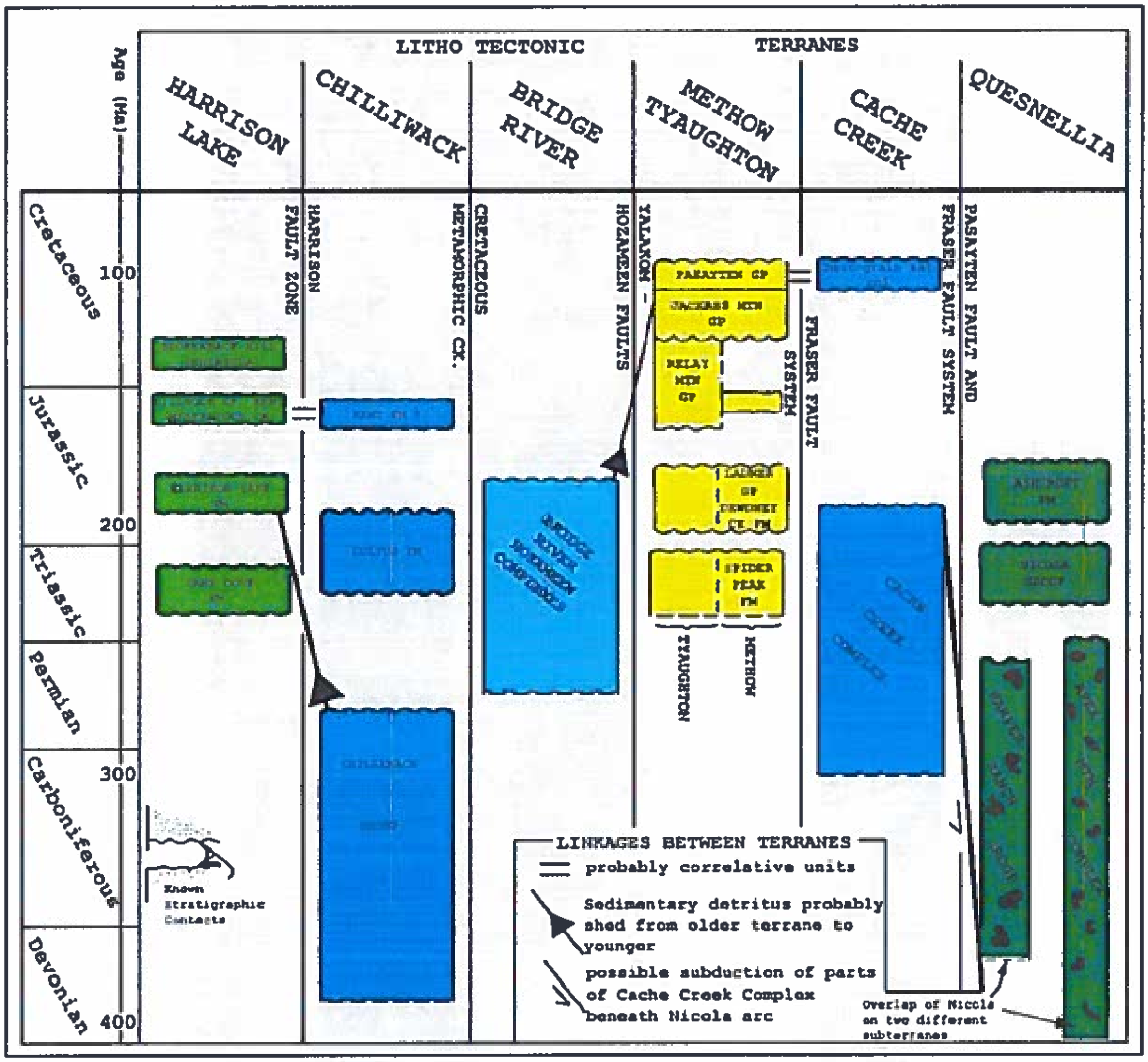


FIGURE 5: ROCK UNITS & TERRANES OF SOUTHWESTERN BC. Known and possible linkage/relation between the terranes is indicated by arrows. (Monger, 1989)

Bridge River Terrane (Coast & Cascade belts) lies to the west of the TM Property (Figure 4) and is composed of the Permian(?) to Middle Jurassic Bridge River Complex (west of Fraser River) and the correlative Permian to Jurassic Hozameen Complex (east of Fraser River). The terrane resembles the largely coeval Cache Creek Complex in their disrupted nature and they were probably both deposited in an ocean basin. The main difference is the lack of large carbonate bodies in the Bridge River Terrane.

The high-grade metamorphic rocks (Coast & Cascade belts), lies between the Bridge River and Chilliwack and Harrison Lake terranes (Figure 4). The terrane is of Cretaceous age and may in part be correlative with rocks of lower metamorphic grade to the east and west. Structurally highest are amphibolite grade Settler schists which are derived predominantly from pelites, but include minor pillow basalts and cherts that might be equivalents of the Triassic and Jurassic Spider Peak Formation and Ladner Group of Methow-Tyaughton Terrane.

Chilliwack Terrane (Coast & Cascade belts) lies on the west side of the high grade metamorphic core of the Cascade Mountains and south of Harrison Lake Terrane (Figure 4). It is a Devonian to Jurassic sequence that although complexly folded and faulted, retains its stratigraphic integrity. The oldest rocks are the Devonian to Permian Chilliwack Group which probably represents an Upper Paleozoic arc or arcs. In general, lithological association, age and faunas of the Chilliwack Group resemble the Harper Ranch Group of the Intermontane belt. Stratigraphically above the Chilliwack Group are clastic rocks of the Upper Triassic and Lower Jurassic Cultus Formation that possibly represents a distal basinal part of an arc and Upper Jurassic clastics that can maybe be correlated with the Kenl Formation north of Fraser River.

Harrison Lake Terrane (Coast & Cascade belts) is located north of the Chilliwack Terrane and west of the high grade metamorphic core of the Cascade Mountains (Figure 4). It is a well-preserved Middle Triassic to Lower Cretaceous succession that is composed of is the Middle and Late Triassic Camp Cove Formation siliceous argillite and mafic volcanics. Unconformably above this formation is mainly intermediate, but locally felsic volcanics of the Lower to Middle Jurassic Harrison Lake Formation, the Middle and Upper Jurassic shales of the Mysterious Creek Formation and volcanics of the Billhook Creek Formation. These may represent different facies of a long-lived Jurassic arc. The youngest rocks are the Upper Jurassic (?) and Lower Cretaceous clastic and volcanic rocks of the Peninsula and Brokenback Hill Formations. The Harrison Lake Formation contains a basal conglomerate with limestone clasts containing fossils that resemble those in Permian limestone of the Chilliwack Group suggesting a possible stratigraphic tie between Harrison Lake and Chilliwack terranes in Early Jurassic.

Post-mid Cretaceous stratified units are entirely continental and preserved mainly in structural depressions. They include Middle to Late Cretaceous arc volcanics of the Spences Bridge Group, Eocene arc volcanics of the Kamloops and Princeton Groups, Eocene sedimentary rocks, the Oligocene-Miocene Coquihalla volcanics and the extensive Miocene-Pliocene "plateau basalts", as well as scattered minor Pleistocene and Recent flows, With the exception of the younger basalts, granitic intrusions accompany the volcanics.

7.2 Structural Setting

The Apex Mountain Complex in southeastern BC is more deformed than contiguous Upper Triassic rocks, suggesting a pre-Late Triassic deformation.

The eastern belt of the Cache Creek Complex features melange composed of blocks of various lithologies in a sheared matrix. It is possible that some of this fabric is of Late Triassic to Early Jurassic age as similarly deformed Cache Creek rocks north of Williams Lake are cut by 200 Ma granitic rocks. Faults containing hydrothermal minerals in the Guichon batholith are dated at about 200 Ma and foliated felsic and amphibolitic rocks of the Mount Lytton Complex are dated as 218-250 Ma and cross-cut by 210 Ma granitic rock. It is possibly that these structures are related to Early Mesozoic subduction/arc activity and structures in the Cache Creek Terrane and perhaps formed in an accretionary complex.

The Cordilleran crust was created in Jurassic to Early Tertiary, probably by structural stacking of rock units on discrete thrust faults and by folding and flow in a generally compressional regime with the addition of mantle-derived magmatic rocks. The result was Intermontane Belt crust thickening that became non-marine by Middle Jurassic (ca. 160 Ma) and Coast & Cascade belts became non-marine by Middle Cretaceous (ca. 100 Ma). The following discrete structural events can be distinguished (locations are indicated on Figure 6):

- Middle Jurassic structures (northeast of Kamloops): southwest verging structures, including overturned folds and possible faults, and an increase from sub-greenschist to upper greenschist grades metamorphism from southwest to northeast. This appears to be related to evolution at the flanking Omineca Belt to the east. The structures are congruent with southwest-verging, probable Middle Jurassic structures to the east near Adams Lake, which are interpreted as "backfolds" in the complex structural evolution of the Omineca Belt.
- Late Jurassic structures: West-dipping foliations within the Eagle Plutonic Complex and congruent, flanking west-dipping foliations in amphibolite and greenschist-grade meta-volcanics of the Nicola Group to the east may be deeper structural equivalents of high-level, sub-greenschist grade structures to the north near Cache Creek. The Cache Creek Terrane is thrust eastwards over Quesnellia.
- Cretaceous structures: In the southwest, northwest-verging thrust faults and folds (south of Fraser River) and southwest-verging thrust faults and folds (east of Harrison Lake) are the northerly continuation of structures on the west side of the Cascade Mountains in Washington State. Structures north of Fraser River are syn-metamorphic and intruded by the Early Cretaceous (ca. 104 Ma) Spuzzum intrusions. The fabric associated with these structures is cut by the north northwest trending Harrison Fault. Lower Cretaceous rocks of the Relay Mountain Group (ca. 130 Ma) contain a large (ca. 3 km amplitude) southwest-verging isoclinal-recumbent syncline that is cut by an Eocene (ca. 47 Ma) pluton. The narrow structural high of the Mount Lytton-Eagle Plutonic Complexes and the complementary structural depression to the east, formed in Early to Late Cretaceous. This Mount Lytton-Eagle Plutonic Complexes structural high is bounded on the west by the Pasayten Fault. Early Cretaceous to Middle Cretaceous conglomerates of the Jackass Mountain Group contain eastward-derived clasts probably derived from the Eagle Plutonic Complex. Local dyke swarms of Late Cretaceous age (ca. 85 Ma) cut Middle Cretaceous strata immediately west of the Pasayten Fault and are orientated parallel with it. These features indicate that in Middle Cretaceous the Pasaylen Fault was a normal fault, downdropping Methow-Tyaughton strata to the west. Within the Methow-Tyaughton Terrane, the east-verging Chuwanten Thrust Fault places Jurassic strata over Middle and Late Cretaceous rocks of the Pasayten Group and is cut by the Eocene Needle Peak pluton, thus establishing Late Cretaceous, pre-48 Ma shortening in this area.
- Paleogene structures: The main Tertiary structure is the Fraser Fault System that dextrally offsets older structures by 80 to 100 km. Its geometric relationship with north-northwest reverse faults and north-northeast trending normal faults makes it a wrench fault and the relation to other structures and intrusion set the age as Eocene-Oligocene (47 to 35 Ma). These structures are interpreted to be related to predominately crustal thinning which contrast to the Jurassic to early Tertiary crustal thickening.
- Neogene (?) structures: A set of northeast trending faults, which includes the Coquihalla Fault, show both vertical and predominantly dextral movements.

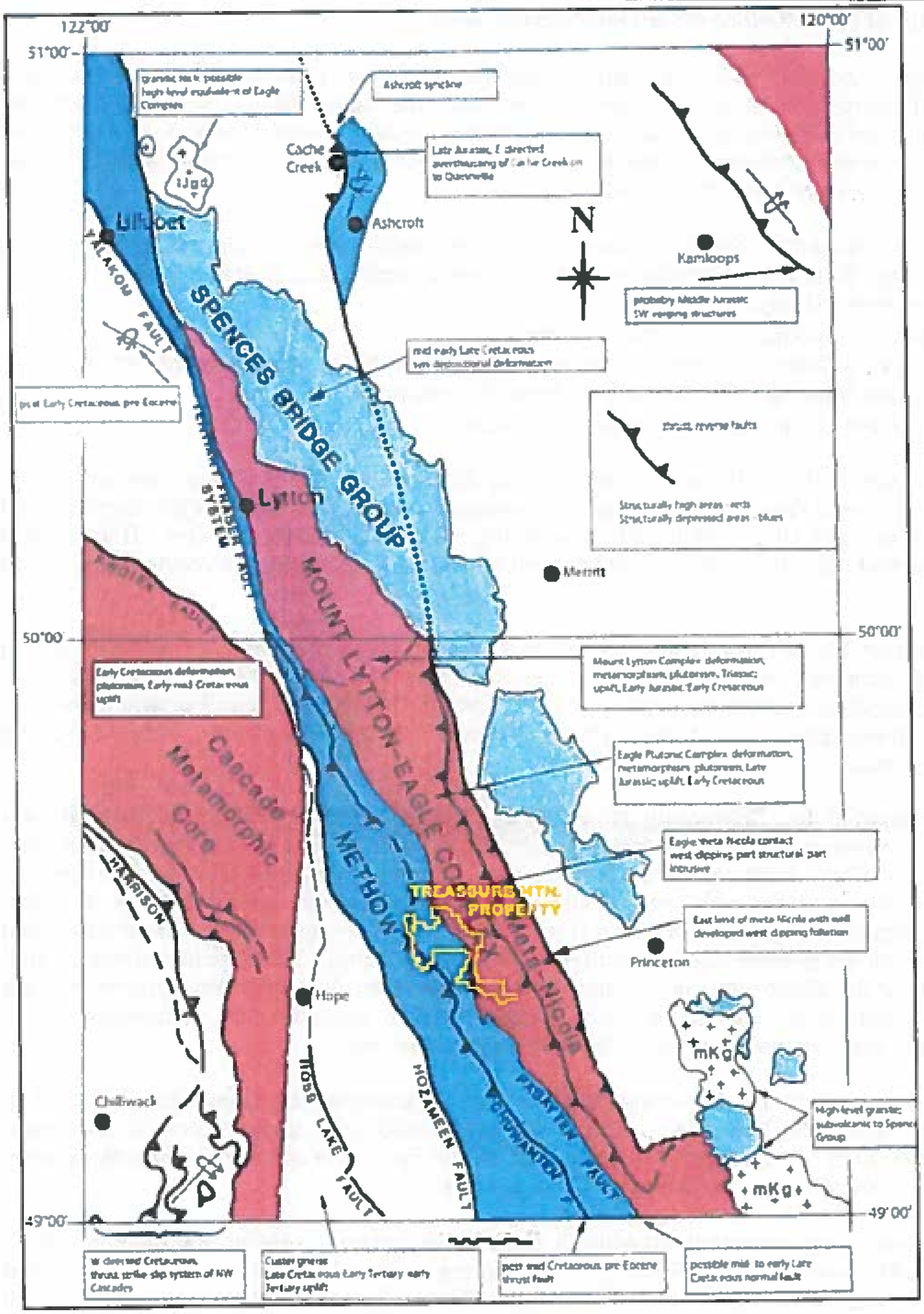


FIGURE 6: JURASSIC & CRETACEOUS STRUCTURAL ELEMENTS IN SOUTHWESTERN BC (adapted from Monger, 1989)

7.3 Geology of the Treasure Mountain Property area

TM Property is located within the Methow-Tyaughton Terrane (Figures 4 & 6) with part of the mineral tenures extending east across the Pasayten Fault over the Quesnellia Terrane. The Methow-Tyaughton Terrane form the Cascade Mountains that has high topographic and structural relief with greenschist or lower grade metamorphic rocks between two branches of Cretaceous normal faults (Hozameen Fault to the west and Pasayten Fault to the east).

The Methow-Tyaughton Terrane is composed of sedimentary and volcanic rocks of Late Paleozoic to Cretaceous age plus younger intrusives and sedimentary rocks. It is divided into:

- Hozameen Complex (Permian to Jurassic)
- Ladner Group (Early to Middle Jurrassic)
- Dewdney Creek Formation (Early to Middle Jurrassic and part of the Ladner Group)
- Jackass Mountain Group (Early to Middle Cretaceous)
- Pasayten Group (Early to Middle Cretaceous)

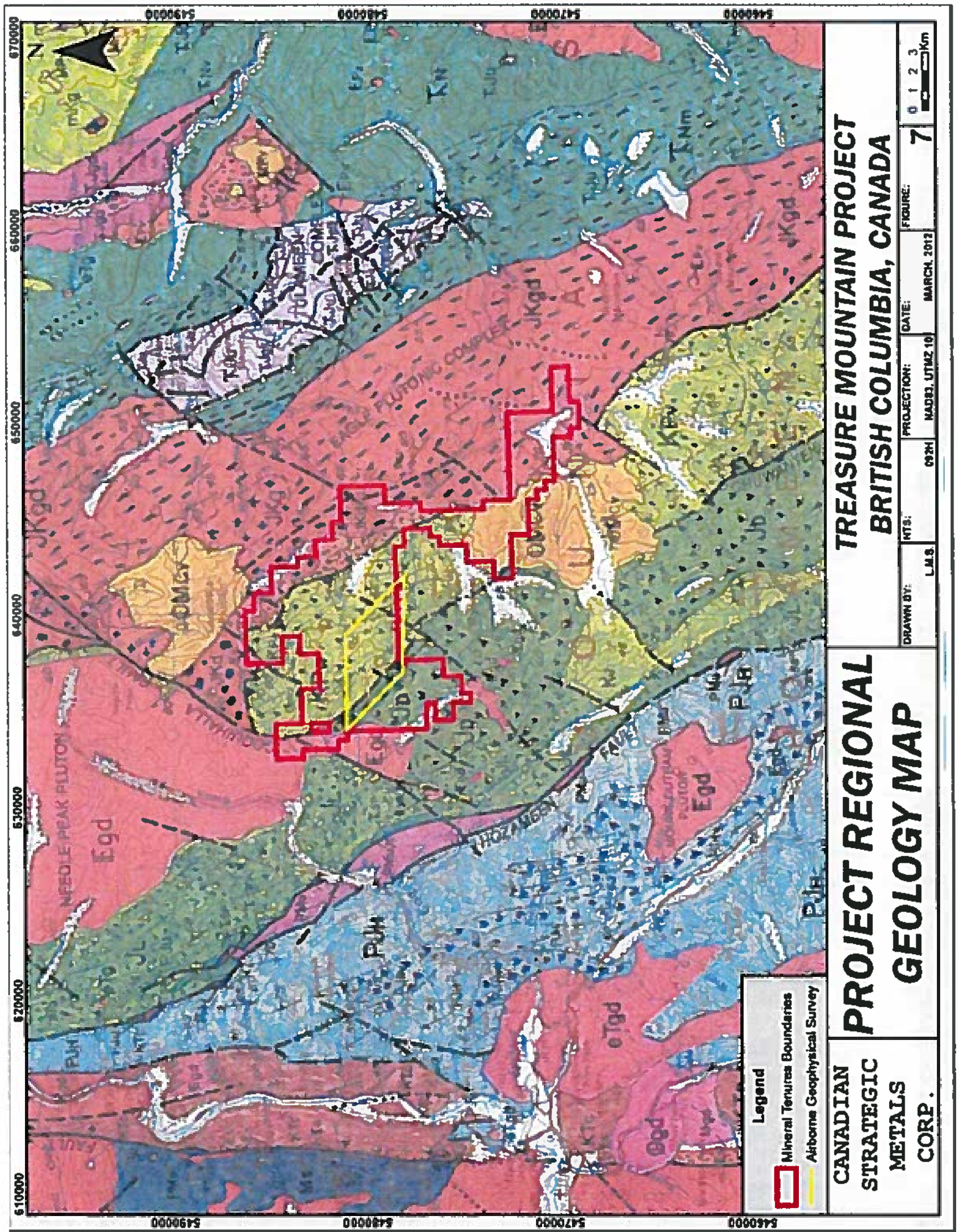
The central part of the TM Property is underlain by the northwesterly trending Pasayten Group sediments (Winthrop and Virginia Ridge facies - Figure 7). The western contact of the Pasayten Group is the northwest trending Chuwanten Thrust Fault that parallels the Pasayten Fault to the east. The Chuwanten Thrust Fault is located less than one km southwest of Huldra's advanced exploration project on Treasure Mountain.

The Chuwanten Thrust Fault has pushed Early to Middle Jurassic Dewdney Creek Formation sandstone, argillite with local mafic to intermediate volcanis and Early to Middle Cretaceous Jackass Mountain Group sandstone, argillites and conglomerate over the Early to Late Cretaceous Pasayten Group. The marine and non-marine upper part of the Jackass Mountain Group is probably a facies equivalent of the Pasayten Group.

The eastern part of the TM Property covers the northwestern trending Pasayten Fault that is the boundary between the Methow-Tyaughton and the Quesnellia Terranes. The main unit east of the fault is the Late Jurassic and Early Cretaceous Eagle Plutonic Complex with granodiorites, diorites, granites and pegmatites plus gneisses and amphibolites. In the northeastern part of the TM Property the Eagle Plutonic Complex is separated from the Pasayten Group by a narrow belt of sandstone, conglomerates and argillites of the Eocene Allenby Formation (Princeton Group). The Allenby Formation and diorite and amphiboles of the Eagle Plutonic Complex is separated from the remaining body of the Eagle Plutonic Complex (granodiorite plus gneiss and muscovite-biotite granites plus pegmatites) by a northwest trending fault that runs parallel to the Pasayten Fault to the west.

The northwest corner of the TM Property covers the northeast trending Coquihalla Fault and granodiorites of the Eocene Needle Peak pluton. Small bodies of similar granodiorite, possibly shredded by faulting from the main body, are present in the Dewdney Creek Formation and the Jackass Mountain Group west of Treasure Mountain and the Chuwanten Thrust Fault.

The Pasayten Group sediments appears to be the principal host rock for the mineralization at Treasure Mountain with Dewdney Creek Formation sandstones and argillites with mafic to intermediate volcanics locally to the west of the Chuwanten Thrust Fault. Both units trend northwesterly and are cut by sills and lamprophyre dykes and by dioritic to gabbroic intrusions of Tertiary age and both are transected by the dyke and fault-related mineralization.


TREASURE MOUNTAIN PROJECT
BRITISH COLUMBIA, CANADA
PROJECT REGIONAL GEOLOGY MAP
CANADIAN STRATEGIC METALS CORP.
Legend
Mineral Tenures Boundaries
Airborne Geophysical Survey
EAGLE PLUTONIC COMPLEX
NEEDLE PEAK PLUTON
HOZAMEEN FAULT
MARCH, 2012
NAD83, UTMZ 10
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7


Area of outcrop
Geological boundary (defined, approximate, assumed)
Bedding, tops known (inclined, vertical)
Schistosity, gneissosity, cleavage foliation (inclined, vertical)
Lineation, axis of minor fold, mineral/clast elongation (horizontal, inclined)
Major fold axis (syncline, anticline, overturned fold; arrow indicates plunge)
Lineament (from airphoto)
Fault (defined and approximate; assumed and extension beneath drift)
Normal fault (bar indicated downthrown side)
Strike-slip fault (arrow indicates relative movement)
Thrust fault and "layer parallel" fault; teeth on upper plate
CANADIAN STRATEGIC METALS CORP.
PROJECT GEOLOGY MAP LEGEND
TREASURE MOUNTAIN PROJECT
BRITISH COLUMBIA, CANADA
7

The Pasayten Group within the Property is divided with Winthrop facies (arkoses, conglomerates, argillites and minor red beds) in the west and Virginia Ridge facies (chert-grain sandstones and argillites) in the east. The mineralization at Treasure Mountain was described by Meyers & Hubner (1989) as hosted by the Virginia Ridge facies of the Pasayten Group. However, Monger's geology of the Hope area (1989) show the western part of the Treasure Mountain ridge with Huldra's open pit and underground workings underlain by the Winthrop facies. The eastern part of the ridge is underlain by the Virginia Ridge facies.

The principal Treasure Mountain veins are associated with the northeast trending Treasure Mountain Fault and a feldspar porphyry dyke that partially occupies the fault. The Treasure Mountain Fault cut and offset the Chuwanten Thrust Fault and the sediments of either side of it. From geological mapping in 1952 it appears to be a sinistral normal fault of Tertiraty age. However, slickensides in the pit suggested the major movement is down and to the east making it a dextral fault consistent with other Tertiary northeast trending faults like the Coquihalla Fault (Section 7.2). The dyke and fault are arcuate in plan and dip southeasterly at 50° to 65°. It is estimated that the Treasure Mountain Fault displacement is possibly 300 m or more.

Widths of the feldspar porphyry dyke and sills range from 21 m in the east to 1.5 m in the west suggesting an eastern source that may be an offshoot of a granitic body a short distance from the mine area (maybe related to the Needle Creek intrusions found along northeasterly trending faults in the area). Alteration occurs in proximity to the pre-mineral and highly sheared feldspar porphyry dyke and includes pyritization, carbonatization and chloritization. Mineralization is located along the fault or closely related faults, on either walls and occasionally within the dyke. The dyke itself is apparently un-mineralized, but it appears the borders have been affected by the mineralized hydrothermal fluids.

Calc-alkaline acid to intermediate extrusive and intrusive rock of the Miocene Coquihalla Volcanic Complex outcrop within the southeastern part of the TM Property. The Complex also caps the Coquihalla Mountain wholly within the Eagle Plutonic Complex to the north of the TM. The oldest and most voluminous members of the complex are rhyolitic pyroclastic rocks that have an overall thickness of approximately 1,600 m. Later igneous activity produced numerous andesite to dacite domes, dykes, and sills.

8.0 DEPOSIT TYPES

The veins in the Treasure Mountain area can be classified as "fracture controlled" mesothermal lode deposits. The veins and their silver-lead-zinc mineralization are associated with a feldspar porphyry dyke in the steeply dipping, northeasterly trending Treasure Mountain Fault that cuts Winthrop facies sediments of the Pasayten Group east of the Chuwanten Thrust Fault. The occurrence is to the north of and immediately below an unconformity between Coquihalla Formation felsic volcanic rocks and Dewdney Creek Formation sediments and minor volcanics rocks and Pasayten Group sedimentary rocks. The Coquihalla Formation might be associated with a northeast trending fault that appears to have juxtaposed the underlying sediments. The feldspar porphyry dyke and country rock arkose are weakly altered to sericite, chlorite and carbonate. Veins up to one metre wide occur on both sides of the dyke.

The veins have minor gangue minerals and are composed of altered rock fragments in a matrix of ankerite, calcite, comb quartz and locally abundant "semi-massive" sulphides. The veins contain variable amounts of silver-rich galena, sphalerite and pyrite with traces of chalcopyrite, tetrahedrite and, locally, ruby silver. Mineralized shoots within the veins/dykes extend from 50 to 150 m in length and vary in thickness from 0.5 to 1.5 m and occasionally to more than 2.0 m. The main "C" vein has been explored for 250 m along strike and approximately 350 m down dip. The feldspar porphyry dyke may be an off-shoot from a nearby granitic intrusion that might be related to the Tertiary Needle Peak pluton to the north.

The Cedarflat showing quartz-carbonate-sulphide veining is also hosted within the Winthrop facies sediments of the Pasaytan Group and possibly associated with the Chuwanten Thrust Fault. While there is still insufficient information, it is possible the mineralization can be classified as mesothermal.

Mesothermal lode deposits are a distinct class of deposits that are characterized by their geological and more specifically their "geodynamic" setting in a continental margin, arc-continent and rarely in a compressed back-arc continental margin - collision plate tectonic environment. Mineralization postdates metamorphism which peaks some time after orogenic crustal thickening. The deposits occur most commonly in shear zones within or adjacent to major Terrane boundary fault zones that display strike-slip motion. Mesothermal shear zone systems typically have a vertical extent of mineralization of 750 to 1,000 m. Quartz veins form large, vertically continuous quartz vein systems in this environment. The veins have enveloping carbonate alteration zones and generally contain only small amounts of sulphide minerals. Mineralization takes place under essentially isothermal conditions from deeply circulating, chemically evolved hydrothermal solutions that undergo decompression during regional structural disruptions.

On a district and deposit scale, mesothermal mineral deposits are located in second and third-order structures such as subsidiary faults, cross faults or splays off the large predominantly strike-slip regional faults. There are currently three favoured hydrothermal models for mesothermal deposits in the Cordillera:

1. Meteoric model: the hydrothermal solution is meteoric (surface) water that has been deeply circulated through permeable fracture system. At depth, the fluids leach gold and other vein constituents from the rocks through which they pass and then rise buoyantly along the mineralization hosting structures after they become heated.
2. Metamorphic model with two proposed variants;
    a. Fluids are generated by prograde metamorphism of upper crustal rocks commonly during subduction.
    b. Granulite facies metamorphism (and dehydration) is caused by influx of mantle-derived magmas and carbon dioxide-rich fluid.
3. Magmatic or orthomagmatic model: the traditional view that fluids are totally or in part derived from the devolatilization of cooling magmas, commonly minor felsic intrusions or lamprophyres.

Typically mesothermal mineralizing conditions are; diluted fluids (<5% NaCl-equivalent), temperature around 250°C and depth of mineralization at least 5 km. Fluid-wallrock reactions results in production of pyrite by sulphidation and redox reactions.

The hydrothermal fluid activity and resulting mineralization appears to take place some time after culmination of prograde metamorphism with the time delay estimated to range from 1 up to 40 Ma. The geological model typical for mesothermal gold districts is convergent accretion with underplating of the continental margin.

A distinct geodynamic setting and hydrothermal regime have been recognized in the genesis of mesothermal deposits, namely the decoupling of the mantle lithosphere in a continent-margin collisional tectonic regime that leads to a sequence of magmatic, hydrothermal and mineralizing events. These include:

I. Terrane accretion, commonly with transpression and/or transtension in an oblique subduction regime.
II. Structural thickening of the crust with heating and probable anatexis at the base of the thickened crust.
III. Metamorphism with dehydration of subducted lithosphere at depth and migration of fluids upward along the major structural conduits; early mineralization?
IV. Sodic intrusions (tonalitic or trondhjemitic), rarely calc-alkaline magmatism.
V. Rapid uplift, elevation of isotherms and establishment of steep thermal gradients.
VI. Structural extension marked by molasse type sedimentation in narrow fault-bounded, flanking basins.
VII. Mineralization by large-scale hydrothermal circulation systems; possibly some overprinting and remobilization of older mineralization.
VIII. Late, volumetrically minor alkaline to major calc-alkaline magmatism with the latter ranging from dykes to major, batholithic bodies.

Reference is made to exploration for porphyry copper style mineralization by Bethex within the Jim Kelly Creek drainage. This is within the Quesnellia Terrane and would be porphyry copper style typical of this terrane as exemplified by alkaline type deposits like Copper Mountain deposit in the south (35 km to the east) and calc-alkaline type deposits like Highland Valley farther north near Kamloops.

While less is known of the mineralization in the Eagle Plutonic Complex in the Railroad Creek drainage to the south, there are reports of sulphide vein stockwork and copper mineralization suggesting an association with a buried porphyry copper mineralization system.

In the Methow-Tyaughton Terrane porphyry copper-gold mineralization is hosted in Oligocene intrusion like the Giant Copper mineralization 35 km to the south in Ladner Group sediments.

Air photo interpretations have identified ring-like fractures north of Jim Kelly Creek that could reflect a caldera structure. Pyrite rich and argillic altered volcanic rocks of the Coquihalla Formation in this area suggests potential for epithermal gold mineralization, a mineralization style frequently associated with caldera structures.

9.0 EXPLORATION

9.1 Prospecting

Since signing of the Option Agreement September 1, 2011 CSM has completed reconnaissance prospecting in September and October of 2011 looking for known showings along the logging roads and creeks.

Author Bruland travelled along Railroad Creek roads for possible access to the Cederflat showing at the headwaters of Cedarflat Creek. Eagle Plutonic Complex intrusion outcrop along the roads near the confluence of Railroad Creek with Vuich Creek, but no mineralization was observed. The road along the creek ended approximately 3 km east of the Cedarflat showing and the only present access to the showing is by helicopter.

Author Bruland used helicopter to access the headwater of Cedarflat Creek (MinFile 092HSW066 - Figure 8) where he located the portal area of the old adit. Three samples of massive sulphides were collected from the dump in front of the adit (Figure 9). Significant results with description are tabulated in Table 3 below while all results are in the analytical certificates in Appendix I. The mineralization is hosted by Winthrop facies of Pasaytan Group sediments as at Huldra Silver.

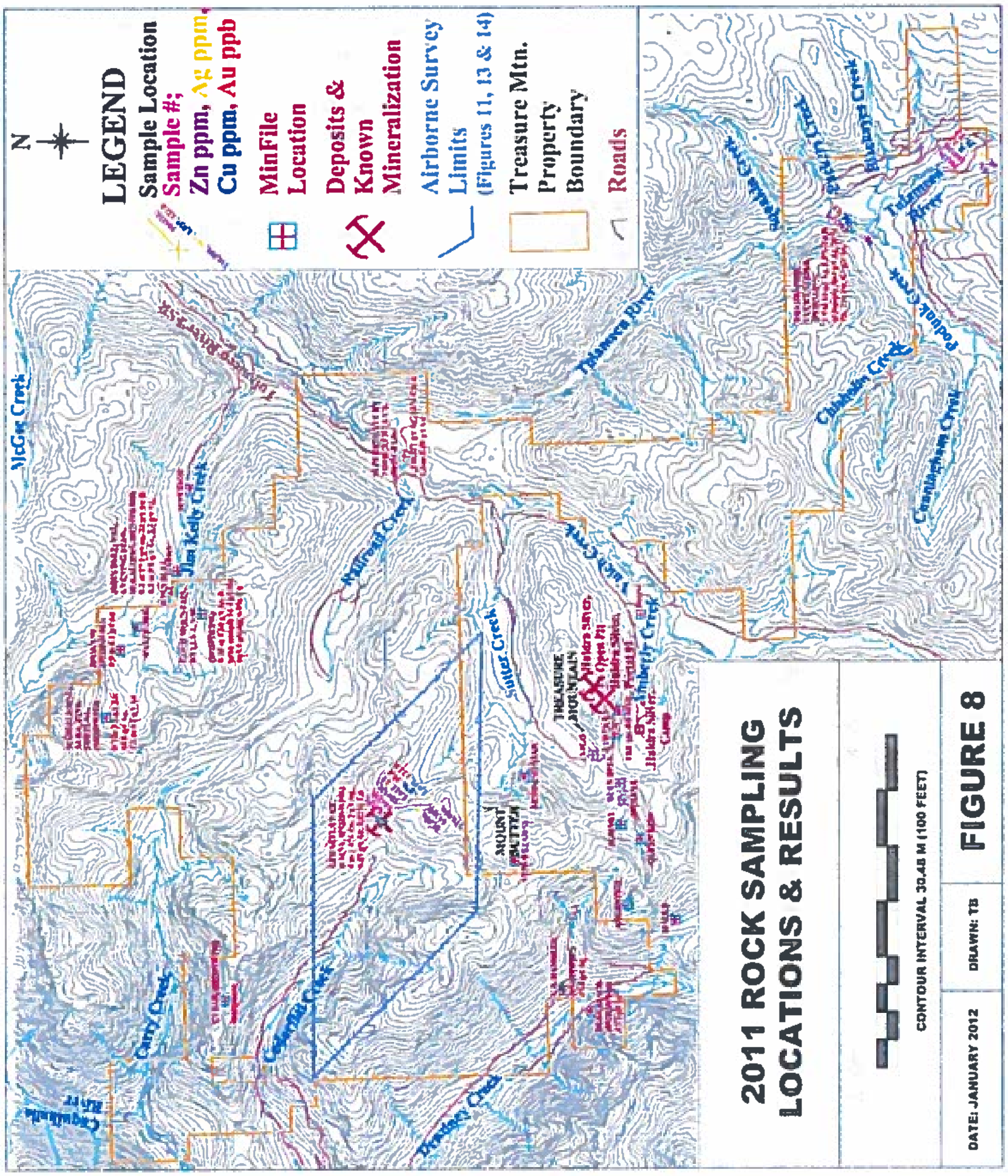


TABLE 4: RAINY/CEDARFLAT ADIT DUMP SAMPLES

Sample #	Easting	Northing	Description	Zn %	Ag g/t	Cu ppm	Au ppb
184329	638591	5479779	Massive sphalerite-pyrrhotite w/ quartz	7.4	19.2	1,621	15
184330	638591	5479779	Massive sphalerite-pyrrhotite w/ quartz	6.5	17.3	876	29.4
184331	638591	5479779	Massive sphalerite-pyrrhotite w/ quartz	11.9	50.9	1,937	122.6

Figure 9: Cedarflat dump in front of collapsed adit.

Two samples (184325 & 184326) from within the Eagle Plutonic Complex were collected on the west side of the Tulameen River south of the confluence with the Podunk Creek (Figure 8). One sample was moderate to intense sheared quartz with fine grained (<1 mm) disseminated pyrite (~5%) and traces of hematite while the other was a hematite-quartz vein. Neither returned anomalous precious or base metal or mesothermal mineralization trace elements (Figure 8 & Appendix I).

Extensive prospecting on the north shore of the Tulameen River approximately 200 m downstream from the confluence with the Podunk Creek failed to locate the Rio Grande showing (MinFile 092HSE075). A sample (184327) of the granodiorite with minor (<1%) disseminated pyrite and 2 cm feldspar vein returned no anomalous precious or base metal values or mesothermal mineralization trace elements (Figure 8 & Appendix I).

Several collapsed adits were discovered on the west shore of the Vuich Creek near the confluence with Railroad Creek, but there was no outcrop around the old workings or float with mineralization. An attempt to reach the Superior showing (MinFile 092HSE240) from Champion Creek FSR failed.

9.2 Airborne Geophysical Survey

CSM contracted Fugro to complete an Airborne Geophysical Survey to map the magnetic and conductive properties and detect zones of conductive mineralization of the northwest part of the TM Property around the Cedarflat showing in the headwaters of Cederflat Creek (Figure 8). The survey was flown from October 2nd to October 14th, 2011.

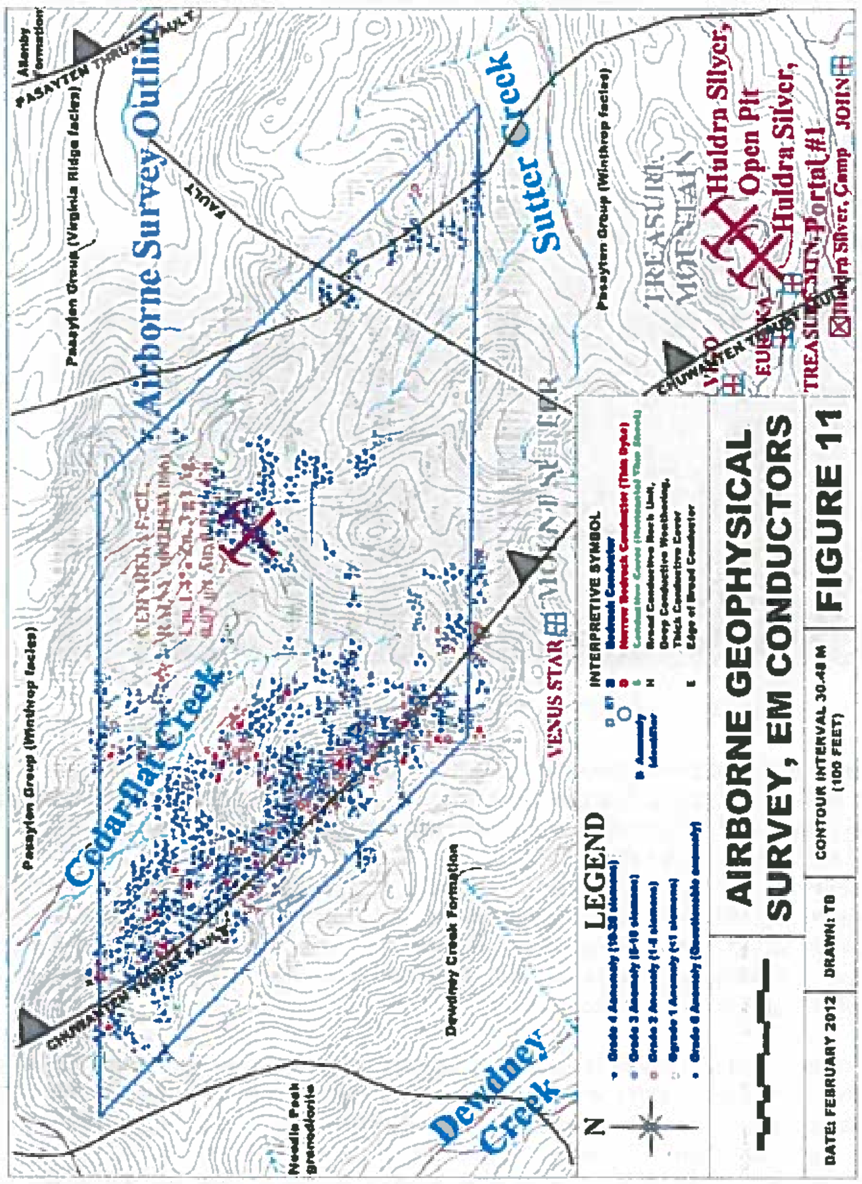
The survey employed the DIGHEM electromagnetic system. Ancillary equipment consisted of a high sensitivity cesium magnetometer, radar and laser altimeters, video camera, digital data recorder, and an electronic navigation system. The instrumentation was installed in an AS-350-B2 turbine helicopter provided by Questral Helicopters Ltd. The helicopter flew with a nominal EM sensor height of approximately 35 m (Figure 10). Coverage consisted of approximately 372.4 line-km including 36.9 line-km of tie lines. Flight lines were flown in an azimuthal direction of 0°/180° with a line separation of 50 m. Tie lines were flown perpendicular to the traverse lines (90°/270°) with a line separation of 500 m.

Figure 10: Questral Helicopters Ltd. with DIGHEM electromagnetic system during airborne geophysical survey near Cedarflat showing.

Discrete EM anomalies have been interpreted from the EM data and have been interpreted to fall within one of two general categories:

- discrete, well defined anomalies, which are usually attributed to conductive sulphides or graphite.
- moderately broad responses, which exhibit the characteristics of a half space. Some of these anomalies may reflect conductive rock units or zones of deep weathering.

The survey interpretation identified a total of 988 discrete EM anomaly responses with respect to conductance grade from the survey data (Figure 11). The conductance of these EM anomaly responses have been given grades between 0 (<1 siemens) and 4 (10 to 20 siemens) of a total conductance scale of up to 7 (> 100 siemens) and the four grades are plotted in Figure 11. There is one grade 4 conductance EM anomaly and seven of grade 3 conductance EM anomalies. The remaining 980 conductance EM anomalies are divided between grade 2 (596 or 60.3%), grade 1 (153 or 15.5%) and grade 0 (231 or 23.4%). The grade value doesn't necessarily mean that higher grades are more significant than others; each conductive EM anomaly has to be view separately and rated depending on signal shape and geological information.



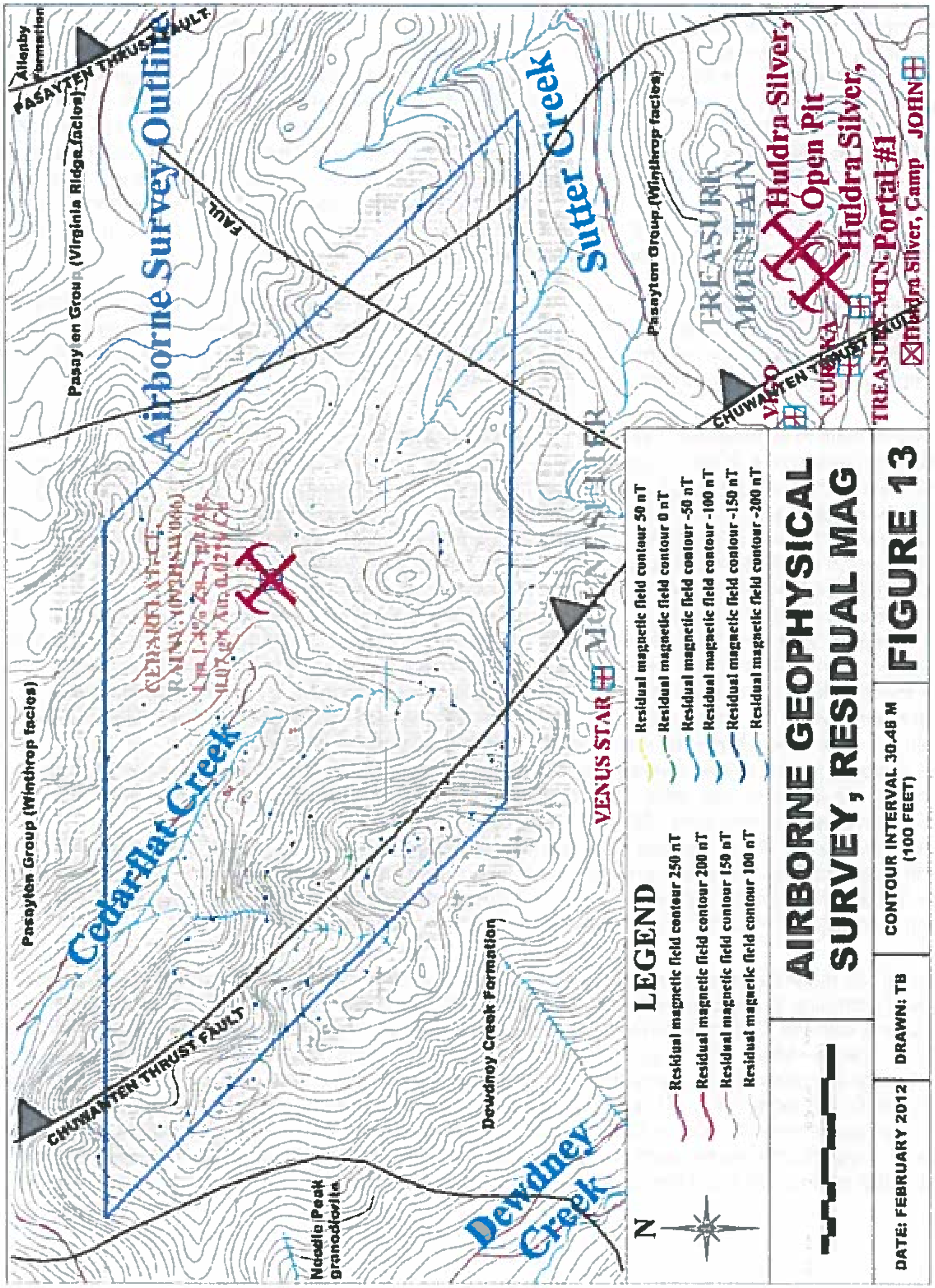
This survey identified thee type of source for the conductance; bedrock, narrow bedrock or thin dyke (generally < 5 to 10 m) and conductive overburden. These are plotted with individual colours in Figure 11. If there is no clear conductance source the interpreted source is marked by a code with a question mark. This is mainly related to cover conductance, whether it is cover (S?) or potential bedrock (B?).

The narrow bedrock (thin dykes) conductors (red conductors on Figure 11) are principally located in the steep SW slopes of the Cedarflat drainage (Figure 12) where the majority of the bedrock conductors (blue conductors on Figure 11) are located. Other areas of bedrock conductors are around the Cedarflat showing and in the SE part of the survey area. The cover conductors (pale green conductors on Figure 11) can be found in various density concentrations in the remaining part of the survey area.

Figure 12: View toward area with thin dyke and bedrock EM conductors in the steep southwest slope of Cedarflat Creek.

Due to the high number of EM conductors on individual flight lines and the fact that the majority of them are broad bedrock EM conductors, it has not been possible to correlate the EM conductors between flight lines. From viewing the EM conductors with the resistivity data it appears that the EM conductors along the western part of the survey area reflect the Chuwanten Thrust Fault (Figure 7) and the EM conductors in the southeast reflect the contact between the Winthrop and Virginia Ridge facies (Figure 7). The concentration of bedrock EM conductors around the Cedarflat showing could reflect the extension of the sulphide mineralization found in the collapsed adit dump. There is also a northwest trending zone of EM conductors with low resistivity (similar to around Cedarflat showing) along the west bank of Cedarflat Creek that could reflect sulphide mineralization.

The total field magnetic and apparent resistivity data attempted to map the magnetic and conductive characteristics of the lithologies within the survey area. The survey principally covers the Winthrop facies of the Pasayten Group sediments. The Residual Magnetic Field data has a range of 659.7 nT (-398.7 to 261 nT) and have been contoured in Figure 13. Without detail mapping of this Winthrop facies that underlies more than three quarters of the survey area it isn't possible to give any lithological interpretation of the magnetic data.


LEGEND
N
Residual magnetic field contour 250 nT
Residual magnetic field contour 200 nT
Residual magnetic field contour 150 nT
Residual magnetic field contour 100 nT
Residual magnetic field contour 50 nT
Residual magnetic field contour 0 nT
Residual magnetic field contour -50 nT
Residual magnetic field contour -100 nT
Residual magnetic field contour -150 nT
Residual magnetic field contour -200 nT
AIRBORNE GEOPHYSICAL SURVEY, RESIDUAL MAG
FIGURE 13
DATE: FEBRUARY 2012
DRAWN: TB
CONTOUR INTERVAL 30.48 M (100 FEET)
Airborne Survey Outline
Cedarflat Creek
Sutter Creek
Dewdney Creek
CHUWANTEN THRUST FAULT
PASAYTEN THRUST FAULT
FAULT
Pasayten Group (Winthrop facies)
Pasayten Group (Virginia Ridge facies)
Allenby Formation
Dewdney Creek Formation
Needle Peak granodiorite
VENUS STAR
TREASURE MOUNTAIN
Huldra Silver, Open Pit
Huldra Silver, Portal #1
Huldra Silver, Camp
JOHN
EUREKA
VIDEO

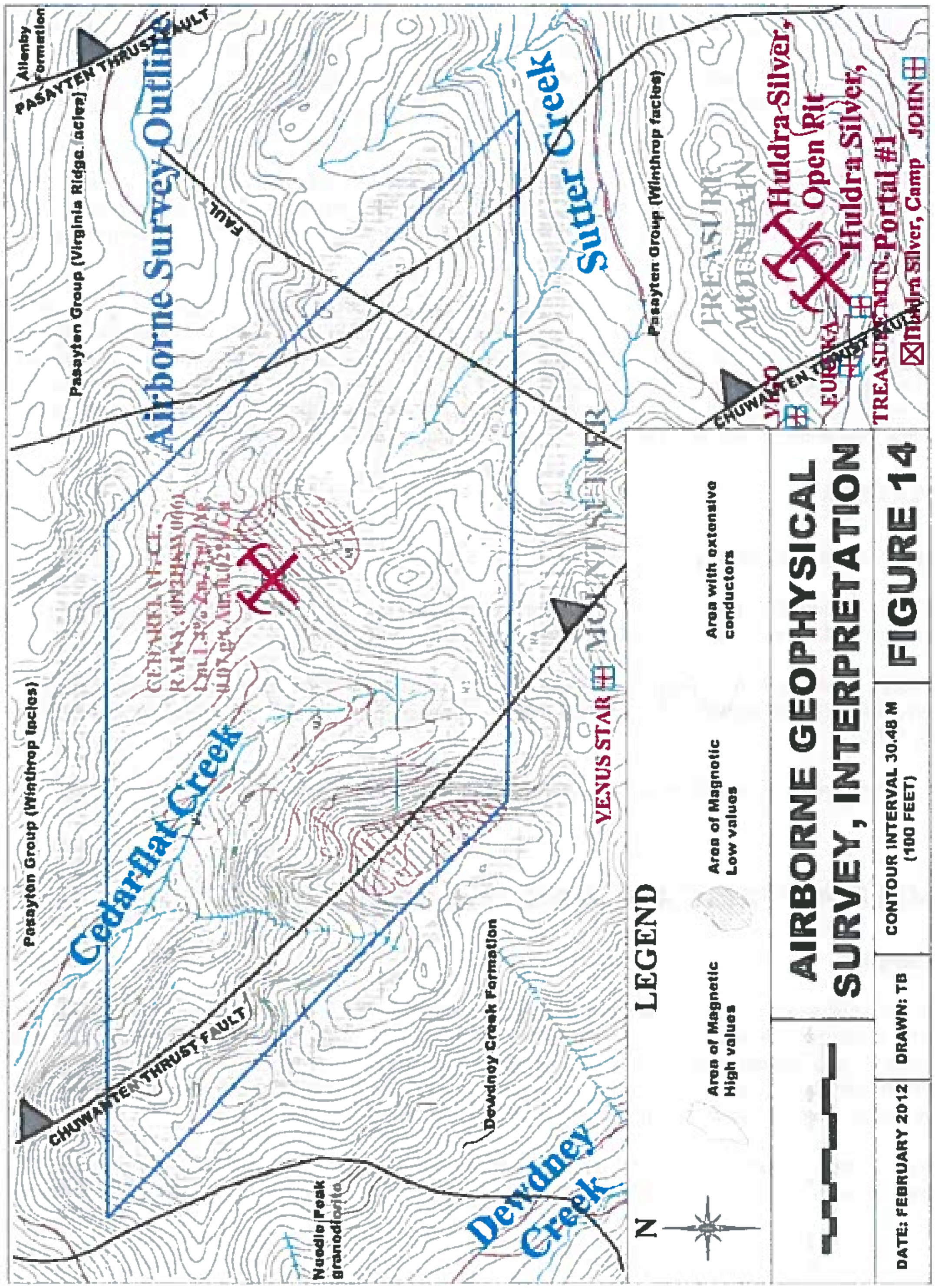
The lowest magnetic values have a northwest trend along the southwestern part of the survey area. These low values are coincident and parallel to the Chuwanten Thrust Fault (Figure 7) and are believed to reflect this regional structure along the steep southwest slope of Cedarflat Creek. A magnetic high is coincident with the conductor cluster around Cederflat showing and are believed to reflect identified pyrrhotite associated with the mineralization in the collapsed adit dump. Another magnetic high including the highest reading within the survey area is a northwest trending anomaly along the west bank of Cederflat Creek. There are no historic records of sulphide mineralization, but it is possible that this magnetic anomaly that is coincident with resistivity low and is located adjacent and to the northeast of an area with relative high concentration of bedrock EM conductors, could reflect sulphide mineralization similar to what is found in the dump of the collapsed adit at the Cedarflat showing.

Fugro outlined prominent magnetic and conductive zones in magenta and orange respectively (Figure 14). These zones reflect the magnetic highs and lows and the bedrock EM conductors described above. Changes in magnetic response together with resistivity data have identified linear features that may reflect possible structural breaks (green lines in Figure 14).

Fugro's interpretation is summarized below and shown on Figure 14:

- R1 conductive zone is the most extensive within the survey area with a 3.9 km long northwest trend along the full southwestern part of the survey area. This zone is up to 1 km wide. The zone reflects multiple EM anomalies, which are indicative of closely spaced bedrock sources. Some display well defined anomaly shapes, which suggest thin, strong dyke like bedrock sources. R1 shows good correlation with a zone of complex magnetic signatures, which is clearly evident on the calculated first vertical derivative map as a change in magnetic texture.
- The highest magnetic intensities are evident within M2 magnetic zone, which is associated with the eastern portion of R1. Many possible structural features, inferred from the magnetic data, intersect R1. Some of the lowest conductivities within R1 are evident along the northwest/southeast contact between M2 magnetic zone and the ML2 strong magnetic low,
- Conductive zone R2 also reflects possible bedrock sources, although it is much less extensive than R1. EM anomaly responses generally indicate broader sources at depth.
- M1 magnetic zone strikes northeast/southwest and appears to cut across the general magnetic strike of the M2 magnetic zone. The correlation with the concentration of EM anomalies in the R2 conductive zone is indicative of bedrock sources.
- Conductive zone R3 is situated near the eastern edge of the survey block. It reflects a mix of both possible broad bedrock and cover sources. EM anomalies indicative of bedrock sources generally reflect broad features. There is little correlation for R3 with the magnetic data. The magnetic data exhibit only several weakly magnetic trends associated with R3.

The coincident M1 magnetic anomaly and R2 conductive zone cover the Cedarflat showing with massive sphalerite and pyrrhotite in the collapsed adit dump. The EM conductors line up both along northeast and northwest trends with the Cedarflat showing at or near the junction of these trends. It is possible that the EM conductor trends reflect structures that host the massive sulphide mineralization. The northeast trending M1 magnetic anomaly suggests that the northeast trend could be the principal mineralized trend. The ML1 magnetic low adjacent to M1 has a maximum residual magnetic low of -98.6 nT over or adjacent to a small lake (approximately 100 by 500 m) that could mask the magnetic bedrock signature. Due to the fact that it appears that cover could partly masked magnetic bedrock responses, this magnetic high-low contrast (208.5 nT to -98.6 nT) isn't presently believed to be significant.



AIRBORNE GEOPHYSICAL SURVEY, INTERPRETATION
FIGURE 14
CONTOUR INTERVAL 30.48 M (100 FEET)
DRAWN: TB
DATE: FEBRUARY 2012
LEGEND
Area of Magnetic High values
Area of Magnetic Low values
Area with extensive conductors
N
Airborne Survey Outline
Cedarflat Creek
Sutter Creek
Dewdney Creek
PASAYTEN THRUST FAULT
CHUWANTEN THRUST FAULT
FAUL
Allenby Formation
Pasayten Group (Virginia Ridge facies)
Pasayten Group (Winthrop facies)
Dewdney Creek Formation
Needle Peak granodiorite
TREASURE MOUNTAIN
VENUS STAR
Huldra-Silver, Open Pit
Huldra-Silver, Portal #1
Huldra Silver, Camp
JOHN
EUREKA

With the additional of the regional geology information of this area it appears that conductive zones R1 and R4 (small zone at south edge of survey area and possible a southeast extension of R1) and the ML2 magnetic low reflect the northwest trending Chuwanten Thrust Fault (Figure 7). It is possible that there could be sulphide mineralization as well in this area, but investigation of that would be difficult in the extreme steep terrain (Figure 12).

The northeastern part of the R1 conductive zone that is sub-parallel and adjacent to the M2 magnetic along the west bank of Cederflat Creek has no present geological (structural or mineralization) correlation and it is recommended that this is carefully mapped and prospected to identify the source of the geophysical anomalies.

The R3 conductive zone appears to reflect the contact between the Winthrop and Virginia Ridge facies of the Pasayten Group sediments that is offset by a northeast trending fault. However, while the regional geology map show this fault as a sinistral fault with approximately 300 m offset (Figure 7), the resistivity data suggest it is dextral fault with an offset of > 400 m or to the northeast of the survey area (Figures 11 & 14). This is consistent with the other apparent northeast striking faults in the region such as the Coquihalla Fault (Section 7.2) and the Treasure Mountain Fault (Section 7.3).

10.0 DRILLING

CSM has not carried out any drilling on the property.

Two short E size diamond drill holes (112.3 m) were completed by Noranda in 1980 to investigate the electromagnetic and soil anomalies on the Cedarflat showing (MinFile 092HSW066).

In the BC Ministry of Mines Annual Report for 1966 reports that Bethex Exploration completed 863.2 m of diamond drilling in five holes exploring for porphyry style copper mineralization. However, no Assessment Reports were filed.

The authors are not aware of any other drilling on the Treasure Mountain Property.

11.0 SAMPLE PREPARATION, ANALYSIS, SECURITY

11.1 Rock Samples

Six samples were collected by author Bruland during prospecting of the TM Property in September and October 2011. Each sample was placed in double, heavy duty (200 g plastic) bags and both bags were individually closed and sealed with plastic cinch straps (zip straps). A laboratory tag with a unique identifier number (six digits) was placed in the initial heavy duty plastic bag prior to closing with the cinch strap and the same number was written on the bag with a felt marker.

UTM coordinates and elevations for all six sample sites were collected with a Garmin Rhino 530 NCx GPS instrument with an accuracy of 4 to 20 m (depending on signal strength and accessibility to available satellites).

All samples were transported by author Bruland to Vancouver and submitted to ACME Analytical Laboratories Ltd. who prepared the samples (description in Section 12.0) and analyzed for gold and 36 additional elements (Appendix I).

Sample locations are plotted on a "windowed" part of Canada's National Topographic System 1:50,000 scale map Hope 092 H/6, Princeton 092 H/7, Tulameen 092 H/10 and Spuzzum 092H/11 (Figure 8) with the TM Property boundaries marked.

11.2 Sample Submission, Blanks and Standard Insertion

The following describes the development of a quality control strategy for sample preparation and insertion of blanks.

The six samples were transported by author Bruland from Hope to Vancouver and submitted to ACME Analytical Laboratories Ltd. for analysis. Both authors have visited the laboratory on numerous occasions over the past two. The laboratory's handling of samples has always been well organized and the areas of sample preparation and analysis have been clean and well ventilated. The laboratory operation is considered to be according to industry standard in all aspects of operation.

The six rock samples were reconnaissance and preliminary in nature and author Bruland decided not to include any standards, blanks or duplicates for QA/QC purposes. Use of standards, blanks or duplicates for QA/QC purposes need to be considered for future programs and the authors recommend implementing an industry standard QA/QC program for more extensive exploration programs in the future, specifically for drilling or trenching programs.

Based on the reconnaissance and exploratory nature of this program and that the results are principally for internal planning of future exploration programs, the authors consider the absence of a QA/QC program to be acceptable and not contrary to industry standard.

The six samples were submitted to ACME Analytical Laboratories Ltd. in Vancouver. The laboratory has been ISO 9001 certified since November 13, 1996 and is working toward ISO 17025:2005 certifications that are expected within a year. ACME Analytical Laboratories Ltd. has for many years been a regular participant in CANMET and Geostats Round Robin proficiency tests. ACME Analytical Laboratories Ltd. is recognized as a participant in the CALA Proficiency Testing Program and is registered by the BC Ministry of Water Land and Air Protection under the Environmental Data Quality Assurance (EDQA) Regulation.

All six samples were analyzed for gold by digesting a split of the prepared sample by Agua Regia and analyzed by ICP-MS. A 0.25 g split of the six prepared samples were heated in HNO_3-$HClO_4$-HF solution to dryness and the dried residue was dissolved in a HCl solution. The Residue-HCl solution was analyzed for 36 elements by ICP-ES. The samples with Zn above the detection limit by the ICP-ES analysis (10,000 ppm or 1.0%) were re-analyzed by ICP-ES to report % level concentrations.

It is the authors' opinion that the security, sample preparation and analytical procedures meet international industry standards for handling and are adequate for securing that the samples arrived at ACME Analytical Laboratories Ltd. without being tempered with and that appropriate sample preparation and analytical techniques were applied to produce reliable analysis.

12.0 DATA VERIFICATION

No commercial international standard were used at this stage of exploration, however ACME Analytical Laboratories Ltd. included one blank for sample preparation. For the analysis they included three and five standards plus one and two blanks for the analysis of the two sample submissions respectively (September and October). The results for the standards and blanks are included in the two certificates (Appendix I).

Based on results of ACME Analytical Laboratories Ltd.'s internal QA/QC program and both authors' experience with the laboratory, it is concluded that the analytical results are acceptable and meet industry standards.

13.0 – 19.0 NOT APPLICABLE

No mineral resources or mineral reserve that conforms to CIM Definitions Standards (December 11, 2005) have been reported or calculated for any areas within the TM Property.

There is no mineral processing or metallurgical testing completed for any samples from the TM Property as defined by NI 43-101.

20.0 ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT

No environmental studies have been initiated or completed on the TM Property, and no environment license exists for the TM Property. It is recommended that a base line environmental study is initiated concurrent with the next phase of exploration on the TM Property.

21.0 – 22.0 NOT APPLICABLE

23.0 ADJACENT PROPERTIES

23.1 Huldra's Treasure Mountain deposit

CIN/CSM mineral tenures surround Huldra's Treasure Mountain deposit to the northwest, north, east and southeast.

Most of the historical work in this area has been on the silver-lead-zinc mineralization on and to the west of Treasure Mountain. In addition to the present open pit and underground workings by Huldra at Treasure Mountain there are nine other showings along Amberly Creek and the westerly slopes of this and the Sutter Creek drainages are reported in the MinFile database (Figure 3).

Mineralization in the area was discovered in 1892. The galena veins "Silver Chief", "Mary E" and "Whynot #3" on Treasure Mountain were prospected the following year. Development of the "Whynot #3" was done with drifting and raising on different parts of the vein. Several others nearby veins were investigated by trenching and short adits.

A mill was installed at Treasure Mountain in 1930 and operated through 1932 processing approximately 3,600 T that yielded 1,230.4 kg (39,558 oz) silver, 172.2 T (379,532 lbs) lead and 40.1 T (88,455 lbs) zinc plus cadmium. The references to this historic production cannot be verified.

In 1950 Silver Hill Mines Ltd. constructed a 50 tpd flotation mill that is reported to have been in place until at least 1956, but there are no production records. The first geological mapping by the BC Department of Mines was done in 1952. Copper Range Exploration Co. Inc. mapped the south slope of Treasure Mountain in 1971, but apparently did not recognize the surface expression of the "C" vein and did not continue their work.

Magnus Bratlien acquired claims on Treasure Mountain in 1979 and formed Huldra in 1980, and subsequently added more claims. Huldra completed geochemical soil surveys and VLF-EM surveys in addition to 518.2 m of diamond drilling in 1981 and an additional 796.1 m of diamond drilling in 1983. This drilling intersected up to 4,340.6 g/t Ag over 18 cm and 3,699.4 g/t Ag over 30 cm. Subsequent trenching near the top of Treasure Mountain exposed the "C" vein almost continuously for 250 m. The indicated average "C" vein width was 0.68 m with a grade of 2,194.3 g/t Ag, 11% Pb and 2% Zn plus low antimony content. In 1987 370 T of un-sorted and 2,200 T partially sorted bulk sample were shipped to the smelters in Trail, BC and East Helena, Montana with reported grade of 3,360.0 g/t Ag.

Level No. 1 adit was re-opened in 1986 and a vein was sampled along 43 m. Over the next 2 years Level No. 2 (392 m) and Level No. 3 (632 m) were developed and Levels No. 1 and No. 4 were extended. Approximately 2,800 m of crosscuts, drifts and raises were completed. The raises supplied information on continuity of mineralization between levels as well as additional access and ventilation. From 1.0 m chip and channel samples collected from the vein and wall rock in the newly developed workings and 1,153.5 m of diamond drill in 1988 a non NI-43-101 compliant resource estimate was completed in 1989. Several nearby silver and gold mineralization prospects were also investigated by trenching and sampling, but not included in the 1989 non NI-43-101 compliant resource estimate.

As mentioned above in Section 8.0 above, Treasure Mountain mineralization can be classified as mesothermal veins with individual veins comprising as much as 90% sulphide and sulphosalt minerals with the remainder being varying quantities of quartz, carbonates (calcite, siderite, manganiferous siderite), chlorite and barite. The veins exhibit a banded or ribboned appearance with seams of massive sphalerite and/or cubic galena separated by narrow layers of gangue, largely quartz and/or carbonates. Pyrite in small quantities is ubiquitous, mostly as disseminated grains, but also as irregular seams or layers. Resources quoted below include both the hangingwall and footwall of the "C" vein. Vein contacts with the enclosing dyke are sharply defined, but small stringer veins occasionally penetrate the walls and (rarely) the main vein has been shown to be internal to the dyke.

Metallic mineralization at Treasure Mountain includes sphalerite, galena, pyrite, arsenopyrite, tetrahedrite, stibnite, pyrrhotite, zinkenite, bournonite and braunite. Magnetite and hematite are also present and native silver occurs within galena and zinkenite. It is also possible that freibergite (argentiferous variety of tetrahedrite) is present. Trace elements (potentially in economic valuable amounts) are antimony, cadmium, barium, mercury and gold. Gangue minerals include comb quartz and carbonates including maybe manganiferous siderite. Near surface the mineralization is mainly carbonate, galena and freibergite. With increasing depth the quartz and sphalerite content increases and the carbonate, galena and freibergite content decreases to Level No. 4 (approximately 350 m down dip from the surface expression of the mineralization) where the vein hosts mostly quartz and black sphalerite. Historic data does not include mineralization in the wallrocks adjacent to the "C" vein and although the 2007 sampling included several samples of wall rock, the number of samples was insufficient to provide a meaningful indication of such mineralization.

Petrographic descriptions (polished sections of vein specimens and one polished thin section) identified a banded vein with sphalerite, quartz, boulangerite, chalcopyrite, tetrahedrite, ankerite, galena, pyrite, bournonite and arsenopyrite in various amounts with minor native silver (?) and trace covellite. One polished thin-section was prepared from the reject portion of an atypical, low sulphide (estimated 6%), high silver (1,714.3 - 2,400.0 g/t Ag) mineralization in a portion of "C" vein. SEM analysis of tetrahedrite contained >10% silver including Ruby silver (probably pyrargyrite).

The silver grade of the "C" vein varies from traces to 10,000 g/t (1.0%) and up to 10% combined lead-zinc. Vertical and lateral zoning of silver values is recognized, with silver to lead ratios apparently increasing from west to east and with elevation. Silver to zinc ratios vary widely locally and it appears to increase away from the dyke.

Ruby silver in the "C" vein approximately 70 m above the Level No. 4 could be evidence of a separate mineralizing event. Modeling by Huldra identified discontinuity in the mineralization in the vicinity of Level No. 2 which supports the presence of more than one mineralizing event. The general distribution of silver within the mineralization appear to be somewhat erratic, silver is present in native silver and tetrahedrite and probably also in significant amounts in galena and boulangerite, particularly at lower levels, where the contents of tetrahedrite and native silver are low. Native silver has been identified in exsolution (?) blebs in boulangerite and in galena.

There are several veins in addition to the "C" vein, but details are few and there appears to be little certainty concerning their identity. Some are splays from the principal "C" vein, while others appear to be parallel structures. There has been very little exploration of these other veins (designated "A", "B" and "D"). Mineralization similar to the "C" vein has also been identified on the north slope of Treasure Mountain near Sutter Creek.

Veins on the southeast slope of Treasure Mountain (approximately 1.1 km from the open pit and underground workings) were discovered by prospecting anomalous silver soil geochemical results. The occurrence ("Ruby" or "East Zone") has been explored by trenching and drilling (diamond and reverse circulation) which identified a porphyry dyke similar to the "C" vein. Samples from drill cuttings and trench samples returned anomalous silver, lead and zinc. However, to date it has not been confirmed that it is an extension of the feldspar porphyry dyke explored in the open pit and underground workings at Treasure Mountain. Both the workings at Treasure Mountain and the Ruby/East Zone are hosted within the Winthrop facies of the Pasayten Group.

Several studies related to possible production has been completed over the past 20 years. Orocon Inc. of North Vancouver, B.C. conducted a technical study of the Treasure Mountain project to determine the potential of the deposit to be profitably brought to production in 1989. The study incorporated metallurgical, geological, environmental and mining engineering components from various consultants (resource re-estimations by Livgard Consulting Ltd., a metallurgical report by Bacon, Donaldson & Associates Ltd. and permitting information provided by Entech Environmental Consultants) and developed a mining program, a mill flow sheet and a Cash Flow Schedule based of a 200 tpd mining operation with a mill designed to treat 300 tpd. Bacon, Donaldson & Associates report indicated recoveries of 94.6% for silver, 94.2% for lead and 93.2% zinc by conventional flotation. Cost to production was estimated at $9.0 million, including working capital. Operating costs were projected to be $92.25/ton.

Huldra submitted a prospectus to the Mine Development Steering Committee in 1989 with the objective of placing the Treasure Mountain property into production. The permitting process was not completed and the Orocan recommendations were not implemented and underground work on the property ceased in 1989. Huldra retained the property and completed several exploration programs including soil geochemical surveys, trenching, surface and underground diamond drilling in the period between 1990 and 2006.

A non NI 43-101 compliant economic and production analysis for the feasibility a 22,700 tpy mine/mill operation in 1998 concluded that a seasonal operation with mill capacity of 150 tpd would be viable.

Huldra resumed work toward a small underground mine at Treasure Mountain in 2006 with the preparation of a detailed production evaluation on the basis of available geological, metallurgical and environmental data. Rehabilitation of the underground workings was started in 2007 and was followed by sampling based on accessibility, rock quality and the condition of the workings. The work toward opening an open pit and underground mine on the "C vein" is still ongoing with diamond drilling and bulk sampling.

A National Instrument 43-101 compliant resource estimation was prepared in 2009 following CIM Definition Standards for Mineral Resources and Mineral Reserves, Best Practice Guidelines, using computer-based methods for processing all available assay and survey data, conducted modeling studies and identified a resource that occurs in narrow, sharply defined veins. The resource was diluted for practical mining purposes to a 1.5 m mining width with 311.0 g/t silver cut-off (Table 4).

TABLE 5: TREASURE MOUNTAIN TREASURE-GOLD-SILVER RESOURCES

Resource Estimate	Category	Resource, Tonnes	g/t Ag	% Pb	% Zn
2009	Indicated	33,000	752.7	4.2	3.8
	Inferred	120,000	839.8	2.8	4.4
	TOTAL Indicated & Inferred	153,000	821.0	3.1	4.3

A 2009 updated revised capital costs established $5.1 million for the first 2 years with operating cost of $238/tonne.

Huldra received a permit for extraction of a 10,000 T bulk sample from their silver-lead-zinc deposit at Treasure Mountain from the BC Ministry of Energy and Mines on July 14, 2010. The bulk sample is scheduled to be extracted from the open pit and underground workings during the fall of 2011. Several possible destinations the bulk sample is being considered.

Additional surface rights adjoining the historic mineral tenures have been acquired. A camp has been constructed and other preliminary works are currently in progress related to production including acquiring the former Craigmont mine property 70 km to the north near Merritt, BC as a possible site of a mill that would process coarse material from the deposit.

A draft small mines permit application was submitted to the BC Ministry of Energy and Mines on March 31, 2011 in anticipation of positive results from the bulk sample. The permit application provided for extraction of up to 75,000 tonnes per year of raw ore that would be transported to an offsite mill.

23.2 Copper Mountain Porphyry-Copper-Gold deposit

The TM Property is located approximately 35 km west of Copper Mountain Mining Corporation's newly re-opened Copper Mountain Mine, while not immediately adjacent, is considered a relevant target type since the TM Property and the Copper Mountain mine cover a similar geological environment. The Copper Mountain deposit is located in the northerly trending Mesozoic tectono-stratigraphic Quesnellia Terrane which is composed of a volcanic arc with overlying sedimentary sequences. The deposit itself is found within the Upper Triassic Nicola Group that is divided into four facies with the Copper Mountain alkaline porphyry copper-gold deposits hosted by the "Eastern volcanic facies". This facies is composed of mafic, augite and hornblende porphyry pyroclastics and flows that are intruded by a suite of Lower Jurassic alkaline dykes, sills, irregular plugs and zoned plutons of the Triassic Copper Mountain Intrusive Complex. Other than local contact effects and alteration associated with mineralization, the stratified rocks are relatively fresh having undergone only lower greenschist metamorphism.
Mineralization is found within a 1.9 km by 4.0 km belt extending from the Ingerbelle pit in the west to the southeast with three pits are located adjacent and to north of the Copper Mountain Fault. Additional copper mineralization is related to the Triassic Copper Mountain Intrusive Complex and the Triassic Lost Horse Intrusive Complex to the south and north respectively. Initial underground mining was started by Granby Consolidated Mining, Smelting and Power Company (Granby) in 1925 and continued through two periods to 1957. Newmont Mining Corporation of Canada acquired the claims over what is now the Ingerbelle pit in 1966 and all of Grandby's claims in 1967. Open pit mining of the Ingerbelle deposit started in 1972 and with Pit 2 at Copper Mountain in 1983. The mine was sold to Cassiar Mining Corporation (later to become Princeton Mining Corp.) in 1988 and mining continued to 1993 and again between 1994 and 1996. Copper Mountain Mining Corporation purchased the mine in 2006. Total production from the Copper Mountain and Ingerbelle deposits between 1925 and 1993 was 1.7 billion pounds of copper, 8.4 million ounces of silver and 0.62 million ounces of gold.

The mineralization at Copper Mountain is centered on Pit 1, Pit 2 and Pit 3.

- Pit 1 is a chalcopyrite zone (300 by 700 m to a depth of 170 m) northwest of the underground mine with most of the mineralization along a northwest-southeast fault in massive and fragmental volcanics. The mineralization occurs as fine disseminations of chalcopyrite and pyrite with rare blebs and stringers with thin fracture coatings of bornite and chalcopyrite in a fine-grained tuff bed in the west part.
- The Pit 2 is located northeast of Pit 1 along the contact of Nicola Group volcanics and Lost Horse Intrusive Complex rocks. The mineralization (360 by 600 m to a depth of 170 m) is fault controlled with local centers of predominant chalcopyrite and pyrite with rare bornite, but with greater proportion of coarse blebs and veinlets than in Pit 1.
- Pit 3 to the southeast of Pit 1 continues southeast, along the contact to the Copper Mountain stock but hosted by the Nicola Group volcanics. Mineralization (500 by 1,200 m to a depth of 400 m) is along a northwest-striking major fault or at the intersection of porphyry dykes with northeast-striking faults and pegmatite-sheeted zones. The mineralization includes approximately 50% of the underground production. The highest grades are hosted by fine-grained bedded tuffs that are brittle and have shattered resulting in significant fractures with equal proportions bornite and chalcopyrite.

Production commenced at the Copper Mountain Mine in July 2011 after approximately 15 months of development. The present mining plan is to combine three existing open pits (Pit 1, Pit 2 & Pit 3) into one large super pit over time. The mine plan starts with a series of push–backs in the early years in Pit 3 and will later expand northeast and northwest until Pit 2 and Pit 1 merge with Pit 3. Production is 35,000 tpd with predicted recovery of 89% for copper, 66% for gold and 49% for silver with annual recovery of 108 million pounds of copper, 27,000 oz of gold and 330,000 oz of silver over a 17 year mine life. The reserves and resources from the 2009 Feasibility Study is listed below in Table 5.

TABLE 6: COPPER MOUNTAIN COPPER-GOLD-SILVER RESERVES AND RESOURCES

Resource update	Category	Resource, Million Tonnes	% Cu	g/t Au	g/t Ag
April 2009	Proven & Probable	232.8	0.36	0.09	1.25
	Measured & indicated	359.6	0.37	N/A	N/A
	Inferred	186.7	0.29	N/A	N/A
	TOTAL	**779.1**	**0.35**	**N/A**	**N/A**

23.3 Giant Copper Porphyry Copper mineralization

Giant Copper porphyry copper mineralization is located approximately 35 km south of the TM Property, while not immediately adjacent, is considered a relevant target type since the TM Property cover a similar geological environment. The deposit is a copper-gold-silver-molybdenum hydrothermal system with associated breccia pipe and base metal veins (Robertson, 2006). It comprises a cluster of showings in and around a northwesterly trending quartz diorite to diorite stock intruded into Ladner Group sedimentary rocks east of the Hozameen Fault. The AM zone is an elliptical (350 m by 150 m), northwesterly trending, steeply dipping, fault bounded breccia pipe on the west side of the quartz diorite to diorite stock. It is composed of angular to rounded fragments of altered, tourmalinized, sediments. The matrix contains tourmaline, feldspar, quartz, calcite and erratically distributed blebs of sulphide (pyrite, pyrrhotite, chalcopyrite, arsenopyrite and lesser sphalerite and molybdenite). The highest copper values are at the north end of the pipe. Gold values increase with enrichment in both copper and arsenic, although the latter two elements show little obvious correlation.

The property was the subject of a positive feasibility study in 1989 that was based on a non NI43-101 compliant resource calculation (Table 6):

TABLE 7: GIANT COPPER 1989 RESOURCES (HISTORIC & NON NI43-101 COMPLIENT*)

Description	Category	Resource, Tons	% Cu	oz/ton Au	oz/ton Ag	% Mo
AM Main Underground	Indicated/ Measured	2,149,200	1.261	0.017	0.620	0.006
AM Main Underground	Inferred	556.000	1.227	0.019	0.610	0.006
AM East Underground	Inferred	551,000	1.157	0.007	0.780	0.042
AM Open Pit	Inferred	29,523,030,	0.653	0.011	0.360	0.007

* The resorces are historic and not compliant with CIM Definitions Standards (December 11, 2005) or NI 43-101 regulations and the historical estimate should not be relied upon.

The resource was almost exclusively contained in the north nose of the AM zone breccia pipe. The majority of the pre-1989 drilling was not assayed for molybdenum, so distribution of molybdenum in the AM zone is not well defined, but is significant in some areas based on the results from hole GSC06-01 which intercepted 296.7 m of 0.027% molybdenum along with copper, gold and silver mineralization.

Although the above information is considered to be reliable, the authors have been unable to verify the information beyond the 2006 NI43-101 Technical Report.

24.0 OTHER RELEVANT DATA AND INFORMATION

BC Geological Branch collected nine widely spaced stream samples from creeks draining the TM Property in 1981. Ag, Au, Cu, Mo, Pb or Zn values in the survey are considered to be near background to generally very weakly anomalous. However, the samples were collected principally in the main drainages and downstream from the TM Property boundaries.

25.0 INTERPRETATION AND CONCLUSIONS

Reconnaissance sampling from the CIN/CSM Treasure Mountain mineral tenures confirmed historic precious and base metals values at the Cedarflat showing (MinFile 092HSW066). Information is limited, but it appears to be structural hosted mesothermal mineralization related to the Chuwanten Thrust Fault just as Huldra's mesothermal deposit is approximately 4.7 km to the southeast. The Cedarflat showing is hosted in a steep slope and geomorphology and the airborne geophysical data suggest it could be on or adjacent to a northeast trending structure parallel to a mapped structure two km to the southeast the showing and southeast of Mount Sutter. Alignment of EM conductors from the airborne geophysical survey supports this interpretation. The orientation of the collapsed adit indicates a northeast strike of the quartz-sulphide mineralization,which parallels the interpreted northeast structure at the headwater of Cedarflat Creek. Soil geochemical surveys have also established a general northeast trend of anomalous zinc.

There are several showings and historic reports referring to quartz sulphide veins with precious ± base metals mineralization south of Coquihalla Mountain in the Jim Kelly Creek drainage within Eagle Plutonic Complex diorite and granodiorite of the Quesnellia Terrane. The mineralization is described as structural controlled and in at least one case found to be in tension/dilation fractures related to a major structure along Jim Kelly Creek. Description of the vein and mineralization suggest that they are mesothermal and could be all related to the Pasayten Fault 500 to 1,000 m to the southwest.

Bethex conducted porphyry copper exploration within Eagle Plutonic Complex diorite in the mid 1960s. The work is referred to in the BC Ministry of Mines and Petroleum's Annual Reports for 1965 and 1966. Although this is post initiation of the assessment work filing, no assessment report has been filed for the over 5.5 km of trenching and 863.2 m of diamond drilling. Geological description in the Annual Reports is limited, but refers to altered granodiorite that is unevenly porphyritic and carries disseminated hematite as well as pyrrhotite and chalcopyrite on fractures. The quartz-sulphide vein mineralization in the Jim Kelly Creek is described as carrying chalcopyrite, tetrahedrite and bornite with copper grades up to 4.9%. One of the showings (MinFile 092HSW048) is described as a polymetallic vein with lead and zinc in addition to silver, gold and copper. These could be distal porphyry copper system veins and it is possible that the veins in the Jim Kelly drainage are surface expression of a buried porphyry copper ± gold system with the Pasayten Fault being part of the hydrothermal fluids plumbing system.

Little is known about Superior showing (MinFile 092HSE240) east the confluence of Railroad Creek and the Vuich Creek apart for it being stockwork related to a quartz porphyry dyke. The showing is hosted by the Eagle Plutonic Complex diorite, the same as is host to potential porphyry copper ± gold mineralization in the Jim Kelly Creek drainage. A 1981 VLF-EM survey identified a northeast trending anomaly on the north side of Vuich Creek that potential could reflect a structure. There are several reported historic adits and trenches around the VLF-EM anomaly that could confirm/support the existence of a structure, but to date none of these workings have been located. There are additional trenches and adits one km to the northwest in the slope north of Railroad Creek within the Eagle Plutonic Complex with reported copper mineralization including malachite. These showings are located 1.5 km northeast of the Pasayten Fault and it is possible that all these working have explored mineralization related to a buried porphyry copper ± gold mineralization in the Railroad Creek drainage with the Pasayten Fault being part of the hydrothermal fluids plumbing system.

The Rio Grande showing (MinFile 092HSE075) is reported to be an isolated polymetallic vein showing in the Eagle Plutonic Complex (granodiorite). Several traverses were made along the northwest bank of the Tulameen River without locating the showing. The granodiorite is fresh with no obvious trace of alteration. The showing is not considered significant at this time and further work to locate it should be postponed to more is known about mineralization in the Eagle Plutonic Complex through exploring the Jim Kelly Creek and Railroad Creek drainages mineralization and the potential that the known mineralization could be related to buried porphyry copper ± gold mineralization.

The geological setting that includes northeast and northwest lineaments and faults, Oligocene-Miocene felsic volcanic rocks, Eocene-Oligocene granodiorite stocks and felsic dykes with associated sulphide mineralization within and around the TM Property suggest a Middle Tertiary metallogenic event in this general area. As pointed out by Pinsent,(1998) and more recently by McDonough (2011), the post-accretionary Cascade Magmatic Arc of southwestern BC and northwestern Washington state hosts a number of mineral deposits, either in close association with Middle Tertiary stock and dyke-size intrusions or in or adjacent to intersections between compressional and extensional structures. These deposits fall into three broad categories:

1. porphyry copper and/or molybdenum deposits, some of which are associated with breccia pipes;
2. quartz vein gold deposits that are associated with quartz diorite plutons;
3. carbonate vein silver, lead, zinc deposits that are associated with felsic dykes in northeasterly trending faults.

The Giant Copper mineralization (Section 23.3), approximately 35 km south of TM Property is associated with Oligocene granodiorite stocks and consists of breccia-hosted, porphyry-related mineralization, with a significant copper-gold-silver-molybdenum content. Similar mineralization could be found associated with the Eocene-Oligocene granodiorite stocks and felsic dykes within the TM Property boundaries.

Longe, (1982) refers to altered volcanic rocks of the Coquihalla Formation to the north of the TM Property as prospective host for gold mineralization. Descriptions of models for epithermal volcanic hosted mineralization (e.g., Simmons, 2005 and others) indicate that the Miocene age Coquihalla Formation volcanics in the southeastern part of the TM property warrant investigation.

26.0 RECOMMENDATIONS

It is recommended that exploration be carried out in the Cedarflat area to expose the quartz-sulphide mineralization and establishing the extension of the mineralization along strike. The collapsed adit and old trenches should be cleaned out to expose the mineralization in them. The airborne geophysical survey identified EM conductors along a northeast trend centered on or adjacent to the collapsed adit and previous geochemical and ground geophysics surveys that defined a general northeast anomalous trend. Ground VLF-EM geophysical surveys should assist in defining the trend and/or extension of the structure that is believed to host the precious and base metal mineralization beyond the collapsed adit. Due to the inaccessibility of this location, it is recommended that hand trenching should be carried out along the zinc, multi-element and ground geophysical anomalies to potential expose the extension of the mineralization and identify the source of the EM conductors.

Prospecting should be conducted in the Jim Kelly Creek drainage to locate and sample the three structural controlled precious metal veins showings (Minfiles 092HSW048, 092HSW051 & 092HSW052). The historic trenches along the West Fork of Jim Kelly Creek should be located and cleaned out for mapping and sampling. Two wide spaced deep penetrating IP lines should be completed centered on the historic trenches to determine if there is potential for buried porphyry copper ± gold mineralization.

The trenches and adits along the north slopes of Railroad Creek need to be located, mapped and sampled to establish control of the mineralization and its potential alteration. Time should be spent locating the reported historic workings along the northeast trending VLF-EM anomaly. If located, they should be cleaned out, mapped and sampled to identify the source of the VLF-EM anomaly. The Superior showing (MinFile 092HSE240) should also be located. Mapping of these historic workings would establish whether or not the granodiorite and reported quartz porphyritic dyke are altered and mineralized. Detailed mapping of geology and identification of any alteration and mineralization within the Railroad Creek drainage should enable an evaluation of the potential for buried porphyry copper ± gold style mineralization here.

A program of detailed stream sediment sampling, coupled with float and heavy mineral concentrate examination, is recommended to evaluate the remaining part of the 108.8 km^2 TM Property. Mineralization target types will be porphyry copper-gold +/- molybdenum (Jurassic Quesnellia hosted (Copper Mountain deposit) or Middle Tertiary Cascade Magmatic Arc association (Giant Copper mineralization)), vein type silver-lead-zinc (Huldra's Treasure Mountain deposit) and volcanic hosted epithermal gold-silver (Miocene continental volcanic rocks). The program should be concurrent with reconnaissance scale geological mapping and prospecting in stream bed, ridges and logging roads, using four wheel drive trucks and ATVs on existing and abandoned FSR with some helicopter support. Any findings in stream sediment samples, float or outcrop, such as porphyritic intrusions or breccias, chalcedonic quartz, altered or pyritized rocks, tourmaline etc, should be followed up with more detailed mapping and sampling.

Areas of lineament intersections (intersection NW regional structures with secondary NE structures - Huldra's Treasure Mountain deposit), conductive zones (possible reflecting sulphide mineralization) and resistivity high (possible granitic intrusions) defined by the airborne geophysical survey should be prospected and if justifiable mapped in detail.

Also recommended is a baseline water sampling for environmental monitoring, as part of the Phase I program conducted in conjunction with the stream sediment sampling program.

Estimated costs for a Phase I exploration program is $225,000 with details in Table 7 below.

TABLE 8: RECOMMENDED PHASE I EXPLORATION BUDGET

Description	Description Details	Group Total
Mapping	Supervisor, senior & junior geologists	$45,192.00
Geology assistants	Senior & junior geologists plus Line cutters	$21,560.00
Room & Board	All inclusive	$31,220.00
Transport	Pickups & fuel	$5,750.00
Supplies	Miscellaneous	$1,525.44
Bulldozer	Excavator	$19,040.00
Geophysics	Deep penetration IP	$52,523.20
Analytical (from ACME 2011 schedule)	500 rock & stream samples	$22,639.12
Environmental	Baseline water sampling	$4,877.60
Sub Total		**$204,327.36**
Contingencies	10.0%	$20,432.74
Total Exploration		**$224,760.10**

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CERTIFICATE OF QUALIFICATION

To accompany the report entitled:

TECHNICAL REPORT ON THE TREASURE MOUNTAIN PROPERTY

I, **Donald G. Allen**, M.A.Sc., PEng (B.C.), do hereby certify that

1. I am a Canadian citizen, resident at Vasco de Contreras 342 y Moncayo, Quito, Ecuador.

2. I am a graduate of the University of British Columbia, and hold degrees in Geological Engineering, B.A.Sc. (1964) and M.A.Sc. (1966). I have been employed in my profession as an exploration geologist on a full time basis since graduation.

3. I am a registered member of the Association of Professional Engineers and Geoscientists of British Columbia as a Professional Engineer and is in good standing with the association for the 2012 calendar year. I am also a member of the Society of Economic Geologists.

4. I have read National Instrument 43-101, and certify that based on my education, affiliation with a professional association and past experience I fulfill the requirements to be a "Qualified Person" as defined by National Instrument 43-101.

5. Due to snow accumulation on the TM Property in January I was not able to visit the site and review the geology and mineralization. Site visit is scheduled for this spring or early summer after the snow has melted.

6. I am familiar with the project and have reviewed all available exploration reports and historic data as well as other relevant data in the public domain for this region.

7. I have never examined or evaluated any of the area that is now the TM Property.

8. I am coauthor of this report and as such accept full responsibility for the accuracy and the content of the information in all sections of this report.

9. Neither I nor any affiliated persons currently own, directly or indirectly, any interest in the properties or securities of Canadian Strategic Metals Corp. and I am therefore independent of Canadian Strategic Metals Corp. in accordance with National Instrument 43-101 regulations Section 1.5.

10. I am not aware of any material change with respect to the subject matter of this technical report that is not reflected in this report, the omission to disclose which would make this report misleading.

11. I am familiar with the National Instrument 43-101, Form 43-101F1 and this report has been prepared in compliance with that instrument and form.

12. I consent to the use of this report for the purpose of complying with the requirements set out in National Instrument 43-101 for submitting a technical report.

13. The effective date of the report is February 24, 2012.

14. As of the effective date of the technical report, to the best of my knowledge, information, and belief, the technical report contains all the scientific and technical information that is required to be disclosed to make this technical report current and not misleading.

Dated at Quito, Ecuador, this 24th day of February, 2012.

/s/ "Donald G. Allen"

Donald G. Allen, M.A. Sc., P.Eng. (B.C.)
Consulting Economic Geologist

CERTIFICATE OF QUALIFICATION

To accompany the report entitled:

TECHNICAL REPORT ON THE TREASURE MOUNTAIN PROPERTY

I, TOR BRULAND, Consulting Geologist, and proprietor of Cascade Geological Services and President of 681874 B.C. Ltd., with residence and business address at #, B.C. V3S 3K3 does hereby certify that:

1. I am a graduate of the University of Bergen, Norway with a Cand. Mag. (B.Sc. equivalent) in 1977 and Cand. Real. (M.Sc. equivalent) in 1980.

2. I have practiced my profession as a geologist, within the private sector and as a consulting geologist in the Canadian Cordillera and in Bolivia, Chile, China, Ecuador, Mexico, Mongolia, Norway, Peru and the United States for 35 years. Work beyond graduation has included detailed geological investigations, examinations, exploration, underground bulk sampling, processing of bulk samples in a 150 tpd grinding and flotation plant and reporting on a broad spectrum of mineral prospects and properties. I am presently practicing as an independent Consulting Geologist through my proprietorship Cascade Geological Services and incorporated company 681874 B.C. Ltd.

3. I have been registered with the Association of Professional Engineers and Geoscientists of British Columbia as a Professional Geoscientist since 1992, and I am in good standing with the association for the 2012 calendar year.

4. I have read National Instrument 43-101, and certify that based on my education, affiliation with a professional association and past experience I fulfill the requirements to be a "Qualified Person" as defined by National Instrument 43-101. However, as Director of Canadian International Minerals Inc., I am not independent of the Company as defined by the regulations. Relevant experience with regard to the foregoing report includes evaluation and exploration for mesothermal vein and porphyry copper ± gold mineralization in the Canada, China and South America.

5. I am familiar with the project and have reviewed all available exploration reports and historic data as well as other relevant data in the public domain for this region.

6. I visited the general area in 1983 for an evaluation of Huldra Silver Inc. project on Treasure Mountain, but neither during that time nor before or since have I examined or evaluated any of what is now the TM Property.

7. I personally examined the Treasure Mountain Property on September 9 and 10 and October 13 and 14, 2011 on behalf of Canadian International Minerals Inc. .

8. I personally collected the rock samples in September and October 2011.

9. This certificate applies to "*2012 TECHNICAL REPORT ON THE TREASURE MOUNTAIN PROJECT*", dated February 24th, 2012. I am responsible for preparation of all sections of the report in cooperation with independent Geological Consultant Donald G. Allen, P.Eng. (B.C.) utilizing data summarized in the reference section of this report and data collected during the site visit.

10. As of the date of this certificate, to the best of my knowledge, information and belief, the technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

11. I have been a Director of Canadian International Minerals Inc. since September 2, 2010.

12. I do own 150,000 common shares in Canadian International Minerals Inc. and have 200,000 options at $0.13 and 200,000 options at $0.21.

13. I have read National Instrument 43-101, Form 43-101F1 and Companion Policy 43-101CP and the foregoing technical report has been prepared in conformity with this National Instrument, Form 43-101F1, Companion Policy 43-101CP and generally accepted Canadian mining industry practice.

Dated at Vancouver, B.C., this 24th day of February 2012:

Signed and sealed by:

/s/ "Tor Bruland"

Tor Bruland, M.Sc., P.Geo. (B.C.)
Geological Consultant

APPENDIX I

ACME ANALYTICAL LABORATORIES LTD.
ANALYTICAL CERTIFICATE

AcmeLabs Acme Analytical Laboratories (Vancouver) Ltd.
1020 Cordova St. East Vancouver BC V6A 4A3 Canada

www.acmelab.com

Client: Canadian International Minerals Inc.
Suite 1128 - 789 W. Pender Street
Vancouver BC V6C 1H2 Canada

Submitted By:	Tor Bruland
Receiving Lab:	Canada-Vancouver
Received:	September 23, 2011
Report Date:	November 04, 2011
Page:	1 of 2

CERTIFICATE OF ANALYSIS VAN11004983.1

CLIENT JOB INFORMATION

Project:	Treasure Mtn.
Shipment ID:	
P.O. Number	
Number of Samples:	2

SAMPLE DISPOSAL

STOR-PLP	Store After 90 days Invoice for Storage
DISP-RJT	Dispose of Reject After 90 days

Acme does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Method Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
R200-250	2	Crush, split and pulverize 250 g rock to 200 mesh			VAN
1E	2	4 Acid digestion ICP-ES analysis	0.25	Completed	VAN
3A01	2	Ignite samples, acid digest, Au by ICP-MS	15	Completed	VAN

ADDITIONAL COMMENTS

Invoice To: Canadian International Minerals Inc.
Suite 1128 - 789 W. Pender Street
Vancouver BC V6C 1H2
Canada

CC:

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.
All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.
"**" asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.

AcmeLabs Acme Analytical Laboratories (Vancouver) Ltd.
1020 Cordova St. East Vancouver BC V6A 4A3 Canada
Phone (604) 253-3158 Fax (604) 253-1716
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Suite 1128 - 789 W. Pender Street
Vancouver BC V6C 1H2 Canada

Project: Treasure Mtn.
Report Date: November 04, 2011

CERTIFICATE OF ANALYSIS VAN11004983.1

		Method	WGHT	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E
		Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca
		Unit	kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
		MDL	0.01	2	2	5	2	0.5	2	2	5	0.01	5	20	4	2	2	0.4	5	5	2	0.01
184325	Rock		2.00	<2	3	6	53	<0.5	<2	4	679	2.56	5	<20	<4	<2	168	0.5	<5	<5	49	2.84
184326	Rock		3.08	<2	21	10	40	<0.5	4	10	839	2.96	101	<20	<4	<2	116	0.7	<5	<5	81	3.69

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CERTIFICATE OF ANALYSIS VAN11004983.1

	Method	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	3A
	Analyte	P	La	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Sn	Y	Nb	Be	Sc	S	Au
	Unit	%	ppm	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppb
	MDL	0.002	2	2	0.01	1	0.01	0.01	0.01	0.01	4	2	2	2	2	1	1	0.1	0.5
184325	Rock	0.072	7	<2	0.64	324	0.28	7.04	3.67	1.31	<4	<2	2	8	2	<1	4	<0.1	3.3
184326	Rock	0.042	7	5	0.36	248	0.26	6.14	1.92	1.68	5	<2	<2	9	<2	<1	13	1.7	2.3

Spherics

If the frequency of spherics events affected the quality of the electromagnetic data as it was being processed by the acquisition system in real time, survey flying was suspended. Flying was not performed when spherics became sufficiently intense and frequent that digital data processing techniques could not recover useful data.

The Dighem EM system includes two spheric/powerline channels for noise monitoring. Most spheric activity is susceptible to reduction by post-survey filtering to less than 2.0 ppm.

Spheric pulses may occur having strong peaks but narrow widths. The EM data are considered acceptable when their occurrence is less than 10 spheric events exceeding the stated noise specification for a given frequency per 100 samples continuously over a distance of 2,000 meters.

5. DATA PROCESSING

Appendix C depicts the data processing flow for the electromagnetic and magnetic datasets.

Flight Path Recovery

The raw range data from at least four satellites are simultaneously recorded by both the base and mobile GPS units. The geographic positions of both units, relative to the model ellipsoid, are calculated from this information. Differential corrections, which are obtained from the base station, are applied to the mobile unit data to provide a post-flight track of the aircraft, accurate to within 1 metre. Speed checks of the flight path are also carried out to determine if there are any spikes or gaps in the data.

The corrected WGS84 latitude/longitude coordinates are transformed to the UTM coordinate system used on the final maps. Images or plots are then created to provide a visual check of the flight path.

Electromagnetic Data

EM data are processed at the recorded sample rate of 10 samples/second. Spheric rejection median and Hanning filters are then applied to reduce noise to acceptable levels.

The EM data are examined to allow the interpreter to select the most appropriate EM anomaly picking controls for a given survey area. The EM picking parameters depend on several factors but are primarily based on the dynamic range of the resistivities within the survey area, and the types and expected geophysical responses of the targets being sought.

Anomalous electromagnetic responses are selected and analysed by computer to provide preliminary electromagnetic anomaly picks. The automatic selection algorithm is intentionally oversensitive to assure that no meaningful responses are missed. Using the preliminary picks in conjunction with the profile data, the interpreter then classifies the anomalies according to their source and eliminates those that are not substantiated by the data. The final interpreted EM anomalies include bedrock, surficial and cultural conductors and are defined based on typical HEM anomaly shapes, which are defined in Appendix B, figure B-1. The types of conductors interpreted from the EM data are given below in table 5-1.

the conductor and the conductivity of the host rock. Because it is a difference, not a ratio, the amplitude of the difference channel over a discrete conductor will depend on the strength of the anomaly, but it will remain near zero for the flat-lying targets.

Anomalies that occur near the ends of the survey lines (i.e., outside the survey area) should be viewed with caution. Some of the weaker anomalies could be due to aerodynamic noise, i.e., bird bending, which is created by abnormal stresses to which the bird is subjected during the climb and turn of the aircraft between lines. Such aerodynamic noise is usually manifested by an anomaly on the coaxial in-phase channel only, although severe stresses can affect the coplanar in-phase channels as well.

The EM anomalies resulting from this survey appear to fall within one of two general categories. The first type consists of discrete, well-defined anomalies that yield marked inflections on the difference channels. These anomalies are usually attributed to conductive sulphides or graphite and are generally given a "B" (bedrock), "D" (vertical or dipping thin dyke) or "T" (vertical or dipping thick dyke) interpretive symbol, all denoting a bedrock source. EM anomalies that do not display the classic anomaly shape of the "thin dyke" model, but are considered to reflect sources at depth are generally given a "B" interpretation. The "T" anomaly is a very specific anomaly type, and is generally not used unless the specific criteria defined in figure B-1 of appendix B are met. No "T" anomalies were identified within this survey area.

The second class of anomalies comprises moderately broad responses that exhibit the characteristics of a half-space and do not yield well-defined inflections on the difference channels. Anomalies in this category are usually given an "S" or "H" interpretive symbol. The lack of a difference channel response usually implies a broad or flat-lying conductive source such as overburden. Some of these anomalies could reflect conductive rock units, zones of deep weathering, or the weathered tops of kimberlite pipes, all of which can yield "non-discrete" signatures.

The effects of conductive overburden are evident over portions of the survey area. Although the difference channels (DIFI and DIFQ) are extremely valuable in detecting bedrock conductors that are partially masked by conductive overburden, sharp undulations in the bedrock/overburden interface can yield anomalies in the difference channels which may be interpreted as possible bedrock conductors. Such anomalies usually fall into the "S?" or "B?" classification but may also be given an "E" interpretive symbol, denoting a resistivity contrast at the edge of a conductive unit.

The "?" symbol does not question the validity of an anomaly, but instead indicates some degree of uncertainty as to which is the most appropriate EM source model. This ambiguity results from the combination of effects from two or more conductive sources, such as overburden and bedrock, gradational changes, or moderately shallow dips. The presence of a conductive upper layer has a tendency to mask or alter the characteristics of bedrock conductors, making interpretation difficult. This problem is further exacerbated in the presence of magnetite.

In areas where EM responses are evident primarily on the quadrature components, zones of poor conductivity are indicated. Where these responses are coincident with

Table 5-1 EM Anomaly Interpretation

Interpretation Symbol	Conductor Model
D	Narrow bedrock conductor ("vertical or dipping thin dyke")
B	Bedrock conductor
S	Conductive cover ("horizontal thin sheet")
H	Broad conductive rock unit, deep conductive weathering, thick conductive cover ("half space")
E	Edge of broad conductor ("edge of a half space")
"?"	Indicates some degree of uncertainty as to which is the most appropriate EM source model, but does not question the validity of the EM anomaly

The anomalies shown on the electromagnetic anomaly map are based on a near-vertical, half plane model. This model best reflects "discrete" bedrock conductors. Wide bedrock conductors or flat-lying conductive units, whether from surficial or bedrock sources, may give rise to very broad anomalous responses on the EM profiles. These may not appear on the electromagnetic anomaly map if they have a regional character rather than a locally anomalous character.

These broad conductors, which more closely approximate a half-space model, will be maximum coupled to the horizontal (coplanar) coil-pair and should be more evident on the resistivity parameter. Resistivity maps, therefore, may be more valuable than the electromagnetic anomaly maps, in areas where broad or flat-lying conductors are considered to be of importance.

Excellent resolution and discrimination of conductors was accomplished by using a fast sampling rate of 0.1 sec and by employing a "common" frequency (5500/7200 Hz) on two orthogonal coil-pairs (coaxial and coplanar). The resulting difference channel parameters often permit differentiation of bedrock and surficial conductors, even though they may exhibit similar conductance values. For any Fugro multi-component helicopter frequency domain EM system (HFEM), the difference channel is a calculated product to assist interpretation of discrete conductor targets. There is one each for the in-phase and quadrature components of the EM channels, called DIFI and DIFQ.

The difference channel is a parameter used to quantify the difference between the coaxial and coplanar response, to help distinguish which conductivity changes are caused by flat-lying conductors (like swamps) or changes in the layered earth (with a 1:4 ratio between CX and CP), and which anomalies are caused by discrete conductive bodies (ideally with a 1:1 CX to CP ratio). The difference between the CP and CX for both in-phase and quadrature EM data is calculated everywhere, weighted to adjust the response for the geometric difference as well as differences in coil separation. For a flat-lying or halfspace (thick, flat-lying) conductor, the difference channel (DIFI or DIFQ) will be near zero, as it will over background areas (a layered earth). For a discrete conductor like a vertical thin dike, the difference channel will have a positive value. In practice the value will be somewhat variable, dependent on the shape and thickness of magnetic anomalies, it is possible that the in-phase component amplitudes have been suppressed by the effects of magnetite. Poorly-conductive magnetic features can give rise to resistivity anomalies that are only slightly below or slightly above background. If it is expected that poorly-conductive economic mineralization could be associated with magnetite-rich units, most of these weakly anomalous features will be of interest. In areas where magnetite causes the in-phase components to become negative, the apparent conductance and depth of EM anomalies will be unreliable. Magnetite effects usually give rise to overstated (higher) resistivity values and understated (shallow) depth calculations.

As potential targets within the area may be associated with massive to weakly disseminated sulphides, which may or may not be hosted by magnetite-rich rocks, it is impractical to assess the relative merits of EM anomalies on the basis of conductance. It is recommended that an attempt be made to compile a suite of geophysical "signatures" over any known areas of interest. Anomaly characteristics are clearly defined in the profile data of the EM channels.

Apparent Resistivity

The apparent resistivities in ohm-m are generated from the in-phase and quadrature EM components for all of the coplanar frequencies, using a pseudo-layer half-space model. The inputs to the resistivity algorithm are the in-phase and quadrature amplitudes of the secondary field. The algorithm calculates the apparent resistivity in ohm-m, and the apparent height of the bird above the conductive source. Any difference between the apparent height and the true height, as measured by the radar altimeter, is called the pseudo-layer and reflects the difference between the real geology and a homogeneous halfspace. This difference is often attributed to the presence of a highly resistive upper layer. Any errors in the altimeter reading, caused by heavy tree cover, are included in the pseudo-layer and do not affect the resistivity calculation. The apparent depth estimates, however, will reflect the altimeter errors. Apparent resistivities calculated in this manner may differ from those calculated using other models.

In areas where the effects of magnetic permeability or dielectric permittivity have suppressed the in-phase responses, the calculated resistivities will be erroneously high. Various algorithms and inversion techniques can be used to partially correct for the effects of permeability and permittivity. No corrections for permeability and permittivity were made to the data for this survey.

The apparent resistivity parameters portray all of the information for a given frequency over the entire survey area. This full coverage contrasts with the electromagnetic anomalies, which provide information only over interpreted conductors. The large dynamic range afforded by the multiple frequencies makes the apparent resistivity parameter an excellent mapping tool.

The preliminary apparent resistivity images are carefully inspected to identify any lines or line segments that might require base level adjustments. Subtle changes between in-flight calibrations of the system can result in line-to-line differences that are more recognizable in resistive (low signal amplitude) areas. If required, manual level adjustments are carried out to eliminate or minimize resistivity differences that can be attributed, in part, to changes in operating temperatures. These levelling adjustments are usually very subtle, and do not result in the degradation of discrete anomalies.

After the manual levelling process is complete, revised resistivity grids are created. The resulting grids can be subjected to a microlevelling technique in order to smooth the data for contouring. The coplanar resistivity parameter has a broad 'footprint' that requires very little filtering.

Apparent resistivity maps, which display the conductive properties of the survey area, were produced from the 900 Hz, 7200 Hz and 56 000 Hz coplanar data. Maximum resistivity values are calculated for each frequency. These cutoffs eliminate the erratic higher resistivities that would result from unstable ratios of very small EM amplitudes.

Residual Magnetic Field

A Fugro CF-1 cesium vapour magnetometer was operated at the survey base to record diurnal variations of the earth's magnetic field. The clock of the base station was synchronized with that of the airborne system to permit subsequent removal of diurnal drift.

A fourth difference editing routine was applied to the magnetic data to remove any spikes.

The aeromagnetic data were corrected for measured system lag, and then adjusted for regional variations (or IGRF gradient, 2010, updated to the date of data acquisition and adjusted for altimeter variations). The data were then corrected for diurnal variations by subtraction of the digitally recorded base station magnetic data. The results were then levelled using tie and traverse line intercepts. Manual adjustments were applied to any lines that required levelling, as indicated by shadowed images of the gridded magnetic data. The manually levelled data were then subjected to a microlevelling filter. The gridded data show the magnetic properties of the rock units underlying the survey area.

If a specific magnetic intensity can be assigned to the rock type that is believed to host the target mineralization, it may be possible to select areas of higher priority on the basis of the total field magnetic data. This is based on the assumption that the magnetite content of the host rocks will give rise to a limited range of contour values that will permit differentiation of various lithological units. Structural complexities are evident on the images as variations in magnetic intensity, irregular patterns, and as offsets or changes in strike direction.

The magnetic results, in conjunction with the other geophysical parameters, have provided valuable information that can be used to effectively map the geology and structure in the survey area.

Calculated Vertical Magnetic Gradient (First Vertical Derivative)

The diurnally-corrected, IGRF-corrected magnetic data were subjected to a processing algorithm that enhances the response of magnetic bodies in the upper 500 metres and attenuates the response of deeper bodies. The resulting vertical gradient grid provides better definition and resolution of near-surface magnetic units. It also identifies weak magnetic features that may not be quite as evident in the total field data. Regional magnetic variations and changes in lithology, however, may be better defined on the total magnetic field parameter.

Digital Elevation

The radar altimeter values (ALTR – EM bird to ground clearance) are subtracted from the differentially corrected and de-spiked GPS-Z values to produce profiles of the height above the ellipsoid along the survey lines. These values are gridded to produce contour maps showing approximate elevations within the survey area. The calculated digital terrain data are then tie-line levelled and adjusted to mean sea level. Any remaining subtle line-to-line discrepancies are manually removed. After the manual corrections are applied, the digital terrain data are filtered with a microlevelling algorithm.

The accuracy of the elevation calculation is directly dependent on the accuracy of the two input parameters, ALTR and GPS-Z. The ALTR value may be erroneous in areas of heavy tree cover, where the altimeter reflects the distance to the tree canopy rather than the ground. The GPS-Z value is primarily dependent on the number of available satellites. Although post-processing of GPS data will yield X and Y accuracies in the order of 1-2 metres, the accuracy of the Z value is usually much less, sometimes in the ±10 metre range. Further inaccuracies may be introduced during the interpolation and gridding process.

Because of the inherent inaccuracies of this method, no guarantee is made or implied that the information displayed is a true representation of the height above sea level. Although this product may be of some use as a general reference, <u>THIS PRODUCT MUST NOT BE USED FOR NAVIGATION PURPOSES.</u>

Contour, Colour and Shadow Map Displays

The magnetic and resistivity data are interpolated onto a regular grid using a modified Akima spline technique. The resulting grid is suitable for image processing and generation of contour maps. The grid cell size is 20% of the line interval.

Colour maps are produced by interpolating the grid down to the pixel size. The parameter is then incremented with respect to specific amplitude ranges to provide colour "contour" maps.

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Client: Canadian International Minerals Inc.
Suite 1128 - 789 W. Pender Street
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Project: Treasure Mtn.

Report Date: November 04, 2011

QUALITY CONTROL REPORT VAN11004983.1

	Method	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	3A
	Analyte	P	La	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Sn	Y	Nb	Be	Sc	S	Au
	Unit	%	ppm	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppb
	MDL	0.002	2	2	0.01	1	0.01	0.01	0.01	0.01	4	2	2	2	2	1	1	0.1	0.5
Reference Materials																			
STD CDN-PGMS-19	Standard																		240.6
STD OREAS24P	Standard	0.129	17	201	3.97	266	1.05	7.51	2.45	0.70	<4	127	5	21	18	1	19	<0.1	
STD OREAS45C	Standard	0.049	25	982	0.24	273	1.14	6.92	0.11	0.35	<4	167	5	12	22	<1	59	<0.1	
STD OREAS24P Expected		0.136	17.4	196	4.13	285	1.1	7.66	2.34	0.7	0.5	141	1.6	21.3	21		20		
STD OREAS45C Expected		0.051	26.2	962	0.25	270	1.1313	7.59	0.097	0.36	1.06	169.7	2.9	12.9	23.05		59.03	0.021	
STD CDN-PGMS-19																			230
BLK	Blank	<0.002	<2	<2	<0.01	<1	<0.01	<0.01	<0.01	<0.01	<4	<2	<2	<2	<2	<1	<1	<0.1	
BLK	Blank																		1.5
BLK	Blank																		<0.5
Prep Wash																			
G1	Prep Blank	0.076	20	4	0.55	1211	0.23	6.68	2.63	3.27	<4	12	<2	12	23	3	4	<0.1	8.1

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QUALITY CONTROL REPORT VAN11004983.1

	Method	WGHT	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E
	Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca
	Unit	kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	MDL	0.01	2	2	5	2	0.5	2	2	5	0.01	5	20	4	2	2	0.4	5	5	2	0.01
Reference Materials																					
STD CDN-PGMS-19	Standard																				
STD OREAS24P	Standard		<2	47	7	114	<0.5	146	44	1087	7.34	<5	<20	<4	<2	379	1.4	<5	6	164	5.45
STD OREAS45C	Standard		<2	621	26	82	<0.5	328	101	1167	18.53	13	<20	<4	9	39	1.4	<5	10	268	0.53
STD OREAS24P Expected			1.5	52	2.9	119	0.06	141	44	1100	7.53	1.2	0.75		2.85	403	0.15	0.09		158	5.83
STD OREAS45C Expected			2.26	620	24	83	0.28	333	104	1160	18.33	10.1	2.4	0.045	10.2	36.4	0.15	0.79	0.21	270	0.482
STD CDN-PGMS-19																					
BLK	Blank		<2	<2	<5	<2	<0.5	<2	<2	<5	<0.01	<5	<20	<4	<2	<2	<0.4	<5	<5	<2	<0.01
BLK	Blank																				
BLK	Blank																				
Prep Wash																					
G1	Prep Blank	<0.01	<2	3	23	50	<0.5	3	3	729	2.12	<5	<20	<4	6	723	<0.4	<5	<5	47	2.20

6. PRODUCTS

This section lists the final maps and products that have been provided under the terms of the survey agreement. Other products can be prepared from the existing dataset, if requested. These include magnetic enhancements or derivatives, percent magnetite, resistivities corrected for magnetic permeability and/or dielectric permittivity, digital terrain, resistivity-depth sections, inversions, and overburden thickness. Most parameters can be displayed as contours, profiles, or in colour.

Base Maps

A base map of the survey area was produced by scanning published topographic maps to a bitmap (.bmp) format. This process provides a relatively accurate, distortion-free base that facilitates correlation of the navigation data to the map coordinate system. The topographic files were combined with geophysical data for plotting some of the final maps. All maps were created using the following parameters:

Projection Description:

Datum:	NAD83
Ellipsoid:	GRS80
Projection:	UTM (Zone: 10N)
Central Meridian:	123°W
False Northing:	0
False Easting:	500000
Scale Factor:	0.9996
WGS84 to Local Conversion:	Molodensky
Datum Shifts:	DX: 0 DY: 0 DZ: 0

Maps depicting the survey results have been provided at a scale of 1:20 000 as listed in Table 6-1. Each Parameter is plotted on one map sheet. The final digital archives are provided on DVD. Both line data and grid archives are provided in Geosoft format.

Table 6-1 Survey Products

Final Map Product	No. of Colour Map Sets
EM Anomalies with interpretation	2
Residual Magnetic Intensity	2
Calculated Vertical Magnetic Gradient	2
Apparent Resistivity 900 Hz	2
Apparent Resistivity 7200 Hz	2
Apparent Resistivity 56 000 Hz	2

Additional Products

Digital Archive (see Archive Description)	1 DVD
Survey Report	PDF format on archive DVD, 2 paper copies
Flight Path Video	all flights in .BIN/.BDX format on DVD with viewer
Final colour maps	all products, in .PDF format

7. SURVEY RESULTS

Table 7-1 summarizes the discrete EM anomaly responses interpreted from the survey data with respect to conductance grade and interpretation for the survey area. The anomalies are listed in .PDF format and archived in XYZ format on the final archive DVD.

An interpretation map at a scale of 1:20 000, which includes the EM anomalies, accompanies this report. Prominent magnetic and conductive zones have been outlined in red or blue, respectively. Linear features that have been interpreted from either the magnetic or resistivity data, and which may reflect possible structural breaks within the survey area, are shown with a dashed green line.

Several large conductive zones are evident within the survey block. R1 is the most extensive, and seems to reflect multiple EM anomalies, which are indicative of closely spaced bedrock sources. Some display well defined anomaly shapes, which suggest thin, strong dyke-like sources. R1 shows good correlation with a zone of complex magnetic signatures, which is clearly evident on the calculated first vertical derivative map as a change in magnetic texture. The highest magnetic intensities are evident within M2, which is associated with the eastern portion of R1. Many possible structural features, inferred from the magnetic data, intersect R1. Some of the lowest conductivities within R1 are evident along the northwest/southeast contact between magnetic zone, M2 and a strong magnetic low, ML2.

Conductive zone R2 also reflects possible bedrock sources, although it is much less extensive than R1. EM anomaly responses generally indicate broader sources at depth. R1 displays good correlation with ML1, a circular magnetic low, situated to the southeast of magnetic zone, M1. M1 strikes northeast/southwest, and appears to cut across the general magnetic strike within the survey block. A concentration of EM anomalies, indicative of bedrock sources, is evident along the contact of M1 and ML1.

Conductive zone R3 is situated near the eastern edge of the survey block. It reflects a mix of both possible broad bedrock sources and surficial sources. EM anomalies indicative of bedrock sources generally reflect broad features. There is little correlation for R3 with the magnetic data. The magnetic data exhibit only several weakly magnetic trends associated with R3.

TABLE 7-1 EM ANOMALY STATISTICS

Treasure Mountain Project
Hope, British Columbia
Job # 11073

CONDUCTOR GRADE	CONDUCTANCE RANGE SIEMENS (MHOS)	NUMBER OF RESPONSES
7	>100	0
6	50 - 100	0
5	20 - 50	0
4	10 - 20	1
3	5 - 10	7
2	1 - 5	596
1	<1	153
*	INDETERMINATE	231
TOTAL		988

CONDUCTOR MODEL	MOST LIKELY SOURCE	NUMBER OF RESPONSES
D	DISCRETE BEDROCK CONDUCTOR (THIN DYKE MODEL)	108
B	BEDROCK CONDUCTOR	390
S	CONDUCTIVE COVER	477
H	ROCK UNIT OR THICK COVER	12
E	EDGE OF WIDE CONDUCTOR	1
TOTAL		988

8. CONCLUSIONS AND RECOMMENDATIONS

This report provides a very brief description of the survey results and describes the equipment, data processing procedures and logistics of the survey.

The survey has been successful in mapping the magnetic and conductive properties of the survey area. The survey was also successful in locating conductors that may warrant additional work. The various maps included with this report display the magnetic and conductive properties of the survey area. It is recommended that a complete assessment and detailed evaluation of the survey results be carried out, in conjunction with all available geophysical, geological and geochemical information.

The interpreted bedrock conductors and anomalous targets defined by the survey should be subjected to further investigation, using appropriate surface exploration techniques. Anomalies that are currently considered to be of moderately low priority may require upgrading if follow-up results are favourable.

It is also recommended that image processing of existing geophysical data be considered, in order to extract the maximum amount of information from the survey results. Current software and imaging techniques often provide valuable information on structure and lithology, which may not be clearly evident on the contour and colour maps. These techniques can yield images that define subtle, but significant, structural details.

Respectfully submitted,

FUGRO AIRBORNE SURVEYS CORP.

APPENDIX A

LIST OF PERSONNEL

The following personnel were involved in the acquisition, processing, interpretation and presentation of data, relating to a DIGHEM airborne geophysical survey carried out for Canadian Strategic Metals Inc. over the Treasure Mountain Project, Hope area, British Columbia.

Graham Konieczny	Manager, Data Processing and Interpretation
Terry Lacey	Geophysical Operator
Michael Wu	Geophysical Data Processor - Field
Richardo White	Geophysical Data Processor
Matt Ritchie	Pilot (Questral Helicopters Ltd.)
Ruth Pritchard	Interpretation
Lyn Vanderstarren	Drafting Supervisor

The survey consisted of approximately 372.4 line-km flown from October 2nd to October 14th, 2011.

All personnel were employees of Fugro Airborne Surveys, except where indicated.

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Suite 1128 - 789 W. Pender Street
Vancouver BC V6C 1H2 Canada

Project: Treasure Mtn.
Report Date: November 10, 2011

CERTIFICATE OF ANALYSIS VAN11005585.2

	Method	WGHT	3A	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E
	Analyte	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V
	Unit	kg	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	MDL	0.01	0.5	2	2	5	2	0.5	2	2	5	0.01	5	20	4	2	2	0.4	5	5	2
184327	Rock	2.05	<0.5	<2	33	9	78	<0.5	23	20	884	4.46	<5	<20	<4	<2	693	1.0	<5	<5	161
184329	Rock	3.03	15.0	2	1621	86	>10000	19.2	6	87	1563	31.52	<5	<20	<4	<2	5	487.1	<5	<5	50
184330	Rock	2.21	29.4	<2	876	143	>10000	17.3	4	85	1687	20.01	<5	<20	<4	<2	12	429.8	<5	<5	60
184331	Rock	2.73	122.6	2	1937	240	>10000	50.9	5	161	1980	32.34	<5	<20	<4	<2	12	820.9	<5	<5	48

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Submitted By:	Tor Bruland
Receiving Lab:	Canada-Vancouver
Received:	October 17, 2011
Report Date:	November 10, 2011
Page:	1 of 2

CERTIFICATE OF ANALYSIS VAN11005585.2

CLIENT JOB INFORMATION

Project:	Treasure Mtn.
Shipment ID:	
P.O. Number	
Number of Samples:	4

SAMPLE DISPOSAL

DISP-PLP	Dispose of Pulp After 90 days
DISP-RJT	Dispose of Reject After 90 days

Acme does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Method Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
R200-250	4	Crush, split and pulverize 250 g rock to 200 mesh			VAN
3A01	4	Ignite samples, acid digest, Au by ICP-MS	15	Completed	VAN
1E	4	4 Acid digestion ICP-ES analysis	0.25	Completed	VAN
7AR1	3	1:1:1 Aqua Regia digestion ICP-ES analysis	1	Completed	VAN

ADDITIONAL COMMENTS

Version 2; 7AR analysis included

Invoice To: Canadian International Minerals Inc.
Suite 1128 - 789 W. Pender Street
Vancouver BC V6C 1H2
Canada

CC:

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.
All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.
"*" asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.

1. INTRODUCTION

A DIGHEM electromagnetic/resistivity/magnetic survey was flown for Canadian Strategic Metals Inc. The survey was flown from October 2nd to October 14th, 2011 over the Treasure Mountain Project, located in the Hope area, British Columbia. The survey area is located on NTS map sheet 92H/6 (Figure 2-1).

Survey coverage consisted of approximately 372.4 line-km including 36.9 line-km of tie lines. Flight lines were flown in an azimuthal direction of 0°/180° with a line separation of 50 metres. Tie lines were flown perpendicular to the traverse lines (90°/270°) with a line separation of 500 metres.

The survey employed the DIGHEM electromagnetic system. Ancillary equipment consisted of a high sensitivity cesium magnetometer, radar and laser altimeters, video camera, digital data recorder, and an electronic navigation system. The instrumentation was installed in an AS-350-B2 turbine helicopter (Registration C-GJIX) that was provided by Questral Helicopters Ltd. The helicopter flew with a nominal EM sensor height of approximately 35 metres.

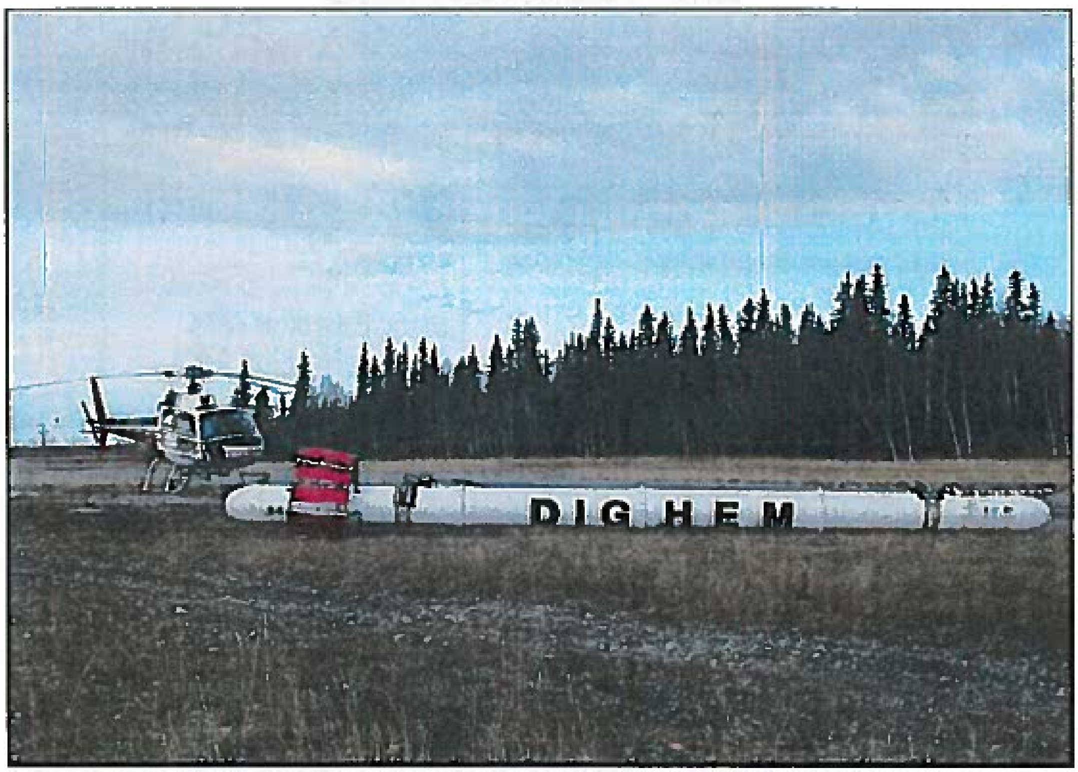

Figure 1-1: Fugro Airborne Surveys DIGHEM EM Bird

2. SURVEY OPERATIONS

The survey area is located on NTS map sheet 92H/6 (Figure 2-1).

Tables 2-1 lists the corner coordinates of the survey area in NAD83, UTM Zone 10N, central meridian 123°W.

Table 2-1 The Area Corners

Block	Corners	X-UTM (E)	Y-UTM (N)
11073-1	1	634000	5481000
Treasure	2	639000	5481000
Mountain	3	642000	5478000
Claim	4	637000	5478000

The survey specifications are given below in table 2-2.

Table 2-2 Survey Specifications

Parameter	Specifications
Sample interval (EM and magnetics)	10 Hz, 3.3 m @ 120 km/h
Aircraft mean terrain clearance	60 m
EM sensor mean terrain clearance	35 m
Mag sensor mean terrain clearance	35 m
Navigation (guidance)	±5 m, Real-time GPS
Post-survey flight path	±1 m, Differential GPS

The base of operations for the survey was established at the Hope, British Columbia airport for the duration of the survey flying.

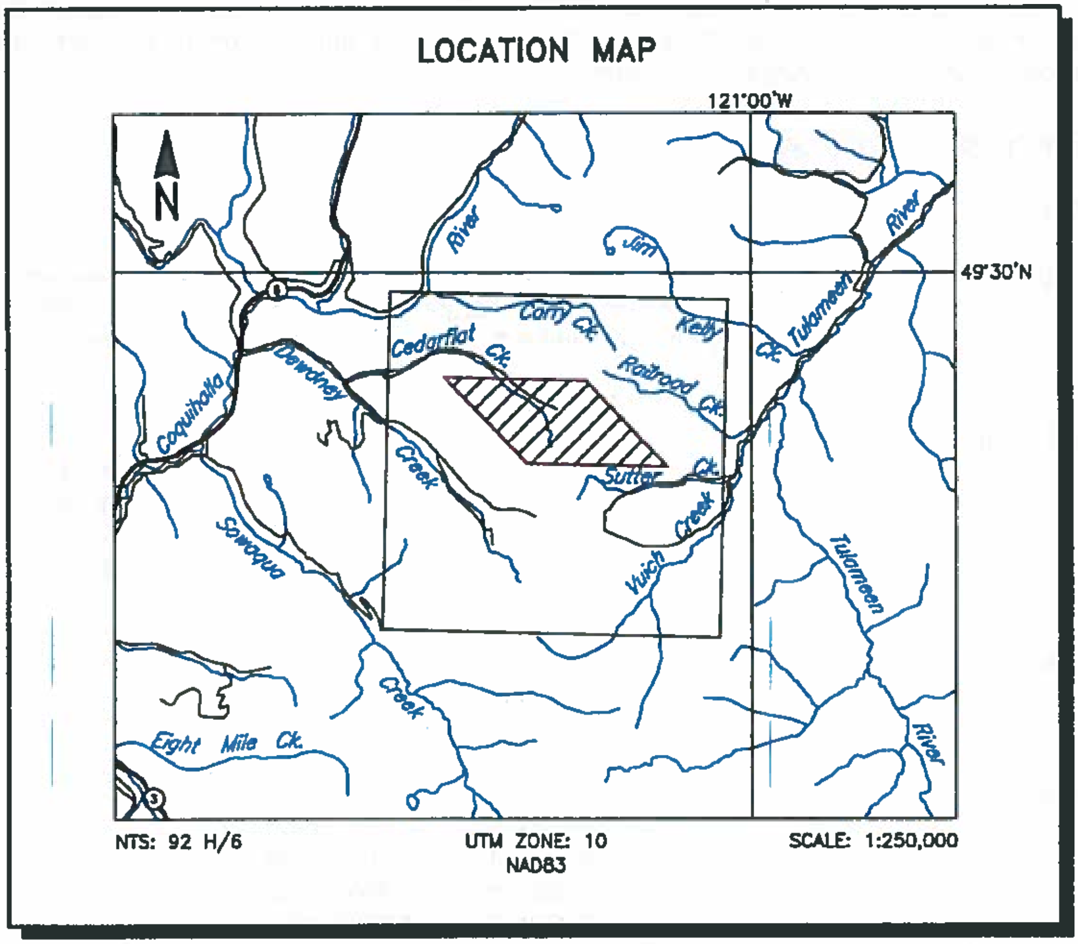

Figure 2-1
Location Map and Sheet Layout
Treasure Mountain Project
Hope Area, British Columbia
Job #11073

3. SURVEY EQUIPMENT

This section provides a brief description of the geophysical instruments used to acquire the survey data and the calibration procedures employed. The geophysical equipment was installed in an AS-350-B2 turbine helicopter. This aircraft provided a safe and efficient platform for surveys of this type.

Electromagnetic System

Model: DIGHEM

Type: Towed bird, symmetric dipole configuration operated at a nominal survey altitude of 35 metres. Coil separation is 8 metres for 900 Hz, 1000 Hz, 5500 Hz and 7200 Hz, and 6.3 metres for the 56,000 Hz coil-pair.

Coil orientations, frequencies and dipole moments

Atm^2	orientation	nominal	actual
211	coaxial /	1000 Hz	1118 Hz
211	coplanar /	900 Hz	884 Hz
67	coaxial /	5500 Hz	5905 Hz
56	coplanar /	7200 Hz	7478 Hz
15	coplanar /	56 000 Hz	56 250 Hz

Channels recorded:
5 in-phase channels
5 quadrature channels
2 monitor channels

Sensitivity:
0.12 ppm at 1000 Hz Cx
0.12 ppm at 900 Hz Cp
0.24 ppm at 5500 Hz Cx
0.24 ppm at 7200 Hz Cp
0.44 ppm at 56 000 Hz Cp

Sample rate: 10 per second, equivalent to 1 sample every 3.3 m, at a survey speed of 120 km/h.

The electromagnetic system utilizes a multi-coil coaxial/coplanar technique to energize conductors in different directions. The coaxial coils are vertical with their axes in the flight direction. The coplanar coils are horizontal. The secondary fields are sensed simultaneously by means of receiver coils that are maximum coupled to their respective transmitter coils. The system yields an in-phase and a quadrature channel from each transmitter-receiver coil-pair.

In-Flight EM System Calibration

Calibration of the system during the survey uses the Fugro AutoCal automatic, internal calibration process. At the beginning and end of each flight, and at intervals during the flight, the system is flown up to high altitude to remove it from any "ground effect" (response from the earth). Any remaining signal from the receiver coils (base level) is measured as the zero level, and is removed from the data collected until the time of the next calibration. Following the zero level setting, internal calibration coils, for which the response phase and amplitude have been determined at the factory, are automatically triggered – one for each frequency. The on-time of the coils is sufficient to determine an accurate response through any ambient noise. The receiver response to each calibration coil "event" is compared to the expected response (from the factory calibration) for both phase angle and amplitude, and any phase and gain corrections are automatically applied to bring the data to the correct value.

In addition, the outputs of the transmitter coils are continuously monitored during the survey, and the gains are adjusted to correct for any change in transmitter output.

Because the internal calibration coils are calibrated at the factory (on a resistive half-space) ground calibrations using external calibration coils on-site are not necessary for system calibration. A check calibration may be carried out on-site to ensure all systems are working correctly. All system calibrations will be carried out in the air, at sufficient altitude that there will be no measurable response from the ground.

The internal calibration coils are rigidly positioned and mounted in the system relative to the transmitter and receiver coils. In addition, when the internal calibration coils are calibrated at the factory, a rigid jig is employed to ensure accurate response from the external coils.

Using real time Fast Fourier Transforms and the calibration procedures outlined above, the data are processed in real time, from measured total field at a high sampling rate, to in-phase and quadrature values at 10 samples per second.

Airborne Magnetometer

Model:	Fugro D1344 processor with Scintrex CS3 sensor
Type:	Optically pumped cesium vapour
Sensitivity:	0.01 nT
Sample rate:	10 per second

The magnetometer sensor is housed in the EM bird, 25 m below the helicopter.

Magnetic Base Station

Model:	CF1 base station with timing provided by integrated GPS
Sensor type:	Scintrex CS2

Counter specifications:	Accuracy:	±0.25 nT
	Resolution:	0.01 nT
	Sample rate	1 Hz
GPS specifications:	Model:	Marconi Allstar
	Type:	Code and carrier tracking of L1 band, 12-channel, C/A code at 1575.42 MHz
	Sensitivity:	-90 dBm, 1.0 second update
	Accuracy:	Manufacturer's stated accuracy for differential corrected GPS is 2 metres

Environmental
Monitor specifications: Temperature:

- Accuracy: ±1.5°C max
- Resolution: 0.0305°C
- Sample rate: 1 Hz
- Range: -40°C to +75°C

Barometric pressure:

- Model: Motorola MPXA4115A
- Accuracy: ±3.0° kPa max (-20°C to 105°C temp. ranges)
- Resolution: 0.013 kPa
- Sample rate: 1 Hz
- Range: 55 kPa to 108 kPa

Backup

Model:	GEM Systems GSM-19
Type:	Digital recording proton precession
Sensitivity:	0.10 nT
Sample rate:	3 second intervals

A digital recorder is operated in conjunction with the base station magnetometer to record the diurnal variations of the earth's magnetic field. The clock of the base station is synchronized with that of the airborne system, using GPS time, to permit subsequent removal of diurnal drift. The CF1 was the primary magnetic base station.

Table 3-1 Magnetic Base Station Locations

Status	Location Name	WGS84 Latitude	WGS84 Longitude	Date Set Up	Date Torn Down
Primary	Hope Airport	49 22 09.98757	121 29 15.88983	3-Oct-11	5-Oct-11
Secondary	Hope Airport	49 22 09.98757	121 29 15.88983	3-Oct-11	5-Oct-11
Primary	On the way to Airport	49 21 57.99474	121 29 23.58148	5-Oct-11	6-Oct-11
Secondary	On the way to Airport	49 21 57.99474	121 29 23.58148	5-Oct-11	6-Oct-11
Primary	On the way to Airport	49 21 57.84325	121 29 21.67185	6-Oct-11	15-Oct-11
Secondary	On the way to Airport	49 21 57.84325	121 29 21.67185	6-Oct-11	15-Oct-11

Navigation (Global Positioning System)

<u>Airborne Receiver for Real-time Navigation & Guidance</u>

Model:	Novatel OEM4/V
Type:	Code and carrier tracking of L1-C/A code at 1575.42 MHz and L2-P code at 1227.0 MHz. Dual frequency, 24-channel
Sample rate:	10 Hz update
Accuracy:	Better than 1 metre in differential mode
Antenna:	Aero Antenna AT2775, mounted on the tail of the aircraft

<u>Airborne Receiver for Flight Path Recovery</u>

Model:	Novatel OEM4/V
Type:	Code and carrier tracking of L1-C/A code at 1575.42 MHz and L2-P code at 1227.0 MHz. Dual frequency, 24-channel
Sample rate:	10 Hz update
Accuracy:	Better than 1 metre in differential mode
Antenna:	Aero Antenna AT1675, mounted on the nose of the bird

<u>Primary Base Station for Post-Survey Differential Correction</u>

Model:	Novatel OEM4/V
Type:	Code and carrier tracking of L1-C/A code at 1575.42 MHz and L2-P code at 1227.0 MHz, 24-channel
Sample rate:	0.5 second update
Accuracy:	Manufacturer's stated accuracy for differential corrected GPS is better than 1 metre

<u>Secondary GPS Base Station</u>

Model: Marconi Allstar OEM, CMT-1200, part of CF1 base station
Type: Code and carrier tracking of L1 band, 12-channel, C/A code at 1575.42 MHz
Sensitivity: -90 dBm, 1.0 second update
Accuracy: Manufacturer's stated accuracy for differential corrected GPS is 2 metres

The Novatel OEM4 is a line of sight, satellite navigation system that utilizes time-coded signals from at least four of forty-eight available satellites. Both Russian GLONASS and American NAVSTAR satellite constellations are used to calculate the position and to provide real time guidance to the helicopter. A Novatel OEM4 GPS unit was also used as the primary base station. A Marconi Allstar GPS unit, part of the CF-1, was used as the secondary base station. The mobile and base station raw XYZ data were recorded, thereby permitting post-survey differential corrections for theoretical accuracies of better than 1 metre.

The GPS records data relative to the WGS84 ellipsoid, which is the basis of the revised North American Datum (NAD83). Conversion software is used to transform the WGS84 coordinates to the UTM system displayed on the maps.

Table 3-2 GPS Base Station Locations

Status	Location Name	WGS84 Latitude	WGS84 Longitude	Orthometric Height (m)	Date Set Up	Date Tom Down
Primary	Hope Airport	49 22 09.98757	121 29 15.88983	46.809	3-Oct-11	5-Oct-11
Secondary	Hope Airport				3-Oct-11	5-Oct-11
Primary	On the way of Airport	49 21 57.99474	121 29 23.58148	44.861	5-Oct-11	6-Oct-11
Secondary	On the way of Airport				5-Oct-11	6-Oct-11
Primary	On the way of Airport	49 21 57.72246	121 29 22.17708	46.475	6-Oct-11	15-Oct-11
Secondary	On the way of Airport	49 21 57.84325	121 29 21.67185	38.393	6-Oct-11	15-Oct-11

Radar Altimeter

Manufacturer:	Honeywell/Sperry
Model:	RT300/AT220
Type:	Short pulse modulation, 4.3 GHz
Sensitivity:	0.3 m
Sample rate:	2 per second

The radar altimeter measures the vertical distance between the helicopter and the ground. This information is used in the processing algorithm that determines conductor depth. The radar altimeter is located in the helicopter.

Laser Altimeter

Manufacturer:	Optech
Model:	ADMGPA100
Type:	Fixed pulse repetition rate of 2 kHz
Sensitivity:	±5 cm from 10°C to 30°C ±10 cm from -20°C to +50°C
Sample rate:	2 per second

The laser altimeter is housed in the EM bird, and measures the distance from the EM bird to ground, except in areas of dense tree cover.

Barometric Pressure and Temperature Sensors

Model:	DIGHEM D1300	
Type:	Motorola MPX4115AP analog pressure sensor AD592AN high-impedance remote temperature sensors	
Sensitivity:	Pressure:	150 mV/kPa
	Temperature:	100 mV/°C or 10 mV/°C (selectable)
Sample rate:	10 per second	

The D1300 circuit is used in conjunction with one barometric sensor and up to three temperature sensors. Two sensors (baro and temp) are installed in the EM console in the aircraft, to monitor pressure (1KPA) and internal operating temperatures (2TDC).

Digital Data Acquisition System

Manufacturer:	Fugro
Model:	HELIDAS
Recorder:	Compact Flash Card

The stored data are downloaded to the field workstation PC at the survey base, for verification, backup and preparation of in-field products.

Video Flight Path Recording System

Type:	Axis 2420 digital network camera
Recorder:	Axis 241S video server and tablet computer

Fiducial numbers are recorded continuously and are displayed on the margin of each image. This procedure ensures accurate correlation of data with respect to visible features on the ground.

4. QUALITY CONTROL AND IN-FIELD PROCESSING

Digital data for each flight were transferred to the field workstation, in order to verify data quality and completeness. A database was created and updated using Geosoft Oasis Montaj and proprietary Fugro Atlas software. This allowed the field personnel to calculate, display and verify both the positional (flight path) and geophysical data on a screen or printer. The initial database was examined as a preliminary assessment of the data acquired for each flight.

In-field processing of Fugro survey data consists of differential corrections to the airborne GPS data, verification of EM calibrations, drift correction of the raw airborne EM data, spike rejection and filtering of all geophysical and ancillary data, verification of the digital flight path recordings, calculation of preliminary resistivity data, diurnal correction, and preliminary levelling of magnetic data.

All data, including base station records, were checked on a daily basis to ensure compliance with the survey contract specifications. Reflights were required if any of the following specifications were not met.

Navigation

A specialized GPS system provided in-flight navigation control. The system determined the absolute position of the helicopter by monitoring the range information of twelve channels (satellites). Novatel's OEM4/V receiver was used for this application. The OEM4/V receiver is WAAS-enabled (Wide Area Augmentation System) providing better real-time positioning.

A Novatel OEM4 GPS base station was used that recorded pseudo-range, carrier phase, ephemeris, and timing information for up to 12 NAVSTAR GPS satellites at a one second interval. Recording was via flash disk.

Flight Path

The flight lines did not deviate from the intended flight path by more than 25% of the planned flight path over a distance of more than 1 kilometre. Flight specifications were based on GPS positional data recorded at the helicopter.

Clearance

Survey elevations did not deviate by more than +/- 20% over a distance of 2 kilometres from the contracted elevation.

Survey elevation is defined as the measurement of the helicopter radar altimeter to the tallest obstacle in the helicopter path. An obstacle is any structure or object which will impede the path of the helicopter to the ground and is not limited to and includes tree canopy, towers and power lines.

Survey Elevations may vary based on the pilot's judgment of safe flying conditions around man-made structures or in rugged terrain.

Flying Speed

Nominal aircraft indicated airspeed was between 55 to 80 knots, the nominal aircraft ground speed was approximately 3 to 5 metres per sample at 10 Hz sampling.

Airborne High Sensitivity Magnetometer

The non-normalized 4th difference will not exceed 1.6 nT over a continuous distance of 1 kilometre excluding areas where this specification is exceeded due to natural anomalies.

Magnetic Base Station

The ground magnetometers are generally placed within 50 kilometres of the centre of the survey area and in regions of low magnetic gradient. They were sited away from moving steel objects, vehicles or power transmission lines.

For acceptance of the magnetic data, non-linear variations in the magnetic diurnal should not exceed 10 nT per minute.

Electromagnetic Data

Reflights will result when peak to peak noise envelopes of the EM channels exceeds the specified tolerance continuously over a horizontal distance of 2,000 metres under normal survey conditions. The approximate tolerances by frequency and coil orientation are given below in table 4-1.

Table 4-1 The EM System Noise Specifications

Nominal Frequency (Hz)	Coil Orientation	Peak-to-Peak Noise Envelope (ppm)
1000	coaxial	5
900	coplanar	10
5500	coaxial	10
7200	coplanar	20
56,000	coplanar	40

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CERTIFICATE OF ANALYSIS VAN11005585.2

	Method	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	7AR
	Analyte	Ca	P	La	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Sn	Y	Nb	Be	Sc	S	Zn
	Unit	%	%	ppm	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%
	MDL	0.01	0.002	2	2	0.01	1	0.01	0.01	0.01	0.01	4	2	2	2	2	1	1	0.1	0.01
184327	Rock	3.74	0.092	9	20	1.90	580	0.40	8.57	3.21	1.12	<4	3	<2	9	<2	<1	15	<0.1	N.A.
184329	Rock	0.10	0.020	10	<2	0.73	9	0.06	1.93	0.02	0.22	<4	6	3	3	<2	<1	9	14.6	7.38
184330	Rock	0.18	0.028	4	2	0.82	19	0.12	2.50	0.04	0.48	<4	6	5	2	<2	<1	9	11.0	6.48
184331	Rock	0.25	0.013	7	<2	0.54	6	0.04	1.61	0.03	0.27	<4	5	4	4	<2	<1	8	14.8	11.89

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Project: Treasure Mtn.
Report Date: November 10, 2011

QUALITY CONTROL REPORT VAN11005585.2

	Method	WGHT	3A	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E
	Analyte	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V
	Unit	kg	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	MDL	0.01	0.5	2	2	5	2	0.5	2	2	5	0.01	5	20	4	2	2	0.4	5	5	2
Reference Materials																					
STD CDN-PGMS-19	Standard		256.1																		
STD OREAS153AR	Standard																				
STD OREAS131B-A	Standard																				
STD OREAS24P	Standard			<2	47	<5	113	<0.5	145	44	1114	7.36	<5	<20	<4	3	386	<0.4	<5	<5	155
STD OREAS45C	Standard			3	595	23	83	<0.5	334	108	1159	18.72	8	<20	<4	11	36	<0.4	<5	<5	257
STD CDN-PGMS-19			230																		
STD OREAS24P Expected				1.5	52	2.9	119	0.06	141	44	1100	7.53	1.2	0.75		2.85	403	0.15	0.09		158
STD OREAS45C Expected				2.26	620	24	83	0.28	333	104	1160	18.33	10.1	2.4	0.045	10.2	36.4	0.15	0.79	0.21	270
STD OREAS153AR																					
STD OREAS131B-A																					
BLK	Blank		<0.5																		
BLK	Blank		<0.5																		
BLK	Blank			<2	<2	<5	<2	<0.5	<2	<2	<5	<0.01	<5	<20	<4	<2	<2	<0.4	<5	<5	<2
BLK	Blank																				
Prep Wash																					
G1	Prep Blank	<0.01	<0.5	<2	3	19	51	<0.5	2	5	742	2.41	<5	<20	<4	10	763	1.2	<5	<5	49

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QUALITY CONTROL REPORT VAN11005585.2

	Method	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	7AR
	Analyte	Ca	P	La	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Sn	Y	Nb	Be	Sc	S	Zn
	Unit	%	%	ppm	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%
	MDL	0.01	0.002	2	2	0.01	1	0.01	0.01	0.01	0.01	4	2	2	2	2	1	1	0.1	0.01
Reference Materials																				
STD CDN-PGMS-19	Standard																			
STD OREAS153AR	Standard																			<0.01
STD OREAS131B-A	Standard																			3.05
STD OREAS24P	Standard	5.39	0.134	18	199	4.05	271	1.04	7.77	2.56	0.70	<4	121	<2	21	19	1	19	<0.1	
STD OREAS45C	Standard	0.50	0.052	25	972	0.24	270	1.13	7.27	0.10	0.35	<4	155	3	11	24	<1	58	<0.1	
STD CDN-PGMS-19																				
STD OREAS24P Expected		5.83	0.136	17.4	196	4.13	285	1.1	7.66	2.34	0.7	0.5	141	1.6	21.3	21		20		
STD OREAS45C Expected		0.482	0.051	26.2	962	0.25	270	1.1313	7.59	0.097	0.36	1.06	169.7	2.9	12.9	23.05		59.03	0.021	
STD OREAS153AR																				0.0051
STD OREAS131B-A																				3.03
BLK	Blank																			
BLK	Blank																			
BLK	Blank	<0.01	<0.002	<2	<2	<0.01	<1	<0.01	<0.01	<0.01	<0.01	<4	<2	<2	<2	<2	<1	<1	<0.1	
BLK	Blank																			<0.01
Prep Wash																				
G1	Prep Blank	2.31	0.078	28	4	0.58	1276	0.23	7.89	3.01	2.22	<4	11	<2	14	27	3	5	<0.1	N.A.

APPENDIX II

FUGRO 2011 AIRBORNE GEOPHYSICAL SURVEY REPORT

Report #11073

PROJECT REPORT OF THE AIRBORNE GEOPHYSICAL SURVEY

CANADIAN STARTEGIC METALS INC.
TREASURE MOUNTAIN PROJECT
HOPE AREA
BRITISH COLUMBIA

DIGHEM SURVEY

NTS: 92 H/6

Fugro Airborne Surveys Corp.
Mississauga, Ontario

December 16th, 2011

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SUMMARY

This report describes the logistics, data acquisition, processing and presentation of results of a DIGHEM airborne geophysical survey carried out for Canadian Strategic Metals Inc. over the Treasure Mountain Project, located in the Hope area, British Columbia. The survey was flown from October 2nd to October 14th, 2011. Total coverage of the survey block amounted to 372.4 line-km.

The purpose of this airborne survey was to map the magnetic and conductive properties of the survey area, and to detect zones of conductive mineralization. This was accomplished by using a DIGHEM multi-coil, multi-frequency electromagnetic system, supplemented by a high sensitivity cesium magnetometer. A GPS electronic navigation system ensured accurate positioning of the geophysical data with respect to the base map.

The survey data were processed and compiled in the Fugro Airborne Surveys Toronto office. Map products and digital data were provided in accordance with the scales and formats specified in the Survey Agreement.

The total field magnetic and apparent resistivity data sets have successfully mapped the magnetic and conductive characteristics of the lithologies in the survey area.

Discrete EM anomalies have been interpreted from the electromagnetic data. They have been interpreted to fall within one of two general categories. The first type consists of discrete, well-defined anomalies, which are usually attributed to conductive sulphides or graphite. The second class of anomalies comprises moderately broad responses, which exhibit the characteristics of a half space. Some of these anomalies may reflect conductive rock units or zones of deep weathering.

The survey property contains many anomalous features, some of which may be considered as exploration targets. Most of the inferred bedrock conductors appear to warrant further investigation using appropriate surface exploration techniques. Areas of interest may be assigned priorities on the basis of supporting geophysical, geochemical and/or geological information. After initial investigations have been carried out, it may be necessary to re-evaluate the remaining anomalies based on information acquired from the follow-up program.

It is recommended that the survey results be reviewed in detail, in conjunction with all available geophysical, geological and geochemical information. Image processing of existing geophysical data should be considered, in order to extract the maximum amount of information from the survey results.

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APPENDIX B

BACKGROUND INFORMATION

Electromagnetics

Fugro electromagnetic responses fall into two general classes, discrete and broad. The discrete class consists of sharp, well-defined anomalies from discrete conductors such as sulphide lenses and steeply dipping sheets of graphite and sulphides. The broad class consists of wide anomalies from conductors having a large horizontal surface such as flatly dipping graphite or sulphide sheets, saline water-saturated sedimentary formations, conductive overburden and rock, kimberlite pipes and geothermal zones. A vertical conductive slab with a width of 200 m would straddle these two classes.

The vertical sheet (half plane) is the most common model used for the analysis of discrete conductors. All anomalies plotted on the geophysical maps are analyzed according to this model. The following section entitled **Discrete Conductor Analysis** describes this model in detail, including the effect of using it on anomalies caused by broad conductors such as conductive overburden.

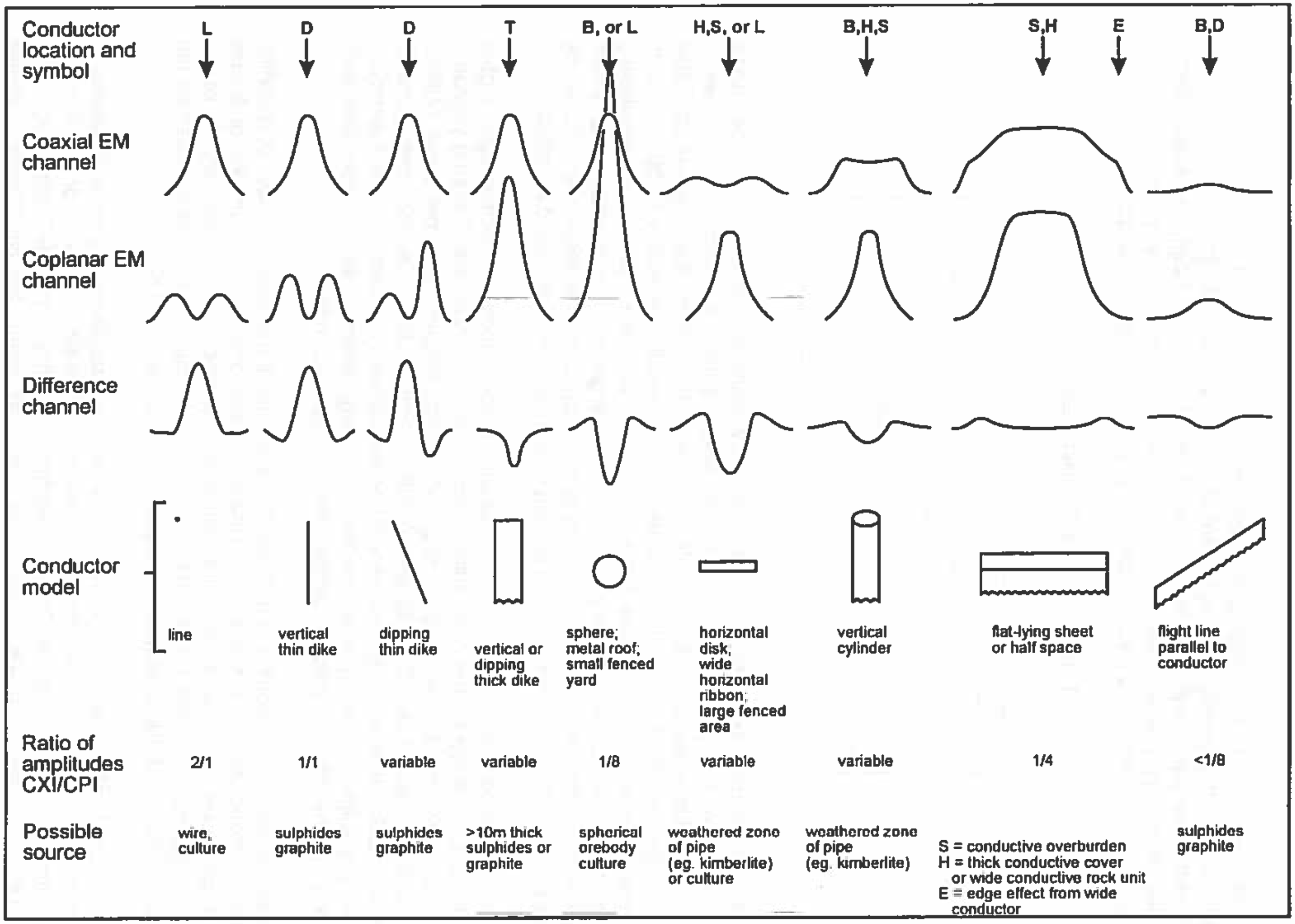
The conductive earth (half-space) model is suitable for broad conductors. Resistivity contour maps result from the use of this model. A later section entitled **Resistivity Mapping** describes the method further, including the effect of using it on anomalies caused by discrete conductors such as sulphide bodies.

Geometric Interpretation

The geophysical interpreter attempts to determine the geometric shape and dip of the conductor. Figure B-1 shows typical HEM anomaly shapes which are used to guide the geometric interpretation.

Discrete Conductor Analysis

The EM anomalies appearing on the electromagnetic map are analyzed by computer to give the conductance (i.e., conductivity-thickness product) in siemens (mhos) of a vertical sheet model. This is done regardless of the interpreted geometric shape of the conductor. This is not an unreasonable procedure, because the computed conductance increases as the electrical quality of the conductor increases, regardless of its true shape. DIGHEM anomalies are divided into seven grades of conductance, as shown in Table B-1. The conductance in siemens (mhos) is the reciprocal of resistance in ohms.



Typical HEM anomaly shapes

Figure B-1

The conductance value is a geological parameter because it is a characteristic of the conductor alone. It generally is independent of frequency, flying height or depth of burial, apart from the averaging over a greater portion of the conductor as height increases. Small anomalies from deeply buried strong conductors are not confused with small anomalies from shallow weak conductors because the former will have larger conductance values.

Table B-1. EM Anomaly Grades

Anomaly Grade	Siemens
7	> 100
6	50 - 100
5	20 - 50
4	10 - 20
3	5 - 10
2	1 - 5
1	< 1

Conductive overburden generally produces broad EM responses which may not be shown as anomalies on the geophysical maps. However, patchy conductive overburden in otherwise resistive areas can yield discrete anomalies with a conductance grade (cf. Table B-1) of 1, 2 or even 3 for conducting clays which have resistivities as low as 50 ohm-m. In areas where ground resistivities are below 10 ohm-m, anomalies caused by weathering variations and similar causes can have any conductance grade. The anomaly shapes from the multiple coils often allow such conductors to be recognized, and these are indicated by the letters S, H, and sometimes E on the geophysical maps (see EM legend on maps).

For bedrock conductors, the higher anomaly grades indicate increasingly higher conductances. Examples: the New Insco copper discovery (Noranda, Canada) yielded a grade 5 anomaly, as did the neighbouring copper-zinc Magusi River ore body; Mattabi (copper-zinc, Sturgeon Lake, Canada) and Whistle (nickel, Sudbury, Canada) gave grade 6; and the Montcalm nickel-copper discovery (Timmins, Canada) yielded a grade 7 anomaly. Graphite and sulphides can span all grades but, in any particular survey area, field work may show that the different grades indicate different types of conductors.

Strong conductors (i.e., grades 6 and 7) are characteristic of massive sulphides or graphite. Moderate conductors (grades 4 and 5) typically reflect graphite or sulphides of a less massive character, while weak bedrock conductors (grades 1 to 3) can signify poorly connected graphite or heavily disseminated sulphides. Grades 1 and 2 conductors may not respond to ground EM equipment using frequencies less than 2000 Hz.

The presence of sphalerite or gangue can result in ore deposits having weak to moderate conductances. As an example, the three million ton lead-zinc deposit of Restigouche Mining Corporation near Bathurst, Canada, yielded a well-defined grade 2 conductor. The 10 percent by volume of sphalerite occurs as a coating around the fine grained massive pyrite, thereby inhibiting electrical conduction. Faults, fractures and shear zones may produce anomalies that typically have low conductances (e.g., grades 1 to 3). Conductive rock formations can yield anomalies of any conductance grade. The conductive materials in such rock formations can be salt water, weathered products such as clays, original depositional clays, and carbonaceous material.

For each interpreted electromagnetic anomaly on the geophysical maps, a letter identifier and an interpretive symbol are plotted beside the EM grade symbol. The conductance grade and depth estimate illustrates which of these possibilities fits the recorded data best.

The conductance measurement is considered more reliable than the depth estimate. There are a number of factors that can produce an error in the depth estimate, including the averaging of topographic variations by the altimeter, overlying conductive overburden, and the location and attitude of the conductor relative to the flight line. Conductor location and attitude can provide an erroneous depth estimate because the stronger part of the conductor may be deeper or to one side of the flight line, or because it has a shallow dip. A heavy tree cover can also produce errors in depth estimates. This is because the depth estimate is computed as the distance of bird from conductor, minus the altimeter reading. The altimeter can lock onto the top of a dense forest canopy. This situation yields an erroneously large depth estimate but does not affect the conductance estimate.

Dip symbols are used to indicate the direction of dip of conductors. These symbols are used only when the anomaly shapes are unambiguous, which usually requires a fairly resistive environment.

A further interpretation is presented on the EM map by means of the line-to-line correlation of bedrock anomalies, which is based on a comparison of anomaly shapes on adjacent lines. This provides conductor axes that may define the geological structure over portions of the survey area. The absence of conductor axes in an area implies that anomalies could not be correlated from line to line with reasonable confidence.

The electromagnetic anomalies are designed to provide a correct impression of conductor quality by means of the conductance grade symbols. The symbols can stand alone with geology when planning a follow-up program. The actual conductance values are available in the EM anomaly archive for those who wish quantitative data. The map provides an interpretation of conductors in terms of length, strike and dip, geometric shape, conductance, depth, and thickness. The accuracy is comparable to an interpretation from a high quality ground EM survey having the same line spacing.

The EM anomaly archive provides a tabulation of anomalies in ppm, conductance, and depth for the vertical dyke model for bedrock anomalies (i.e. B D and T anomaly types), and for a horizontal sheet model for broad anomalies (i.e. S, H and E). No conductance or depth estimates are shown for weak anomalous responses that are not of sufficient amplitude to yield reliable calculations.

Since discrete bodies normally are the targets of EM surveys, local base (or zero) levels are used to compute local anomaly amplitudes. This contrasts with the use of true zero levels which are used to compute true EM amplitudes. Local anomaly amplitudes are shown in the EM anomaly list and these are used to compute the parameters of conductance and depth.

Questionable Anomalies

The EM maps may contain anomalous responses that are displayed as asterisks (*). These responses denote weak anomalies of indeterminate conductance, which may reflect one of the following: a weak conductor near the surface, a strong conductor at depth (e.g., 100 to 120 m below surface) or to one side of the flight line, or aerodynamic noise. Those responses that have the appearance of valid bedrock anomalies on the flight profiles are indicated by appropriate interpretive symbols (see EM legend on maps). The others probably do not warrant further investigation unless their locations are of considerable geological interest.

The Thickness Parameter

A comparison of coaxial and coplanar shapes can provide an indication of the thickness of a steeply dipping conductor. The amplitude of the coplanar anomaly (e.g., CPI channel) increases relative to the coaxial anomaly (e.g., CXI) as the apparent thickness increases, i.e., the thickness in the horizontal plane. (The thickness is equal to the conductor width if the conductor dips at 90 degrees and strikes at right angles to the flight line.) This report refers to a conductor as <u>thin</u> when the thickness is likely to be less than 3 m, and <u>thick</u> when in excess of 10 m. Thick conductors are indicated on the EM map by parentheses "( )". For base metal exploration in steeply dipping geology, thick conductors can be high priority targets because many massive sulphide ore bodies are thick. The system cannot sense the thickness when the strike of the conductor is subparallel to the flight line, when the conductor has a shallow dip, when the anomaly amplitudes are small, or when the resistivity of the environment is below 100 ohm-m.

Resistivity Mapping

Resistivity mapping is useful in areas where broad or flat lying conductive units are of interest. One example of this is the clay alteration which is associated with Carlin-type deposits in the south west United States. The resistivity parameter was able to identify the clay alteration zone over the Cove deposit. The alteration zone appeared as a strong resistivity low on the 900 Hz resistivity parameter. The 7,200 Hz and 56,000 Hz resistivities showed more detail in the covering sediments, and delineated a range front fault. This is typical in many areas of the south west United States, where conductive near surface sediments, which may sometimes be alkalic, attenuate the higher frequencies.

Resistivity mapping has proven successful for locating diatremes in diamond exploration. Weathering products from relatively soft kimberlite pipes produce a resistivity contrast with the unaltered host rock. In many cases weathered kimberlite pipes were associated with thick conductive layers that contrasted with overlying or adjacent relatively thin layers of lake bottom sediments or overburden.

Areas of widespread conductivity are commonly encountered during surveys. These conductive zones may reflect alteration zones, shallow-dipping sulphide or graphite-rich units, saline ground water, or conductive overburden. In such areas, EM amplitude changes can be generated by decreases of only 5 m in survey altitude, as well as by increases in conductivity. The typical flight record in conductive areas is characterized by in-phase and quadrature channels that are continuously active. Local EM peaks reflect either increases in conductivity of the earth or decreases in survey altitude. For such conductive areas, apparent resistivity profiles and contour maps are necessary for the correct interpretation of the airborne data. The advantage of the resistivity parameter is that anomalies caused by altitude changes are virtually eliminated, so the resistivity data reflect only those anomalies caused by conductivity changes. The resistivity analysis also helps the interpreter to differentiate between conductive bedrock and conductive overburden. For example, discrete conductors will generally appear as narrow lows on the contour map and broad conductors (e.g., overburden) will appear as wide lows.

The apparent resistivity is calculated using the pseudo-layer (or buried) half-space model defined by Fraser (1978)[1]. This model consists of a resistive layer overlying a conductive half-space. The depth channels give the apparent depth below surface of the conductive material. The apparent depth is simply the apparent thickness of the overlying resistive layer. The apparent depth (or thickness) parameter will be positive when the upper layer is more resistive than the underlying material, in which case the apparent depth may be quite close to the true depth.

The apparent depth will be negative when the upper layer is more conductive than the underlying material, and will be zero when a homogeneous half-space exists. The apparent depth parameter must be interpreted cautiously because it will contain any errors that might exist in the measured altitude of the EM bird (e.g., as caused by a dense tree cover). The inputs to the resistivity algorithm are the in-phase and quadrature components of the coplanar coil-pair. The outputs are the apparent resistivity of the conductive half-space (the source) and the sensor-source distance. The flying height is not an input variable, and the output resistivity and sensor-source distance are independent of the flying height when the conductivity of the measured material is sufficient to yield significant in-phase as well as quadrature responses. The apparent depth, discussed above, is simply the sensor-source distance minus the measured altitude or flying height. Consequently, errors in the measured altitude will affect the apparent depth parameter but not the apparent resistivity parameter.

The apparent depth parameter is a useful indicator of simple layering in areas lacking a heavy tree cover. Depth information has been used for permafrost mapping, where positive apparent depths were used as a measure of permafrost thickness. However, little

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[1] Resistivity mapping with an airborne multicoil electromagnetic system: Geophysics, v. 43, p.144-172

quantitative use has been made of negative apparent depths because the absolute value of the negative depth is not a measure of the thickness of the conductive upper layer and, therefore, is not meaningful physically. Qualitatively, a negative apparent depth estimate usually shows that the EM anomaly is caused by conductive overburden. Consequently, the apparent depth channel can be of significant help in distinguishing between overburden and bedrock conductors.

Interpretation in Conductive Environments

Environments having low background resistivities (e.g., below 30 ohm-m for a 900 Hz system) yield very large responses from the conductive ground. This usually prohibits the recognition of discrete bedrock conductors. However, Fugro data processing techniques produce three parameters that contribute significantly to the recognition of bedrock conductors in conductive environments. These are the in-phase and quadrature difference channels (DIFI and DIFQ, which are available only on systems with "common" frequencies on orthogonal coil pairs), and the resistivity and depth channels (RES and DEP) for each coplanar frequency.

The EM difference channels (DIFI and DIFQ) eliminate most of the responses from conductive ground, leaving responses from bedrock conductors, cultural features (e.g., telephone lines, fences, etc.) and edge effects. Edge effects often occur near the perimeter of broad conductive zones. This can be a source of geologic noise. While edge effects yield anomalies on the EM difference channels, they do not produce resistivity anomalies. Consequently, the resistivity channel aids in eliminating anomalies due to edge effects. On the other hand, resistivity anomalies will coincide with the most highly conductive sections of conductive ground, and this is another source of geologic noise. The recognition of a bedrock conductor in a conductive environment therefore is based on the anomalous responses of the two difference channels (DIFI and DIFQ) and the resistivity channels (RES). The most favourable situation is where anomalies coincide on all channels.

The DEP channels, which give the apparent depth to the conductive material, also help to determine whether a conductive response arises from surficial material or from a conductive zone in the bedrock. When these channels ride above the zero level on the depth profiles (i.e., depth is negative), it implies that the EM and resistivity profiles are responding primarily to a conductive upper layer, i.e., conductive overburden. If the DEP channels are below the zero level, it indicates that a resistive upper layer exists, and this usually implies the existence of a bedrock conductor. If the low frequency DEP channel is below the zero level and the high frequency DEP is above, this suggests that a bedrock conductor occurs beneath conductive cover.

Reduction of Geologic Noise

Geologic noise refers to unwanted geophysical responses. For purposes of airborne EM surveying, geologic noise refers to EM responses caused by conductive overburden and magnetic permeability. It was mentioned previously that the EM difference channels (i.e., channel DIFI for in-phase and DIFQ for quadrature) tend to eliminate the response of conductive overburden.

Magnetite produces a form of geological noise on the in-phase channels. Rocks containing less than 1% magnetite can yield negative in-phase anomalies caused by magnetic permeability. When magnetite is widely distributed throughout a survey area, the in-phase EM channels may continuously rise and fall, reflecting variations in the magnetite percentage, flying height, and overburden thickness. This can lead to difficulties in recognizing deeply buried bedrock conductors, particularly if conductive overburden also exists. However, the response of broadly distributed magnetite generally vanishes on the in-phase difference channel DIFI. This feature can be a significant aid in the recognition of conductors that occur in rocks containing accessory magnetite.

EM Magnetite Mapping

The information content of HEM data consists of a combination of conductive eddy current responses and magnetic permeability responses. The secondary field resulting from conductive eddy current flow is frequency-dependent and consists of both in-phase and quadrature components, which are positive in sign. On the other hand, the secondary field resulting from magnetic permeability is independent of frequency and consists of only an in-phase component which is negative in sign. When magnetic permeability manifests itself by decreasing the measured amount of positive in-phase, its presence may be difficult to recognize. However, when it manifests itself by yielding a negative in-phase anomaly (e.g., in the absence of eddy current flow), its presence is assured. In this latter case, the negative component can be used to estimate the percent magnetite content.

A magnetite mapping technique, based on the low frequency coplanar data, can be complementary to magnetometer mapping in certain cases. Compared to magnetometry, it is far less sensitive but is more able to resolve closely spaced magnetite zones, as well as providing an estimate of the amount of magnetite in the rock. The method is sensitive to 1/4% magnetite by weight when the EM sensor is at a height of 30 m above a magnetitic half-space. It can individually resolve steep dipping narrow magnetite-rich bands which are separated by 60 m. Unlike magnetometry, the EM magnetite method is unaffected by remanent magnetism or magnetic latitude.

The EM magnetite mapping technique provides estimates of magnetite content which are usually correct within a factor of 2 when the magnetite is fairly uniformly distributed. EM magnetite maps can be generated when magnetic permeability is evident as negative in-phase responses on the data profiles.

Like magnetometry, the EM magnetite method maps only bedrock features, provided that the overburden is characterized by a general lack of magnetite. This contrasts with resistivity mapping which portrays the combined effect of bedrock and overburden.

The Susceptibility Effect

When the host rock is conductive, the positive conductivity response will usually dominate the secondary field, and the susceptibility effect[2] will appear as a reduction in the in-phase, rather than as a negative value. The in-phase response will be lower than would be predicted by a model using zero susceptibility. At higher frequencies the in-phase conductivity response also gets larger, so a negative magnetite effect observed on the low frequency might not be observable on the higher frequencies, over the same body. The susceptibility effect is most obvious over discrete magnetite-rich zones, but also occurs over uniform geology such as a homogeneous half-space.

High magnetic susceptibility will affect the calculated apparent resistivity, if only conductivity is considered. Standard apparent resistivity algorithms use a homogeneous half-space model, with zero susceptibility. For these algorithms, the reduced in-phase response will, in most cases, make the apparent resistivity higher than it should be. It is important to note that there is nothing wrong with the data, nor is there anything wrong with the processing algorithms. The apparent difference results from the fact that the simple geological model used in processing does not match the complex geology.

Measuring and Correcting the Magnetite Effect

Theoretically, it is possible to calculate (forward model) the combined effect of electrical conductivity and magnetic susceptibility on an EM response in all environments. The difficulty lies, however, in separating out the susceptibility effect from other geological effects when deriving resistivity and susceptibility from EM data.

Over a homogeneous half-space, there is a precise relationship between in-phase, quadrature, and altitude. These are often resolved as phase angle, amplitude, and altitude. Within a reasonable range, any two of these three parameters can be used to calculate the half space resistivity. If the rock has a positive magnetic susceptibility, the in-phase component will be reduced and this departure can be recognized by comparison to the other parameters.

The algorithm used to calculate apparent susceptibility and apparent resistivity from HEM data, uses a homogeneous half-space geological model. Non half-space geology, such as horizontal layers or dipping sources, can also distort the perfect half-space relationship of the three data parameters. While it may be possible to use more complex models to calculate both rock parameters, this procedure becomes very complex and time-consuming. For basic HEM data processing, it is most practical to stick to the simplest geological model.

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2 Magnetic susceptibility and permeability are two measures of the same physical property. Permeability is generally given as relative permeability, μ_r, which is the permeability of the substance divided by the permeability of free space ($4 \pi \times 10^{-7}$). Magnetic susceptibility k is related to permeability by $k=\mu^r-1$. Susceptibility is a unitless measurement, and is usually reported in units of 10^{-6}. The typical range of susceptibilities is –1 for quartz, 130 for pyrite, and up to 5×10^5 for magnetite, in 10^{-6} units (Telford et al, 1986).

Magnetite reversals (reversed in-phase anomalies) have been used for many years to calculate an "FeO" or magnetite response from HEM data (Fraser, 1981). However, this technique could only be applied to data where the in-phase was observed to be negative, which happens when susceptibility is high and conductivity is low.

Applying Susceptibility Corrections

Resistivity calculations done with susceptibility correction may change the apparent resistivity. High-susceptibility conductors, that were previously masked by the susceptibility effect in standard resistivity algorithms, may become evident. In this case the susceptibility corrected apparent resistivity is a better measure of the actual resistivity of the earth. However, other geological variations, such as a deep resistive layer, can also reduce the in-phase by the same amount. In this case, susceptibility correction would not be the best method. Different geological models can apply in different areas of the same data set. The effects of susceptibility, and other effects that can create a similar response, must be considered when selecting the resistivity algorithm.

Susceptibility from EM vs. Magnetic Field Data

The response of the EM system to magnetite may not match that from a magnetometer survey. First, HEM-derived susceptibility is a rock property measurement, like resistivity. Magnetic data show the total magnetic field, a measure of the potential field, not the rock property. Secondly, the shape of an anomaly depends on the shape and direction of the source magnetic field. The electromagnetic field of HEM is much different in shape from the earth's magnetic field. Total field magnetic anomalies are different at different magnetic latitudes; HEM susceptibility anomalies have the same shape regardless of their location on the earth.

In far northern latitudes, where the magnetic field is nearly vertical, the total magnetic field measurement over a thin vertical dike is very similar in shape to the anomaly from the HEM-derived susceptibility (a sharp peak over the body). The same vertical dike at the magnetic equator would yield a negative magnetic anomaly, but the HEM susceptibility anomaly would show a positive susceptibility peak.

Effects of Permeability and Dielectric Permittivity

Resistivity algorithms that assume free-space magnetic permeability and dielectric permittivity do not yield reliable values in highly magnetic or highly resistive areas. Both magnetic polarization and displacement currents cause a decrease in the in-phase component, often resulting in negative values that yield erroneously high apparent resistivities. The effects of magnetite occur at all frequencies, but are most evident at the lowest frequency. Conversely, the negative effects of dielectric permittivity are most evident at the higher frequencies, in resistive areas.

The table below shows the effects of varying permittivity over a resistive (10,000 ohm-m) half space, at frequencies of 56,000 Hz (DIGHEM^{V}) and 102,000 Hz (RESOLVE).

Apparent Resistivity Calculations

Effects of Permittivity on In-phase/Quadrature/Resistivity

Freq (Hz)	Coil	Sep (m)	Thres (ppm)	Alt (m)	In Phase	Quad Phase	App Res	App Depth (m)	Permittivity
56,000	CP	6.3	0.1	30	7.3	35.3	10118	-1.0	1 Air
56,000	CP	6.3	0.1	30	3.6	36.6	19838	-13.2	5 Quartz
56,000	CP	6.3	0.1	30	-1.1	38.3	81832	-25.7	10 Epidote
56,000	CP	6.3	0.1	30	-10.4	42.3	76620	-25.8	20 Granite
56,000	CP	6.3	0.1	30	-19.7	46.9	71550	-26.0	30 Diabase
56,000	CP	6.3	0.1	30	-28.7	52.0	66787	-26.1	40 Gabbro
102,000	CP	7.86	0.1	30	32.5	117.2	9409	-0.3	1 Air
102,000	CP	7.86	0.1	30	11.7	127.2	25956	-16.8	5 Quartz
102,000	CP	7.86	0.1	30	-14.0	141.6	97064	-26.5	10 Epidote
102,000	CP	7.86	0.1	30	-62.9	176.0	83995	-26.8	20 Granite
102,000	CP	7.86	0.1	30	-107.5	215.8	73320	-27.0	30 Diabase
102,000	CP	7.86	0.1	30	-147.1	259.2	64875	-27.2	40 Gabbro

Methods have been developed (Huang and Fraser, 2000, 2001) to correct apparent resistivities for the effects of permittivity and permeability. The corrected resistivities yield more credible values than if the effects of permittivity and permeability are disregarded.

Recognition of Culture

Cultural responses include all EM anomalies caused by man-made metallic objects. Such anomalies may be caused by inductive coupling or current gathering. The concern of the interpreter is to recognize when an EM response is due to culture. Points of consideration used by the interpreter, when coaxial and coplanar coil-pairs are operated at a common frequency, are as follows:

1. Channels CXPL and CPPL monitor 60 Hz radiation. An anomaly on these channels shows that the conductor is radiating power. Such an indication is normally a guarantee that the conductor is cultural. However, care must be taken to ensure that the conductor is not a geologic body that strikes across a power line, carrying leakage currents.

2. A flight that crosses a "line" (e.g., fence, telephone line, etc.) yields a centre-peaked coaxial anomaly and an m-shaped coplanar anomaly.[3] When the flight crosses the cultural line at a high angle of intersection, the amplitude ratio of coaxial/coplanar response is 2. Such an EM anomaly can only be caused by a line. The geologic body that yields anomalies most closely resembling a line is the vertically dipping thin dike. Such a body, however, yields an amplitude ratio of 1 rather than 2. Consequently, an m-shaped coplanar anomaly with a CXI/CPI amplitude ratio of 2 is virtually a guarantee that the source is a cultural line.

3. A flight that crosses a sphere or horizontal disk yields centre-peaked coaxial and coplanar anomalies with a CXI/CPI amplitude ratio (i.e., coaxial/coplanar) of 1/8. In the absence of geologic bodies of this geometry, the most likely conductor is a metal roof or small fenced yard.[4] Anomalies of this type are virtually certain to be cultural if they occur in an area of culture.

4. A flight that crosses a horizontal rectangular body or wide ribbon yields an m-shaped coaxial anomaly and a centre-peaked coplanar anomaly. In the absence of geologic bodies of this geometry, the most likely conductor is a large fenced area.[5] Anomalies of this type are virtually certain to be cultural if they occur in an area of culture.

5. EM anomalies that coincide with culture, as seen on the camera film or video display, are usually caused by culture. However, care is taken with such coincidences because a geologic conductor could occur beneath a fence, for example. In this example, the fence would be expected to yield an m-shaped coplanar anomaly as in case #2 above. If, instead, a centre-peaked coplanar anomaly occurred, there would be concern that a thick geologic conductor coincided with the cultural line.

6. The above description of anomaly shapes is valid when the culture is not conductively coupled to the environment. In this case, the anomalies arise from inductive coupling to the EM transmitter. However, when the environment is quite conductive (e.g., less than 100 ohm-m at 900 Hz), the cultural conductor may be conductively coupled to the environment. In this latter case, the anomaly shapes tend to be governed by current gathering. Current gathering can completely distort the anomaly shapes, thereby complicating the identification of cultural anomalies. In such circumstances, the interpreter can only rely on the radiation channels and on the camera film or video records.

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3 See Figure B-1 presented earlier.

4 It is a characteristic of EM that geometrically similar anomalies are obtained from: (1) a planar conductor, and (2) a wire which forms a loop having dimensions identical to the perimeter of the equivalent planar conductor.

Magnetic Responses

The measured total magnetic field provides information on the magnetic properties of the earth materials in the survey area. The information can be used to locate magnetic bodies of direct interest for exploration, and for structural and lithological mapping.

The total magnetic field response reflects the abundance of magnetic material in the source. Magnetite is the most common magnetic mineral. Other minerals such as ilmenite, pyrrhotite, franklinite, chromite, hematite, arsenopyrite, limonite and pyrite are also magnetic, but to a lesser extent than magnetite on average.

In some geological environments, an EM anomaly with magnetic correlation has a greater likelihood of being produced by sulphides than one which is non-magnetic. However, sulphide ore bodies may be non-magnetic (e.g., the Kidd Creek deposit near Timmins, Canada) as well as magnetic (e.g., the Mattabi deposit near Sturgeon Lake, Canada).

Iron ore deposits will be anomalously magnetic in comparison to surrounding rock due to the concentration of iron minerals such as magnetite, ilmenite and hematite.

Changes in magnetic susceptibility often allow rock units to be differentiated based on the total field magnetic response. Geophysical classifications may differ from geological classifications if various magnetite levels exist within one general geological classification. Geometric considerations of the source such as shape, dip and depth, inclination of the earth's field and remanent magnetization will complicate such an analysis.

In general, mafic lithologies contain more magnetite and are therefore more magnetic than many sediments which tend to be weakly magnetic. Metamorphism and alteration can also increase or decrease the magnetization of a rock unit.
Textural differences on a total field magnetic contour, colour or shadow map due to the frequency of activity of the magnetic parameter resulting from inhomogeneities in the distribution of magnetite within the rock, may define certain lithologies. For example, near surface volcanics may display highly complex contour patterns with little line-to-line correlation.

Rock units may be differentiated based on the plan shapes of their total field magnetic responses. Mafic intrusive plugs can appear as isolated "bulls-eye" anomalies. Granitic intrusives appear as sub-circular zones, and may have contrasting rings due to contact metamorphism. Generally, granitic terrain will lack a pronounced strike direction, although granite gneiss may display strike.

Linear north-south units are theoretically not well-defined on total field magnetic maps in equatorial regions due to the low inclination of the earth's magnetic field. However, most stratigraphic units will have variations in composition along strike that will cause the units to appear as a series of alternating magnetic highs and lows.

Faults and shear zones may be characterized by alteration that causes destruction of magnetite (e.g., weathering) that produces a contrast with surrounding rock. Structural breaks may be filled by magnetite-rich, fracture filling material as is the case with diabase dikes, or by non-magnetic felsic material.

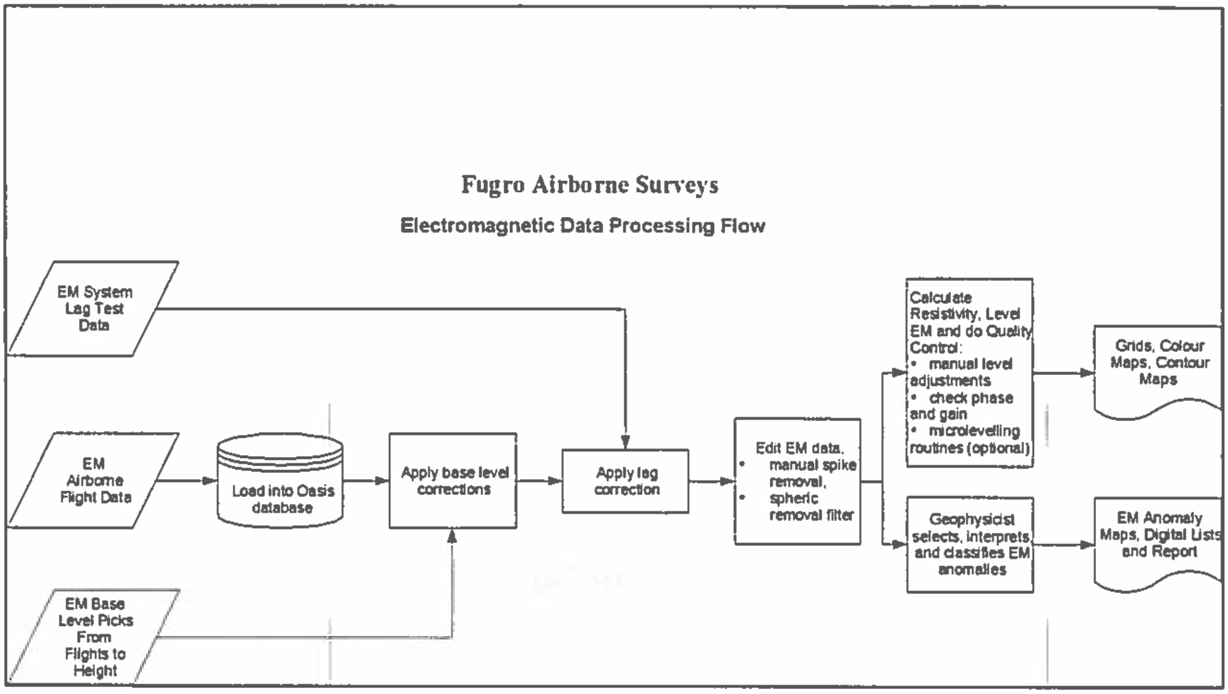
Faulting can also be identified by patterns in the magnetic total field contours or colours. Faults and dikes tend to appear as lineaments and often have strike lengths of several kilometres. Offsets in narrow, magnetic, stratigraphic trends also delineate structure. Sharp contrasts in magnetic lithologies may arise due to large displacements along strike-slip or dip-slip faults.

APPENDIX C

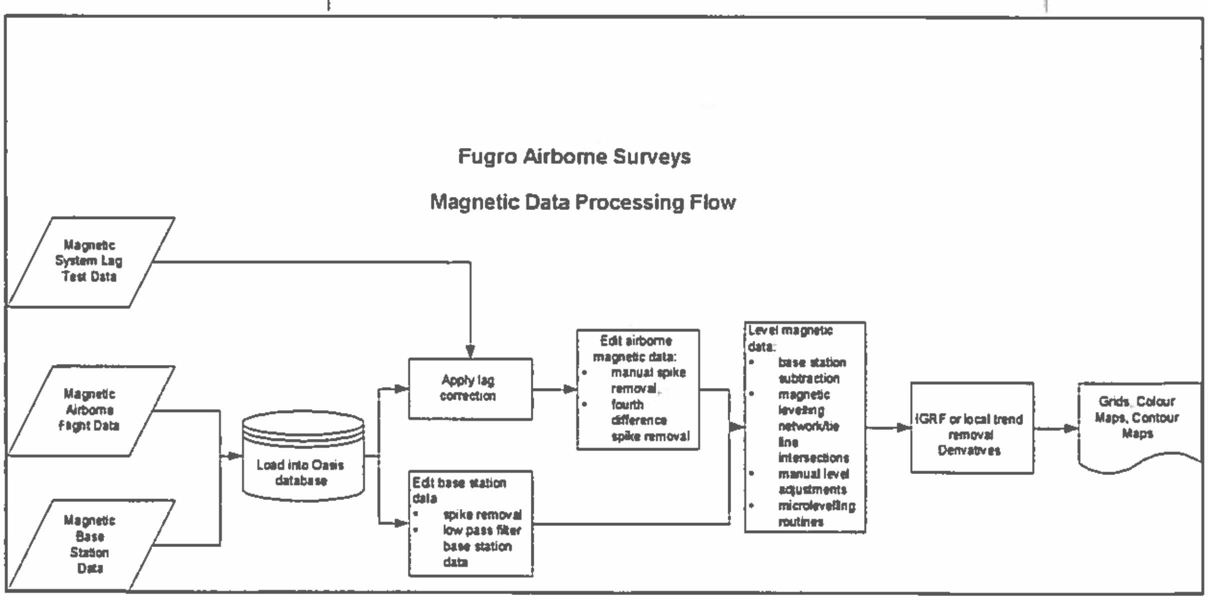
DATA PROCESSING

APPENDIX C

Processing Flow Chart - Electromagnetic Data



Processing Flow Chart - Magnetic Data



APPENDIX D

GLOSSARY

APPENDIX D

GLOSSARY OF AIRBORNE GEOPHYSICAL TERMS

Note: The definitions given in this glossary refer to the common terminology as used in airborne geophysics.

altitude attenuation: the absorption of gamma rays by the atmosphere between the earth and the detector. The number of gamma rays detected by a system decreases as the altitude increases.

apparent- : the ***physical parameters*** of the earth measured by a geophysical system are normally expressed as apparent, as in "apparent ***resistivity***". This means that the measurement is limited by assumptions made about the geology in calculating the response measured by the geophysical system. Apparent resistivity calculated with ***HEM***, for example, generally assumes that the earth is a ***homogeneous half-space*** – not layered.

amplitude: The strength of the total electromagnetic field. In ***frequency domain*** it is most often the sum of the squares of ***in-phase*** and ***quadrature*** components. In multi-component electromagnetic surveys it is generally the sum of the squares of all three directional components.

analytic signal: The total amplitude of all the directions of magnetic ***gradient***. Calculated as the sum of the squares.

anisotropy: Having different ***physical parameters*** in different directions. This can be caused by layering or fabric in the geology. Note that a unit can be anisotropic, but still **homogeneous.**

anomaly: A localized change in the geophysical data characteristic of a discrete source, such as a conductive or magnetic body. Something locally different from the **background.**

B-field: In time-domain **electromagnetic** surveys, the magnetic field component of the (electromagnetic) **field**. This can be measured directly, although more commonly it is calculated by integrating the time rate of change of the magnetic field **dB/dt**, as measured with a receiver coil.

background: The "normal" response in the geophysical data – that response observed over most of the survey area. **Anomalies** are usually measured relative to the background. In airborne gamma-ray spectrometric surveys the term defines the **cosmic**, radon, and aircraft responses in the absence of a signal from the ground.

base-level: The measured values in a geophysical system in the absence of any outside signal. All geophysical data are measured relative to the system base level.

base frequency: The frequency of the pulse repetition for a ***time-domain electromagnetic*** system. Measured between subsequent positive pulses.

bird: A common name for the pod towed beneath or behind an aircraft, carrying the geophysical sensor array.

calibration coil: A wire coil of known size and dipole moment, which is used to generate a field of known ***amplitude*** and ***phase*** in the receiver, for system calibration. Calibration coils can be external, or internal to the system. Internal coils may be called Q-coils.

coaxial coils: **[CX]** Coaxial coils are in the vertical plane, with their axes horizontal and collinear in the flight direction. These are most sensitive to vertical conductive objects in the ground, such as thin, steeply dipping conductors perpendicular to the flight direction. Coaxial coils generally give the sharpest anomalies over localized conductors. (See also ***coplanar coils***)

coil: A multi-turn wire loop used to transmit or detect electromagnetic fields. Time varying ***electromagnetic*** fields through a coil induce a voltage proportional to the strength of the field and the rate of change over time.

compensation: Correction of airborne geophysical data for the changing effect of the aircraft. This process is generally used to correct data in ***fixed-wing time-domain electromagnetic*** surveys (where the transmitter is on the aircraft and the receiver is moving), and magnetic surveys (where the sensor is on the aircraft, turning in the earth's magnetic field.

component: In ***frequency domain electromagnetic*** surveys this is one of the two **phase** measurements – ***in-phase or quadrature***. In "multi-component" electromagnetic surveys it is also used to define the measurement in one geometric direction (vertical, horizontal in-line and horizontal transverse – the Z, X and Y components).

Compton scattering: gamma ray photons will bounce off the nuclei of atoms they pass through (earth and atmosphere), reducing their energy and then being detected by ***radiometric*** sensors at lower energy levels. See also ***stripping***.

conductance: See ***conductivity thickness***

conductivity: [σ] The facility with which the earth or a geological formation conducts electricity. Conductivity is usually measured in milli-Siemens per metre (mS/m). It is the reciprocal of ***resistivity***.

conductivity-depth imaging: see ***conductivity-depth transform***.

conductivity-depth transform: A process for converting electromagnetic measurements to an approximation of the conductivity distribution vertically in the earth, assuming a ***layered earth***. (Macnae and Lamontagne, 1987; Wolfgram and Karlik, 1995)

conductivity thickness: [σt] The product of the ***conductivity***, and thickness of a large, tabular body. (It is also called the "conductivity-thickness product") In electromagnetic geophysics, the response of a thin plate-like conductor is proportional to the conductivity multiplied by thickness. For example a 10 metre thickness of 20 Siemens/m mineralization will be equivalent to 5 metres of 40 S/m; both have 200 S conductivity thickness. Sometimes referred to as conductance.

conductor: Used to describe anything in the ground more conductive than the surrounding geology. Conductors are most often clays or graphite, or hopefully some type of mineralization, but may also be man-made objects, such as fences or pipelines.

coplanar coils: **[CP]** The coplanar coils lie in the horizontal plane with their axes vertical, and parallel. These coils are most sensitive to massive conductive bodies, horizontal layers, and the ***halfspace***.

cosmic ray: High energy sub-atomic particles from outer space that collide with the earth's atmosphere to produce a shower of gamma rays (and other particles) at high energies.

counts (per second): The number of ***gamma-rays*** detected by a gamma-ray ***spectrometer.*** The rate depends on the geology, but also on the size and sensitivity of the detector.

culture: A term commonly used to denote any man-made object that creates a geophysical anomaly. Includes, but not limited to, power lines, pipelines, fences, and buildings.

current gathering: The tendency of electrical currents in the ground to channel into a conductive formation. This is particularly noticeable at higher frequencies or early time channels when the formation is long and parallel to the direction of current flow. This tends to enhance anomalies relative to inductive currents (see also ***induction***). Also known as current channelling.

current channelling: See current gathering.

daughter products: The radioactive natural sources of gamma-rays decay from the original element (commonly potassium, uranium, and thorium) to one or more lower-energy elements. Some of these lower energy elements are also radioactive and decay further. ***Gamma-ray spectrometry*** surveys may measure the gamma rays given off by the original element or by the decay of the daughter products.

dB/dt: As the ***secondary electromagnetic field*** changes with time, the magnetic field [B] component induces a voltage in the receiving ***coil***, which is proportional to the rate of change of the magnetic field over time.

decay: In ***time-domain electromagnetic*** theory, the weakening over time of the ***eddy currents*** in the ground, and hence the ***secondary field*** after the ***primary field*** electromagnetic pulse is turned off. In ***gamma-ray spectrometry***, the radioactive breakdown of an element, generally potassium, uranium, thorium, or one of their ***daughter*** products.

decay series: In ***gamma-ray spectrometry***, a series of progressively lower energy ***daughter products*** produced by the radioactive breakdown of uranium or thorium.

decay constant: see time constant.

depth of exploration: The maximum depth at which the geophysical system can detect the target. The depth of exploration depends very strongly on the type and size of the target, the contrast of the target with the surrounding geology, the homogeneity of the surrounding geology, and the type of geophysical system. One measure of the maximum depth of exploration for an electromagnetic system is the depth at which it can detect the strongest conductive target – generally a highly conductive horizontal layer.

differential resistivity: A process of transforming ***apparent resistivity*** to an approximation of layer resistivity at each depth. The method uses multi-frequency HEM data and approximates the effect of shallow layer ***conductance*** determined from higher frequencies to estimate the deeper conductivities (Huang and Fraser, 1996)

dipole moment: [NIA] For a transmitter, the product of the area of a ***coil***, the number of turns of wire, and the current flowing in the coil. At a distance significantly larger than the size of the coil, the magnetic field from a coil will be the same if the dipole moment product is the same. For a receiver coil, this is the product of the area and the number of turns. The sensitivity to a magnetic field (assuming the source is far away) will be the same if the dipole moment is the same.

diurnal: The daily variation in a natural field, normally used to describe the natural fluctuations (over hours and days) of the earth's magnetic field.

dielectric permittivity: [ε] The capacity of a material to store electrical charge, this is most often measured as the relative permittivity [ε_r], or ratio of the material dielectric to that of free space. The effect of high permittivity may be seen in HEM data at high frequencies over highly resistive geology as a reduced or negative ***in-phase***, and higher ***quadrature*** data.

drift: Long-time variations in the base-level or calibration of an instrument.

eddy currents: The electrical currents induced in the ground, or other conductors, by a time-varying ***electromagnetic field*** (usually the ***primary field***). Eddy currents are also induced in the aircraft's metal frame and skin; a source of ***noise*** in EM surveys.

electromagnetic: **[EM]** Comprised of a time-varying electrical and magnetic field. Radio waves are common electromagnetic fields. In geophysics, an electromagnetic system is one which transmits a time-varying ***primary field*** to induce ***eddy currents*** in the ground, and then measures the ***secondary field*** emitted by those eddy currents.

energy window: A broad spectrum of ***gamma-ray*** energies measured by a spectrometric survey. The energy of each gamma-ray is measured and divided up into numerous discrete energy levels, called windows.

equivalent (thorium or uranium): The amount of radioelement calculated to be present, based on the gamma-rays measured from a **daughter** element. This assumes that the ***decay series*** is in equilibrium – progressing normally.

fiducial, or fid: Timing mark on a survey record. Originally these were timing marks on a profile or film; now the term is generally used to describe 1-second interval timing records in digital data, and on maps or profiles.

fixed-wing: Aircraft with wings, as opposed to "rotary wing" helicopters.

footprint: This is a measure of the area of sensitivity under the aircraft of an airborne geophysical system. The footprint of an ***electromagnetic*** system is dependent on the altitude of the system, the orientation of the transmitter and receiver and the separation between the receiver and transmitter, and the conductivity of the ground. The footprint of a ***gamma-ray spectrometer*** depends mostly on the altitude. For all geophysical systems, the footprint also depends on the strength of the contrasting ***anomaly***.

frequency domain: An ***electromagnetic*** system which transmits a ***primary field*** that oscillates smoothly over time (sinusoidal), inducing a similarly varying electrical current in the ground. These systems generally measure the changes in the ***amplitude*** and ***phase*** of the ***secondary field*** from the ground at different frequencies by measuring the **in-phase** and **quadrature** phase components. See also ***time-domain***.

full-stream data: Data collected and recorded continuously at the highest possible sampling rate. Normal data are stacked (see ***stacking***) over some time interval before recording.

gamma-ray: A very high-energy photon, emitted from the nucleus of an atom as it undergoes a change in energy levels.

gamma-ray spectrometry: Measurement of the number and energy of natural (and sometimes man-made) gamma-rays across a range of photon energies.

gradient: In magnetic surveys, the gradient is the change of the magnetic field over a distance, either vertically or horizontally in either of two directions. Gradient data is often measured, or calculated from the total magnetic field data because it changes more quickly over distance than the ***total magnetic field***, and so may provide a more precise measure of the location of a source. See also ***analytic signal***.

ground effect: The response from the earth. A common calibration procedure in many geophysical surveys is to fly to altitude high enough to be beyond any measurable response from the ground, and there establish ***base levels*** or ***backgrounds***.

half-space: A mathematical model used to describe the earth – as infinite in width, length, and depth below the surface. The most common halfspace models are ***homogeneous*** and ***layered earth***.

heading error: A slight change in the magnetic field measured when flying in opposite directions.

HEM: Helicopter ElectroMagnetic, This designation is most commonly used to helicopter-borne, ***frequency-domain*** electromagnetic systems. At present, the transmitter and receivers are normally mounted in a ***bird*** carried on a sling line beneath the helicopter.

herringbone pattern: a pattern created in geophysical data by an asymmetric system, where the **anomaly** may be extended to either side of the source, in the direction of flight. Appears like fish bones, or like the teeth of a comb, extending either side of centre, each tooth an alternate flight line.

homogeneous: This is a geological unit that has the same ***physical parameters*** throughout its volume. This unit will create the same response to an HEM system anywhere, and the HEM system will measure the same apparent ***resistivity*** anywhere. The response may change with system direction (see ***anisotropy***).

in-phase: the component of the measured ***secondary field*** that has the same phase as the transmitter and the ***primary field***. The in-phase component is stronger than the ***quadrature*** phase over relatively higher ***conductivity***.

induction: Any time-varying electromagnetic field will induce (cause) electrical currents to flow in any object with non-zero ***conductivity***. (see ***eddy currents***)

infinite: In geophysical terms, an "infinite' dimension is one much greater than the ***footprint*** of the system, so that the system does not detect changes at the edges of the object.

International Geomagnetic Reference Field: **[IGRF]** An approximation of the smooth magnetic field of the earth, in the absence of variations due to local geology. Once the IGRF is subtracted from the measured magnetic total field data, any remaining variations are assumed to be due to local geology. The IGRF also predicts the slow changes of the field up to five years in the future.

inversion, or **inverse modeling**: A process of converting geophysical data to an earth model, which compares theoretical models of the response of the earth to the data measured, and refines the model until the response closely fits the measured data (Huang and Palacky, 1991)

layered earth: A common geophysical model which assumes that the earth is horizontally layered – the ***physical parameters*** are constant to ***infinite*** distance horizontally, but change vertically.

magnetic permeability: [μ] This is defined as the ratio of magnetic induction to the inducing magnetic field. The relative magnetic permeability [μ_r] is often quoted, which is the ratio of the rock permeability to the permeability of free space. In geology and geophysics, the ***magnetic susceptibility*** is more commonly used to describe rocks.

magnetic susceptibility: [k] A measure of the degree to which a body is magnetized. In SI units this is related to relative ***magnetic permeability*** by $k=\mu_r-1$, and is a dimensionless unit. For most geological material, susceptibility is influenced primarily by the percentage of magnetite. It is most often quoted in units of 10^{-6}. In HEM data this is most often apparent as a negative ***in-phase*** component over high susceptibility, high ***resistivity*** geology such as diabase dikes.

noise: That part of a geophysical measurement that the user does not want. Typically this includes electronic interference from the system, the atmosphere (***sferics***), and man-made sources. This can be a subjective judgment, as it may include the response from geology other than the target of interest. Commonly the term is used to refer to high frequency (short period) interference. See also ***drift***.

Occam's inversion: an ***inversion*** process that matches the measured ***electromagnetic*** data to a theoretical model of many, thin layers with constant thickness and varying resistivity (Constable et al, 1987).

off-time: In a ***time-domain electromagnetic*** survey, the time after the end of the ***primary field pulse***, and before the start of the next pulse.

on-time: In a ***time-domain electromagnetic*** survey, the time during the ***primary field pulse***.

phase: The angular difference in time between a measured sinusoidal electromagnetic field and a reference – normally the primary field. The phase is calculated from $\tan^{-1}$(***in-phase / quadrature***).

physical parameters: These are the characteristics of a geological unit. For electromagnetic surveys, the important parameters for electromagnetic surveys are ***conductivity, magnetic permeability*** (or ***susceptibility***) and ***dielectric permittivity***; for magnetic surveys the parameter is magnetic susceptibility, and for gamma ray spectrometric surveys it is the concentration of the major radioactive elements: potassium, uranium, and thorium.

permittivity: see ***dielectric permittivity***.

permeability: see ***magnetic permeability***.

primary field: the EM field emitted by a transmitter. This field induces ***eddy currents*** in (energizes) the conductors in the ground, which then create their own ***secondary fields***.

pulse: In time-domain EM surveys, the short period of intense ***primary*** field transmission. Most measurements (the ***off-time***) are measured after the pulse.

quadrature: that component of the measured ***secondary field*** that is phase-shifted 90° from the ***primary field***. The quadrature component tends to be stronger than the ***in-phase*** over relatively weaker ***conductivity***.

Q-coils: see ***calibration coil.***

radiometric: Commonly used to refer to ***gamma ray*** spectrometry.

radon: A radioactive daughter product of uranium and thorium, radon is a gas which can leak into the atmosphere, adding to the non-geological background of a gamma-ray spectrometric survey.

resistivity: [ρ] The strength with which the earth or a geological formation resists the flow of electricity, typically the flow induced by the ***primary field*** of the electromagnetic transmitter. Normally expressed in ohm-metres, it is the reciprocal of ***conductivity***.

resistivity-depth transforms: similar to ***conductivity depth transforms***, but the calculated ***conductivity*** has been converted to ***resistivity***.

resistivity section: an approximate vertical section of the resistivity of the layers in the earth. The resistivities can be derived from the ***apparent resistivity***, the ***differential resistivities***, ***resistivity-depth transforms***, or ***inversions***.

secondary field: The field created by conductors in the ground, as a result of electrical currents induced by the ***primary field*** from the ***electromagnetic*** transmitter. Airborne ***electromagnetic*** systems are designed to create, and measure a secondary field.

Sengpiel section: a ***resistivity section*** derived using the ***apparent resistivity*** and an approximation of the depth of maximum sensitivity for each frequency.

sferic: Lightning, or the ***electromagnetic*** signal from lightning, it is an abbreviation of "atmospheric discharge". These appear to magnetic and electromagnetic sensors as sharp "spikes" in the data. Under some conditions lightning storms can be detected from hundreds of kilometres away. (see ***noise***)

signal: That component of a measurement that the user wants to see – the response from the targets, from the earth, etc. (See also ***noise***)

skin depth: A measure of the depth of penetration of an electromagnetic field into a material. It is defined as the depth at which the primary field decreases to 1/e of the field at the surface. It is calculated by approximately 503 x √(resistivity/frequency). Note that depth of penetration is greater at higher ***resistivity*** and/or lower ***frequency***.

spectrometry: Measurement across a range of energies, where ***amplitude*** and energy are defined for each measurement. In gamma-ray spectrometry, the number of gamma rays are measured for each energy ***window***, to define the ***spectrum***.

spectrum: In ***gamma ray spectrometry***, the continuous range of energy over which gamma rays are measured. In ***time-domain electromagnetic*** surveys, the spectrum is the energy of the **pulse** distributed across an equivalent, continuous range of frequencies.

spheric: see ***sferic***.

stacking: Summing repeat measurements over time to enhance the repeating ***signal***, and minimize the random ***noise***.

stripping: Estimation and correction for the gamma ray photons of higher and lower energy that are observed in a particular ***energy window***. See also ***Compton scattering***.

susceptibility: See ***magnetic susceptibility***.

tau: [τ] Often used as a name for the ***time constant***.

TDEM: ***time domain electromagnetic***.

thin sheet: A standard model for electromagnetic geophysical theory. It is usually defined as thin, flat-lying, and ***infinite*** in both horizontal directions. (see also ***vertical plate***)

tie-line: A survey line flown across most of the ***traverse lines***, generally perpendicular to them, to assist in measuring ***drift*** and ***diurnal*** variation. In the short time required to fly a tie-line it is assumed that the drift and/or diurnal will be minimal, or at least changing at a constant rate.

time constant: The time required for an ***electromagnetic*** field to decay to a value of 1/e of the original value. In ***time-domain*** electromagnetic data, the time constant is proportional to the size and ***conductance*** of a tabular conductive body. Also called the decay constant.

Time channel: In ***time-domain electromagnetic*** surveys the decaying ***secondary field*** is measured over a period of time, and the divided up into a series of consecutive discrete measurements over that time.

time-domain: ***Electromagnetic*** system which transmits a pulsed, or stepped ***electromagnetic*** field. These systems induce an electrical current (***eddy current***) in the ground that persists after the ***primary field*** is turned off, and measure the change over time of the ***secondary field*** created as the currents ***decay***. See also ***frequency-domain***.

total energy envelope: The sum of the squares of the three ***components*** of the ***time-domain electromagnetic secondary field***. Equivalent to the ***amplitude*** of the secondary field.

transient: Time-varying. Usually used to describe a very short period pulse of ***electromagnetic*** field.

traverse line: A normal geophysical survey line. Normally parallel traverse lines are flown across the property in spacing of 50 m to 500 m, and generally perpendicular to the target geology.

vertical plate: A standard model for electromagnetic geophysical theory. It is usually defined as thin, and ***infinite*** in horizontal dimension and depth extent. (see also ***thin sheet***)

waveform: The shape of the ***electromagnetic pulse*** from a ***time-domain*** electromagnetic transmitter.

window: A discrete portion of a ***gamma-ray spectrum*** or ***time-domain electromagnetic decay***. The continuous energy spectrum or ***full-stream*** data are grouped into windows to reduce the number of samples, and reduce ***noise***.

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Common Symbols and Acronyms

k Magnetic susceptibility
ε Dielectric permittivity
μ, μ_r Magnetic permeability, apparent permeability
ρ, ρ_a Resistivity, apparent resistivity
σ,σ_a Conductivity, apparent conductivity
σt Conductivity thickness
τ Tau, or time constant
Ω.m Ohm-metres, units of resistivity
AGS Airborne gamma ray spectrometry.
CDT Conductivity-depth transform, conductivity-depth imaging (Macnae and Lamontagne, 1987; Wolfgram and Karlik, 1995)
CPI, CPQ Coplanar in-phase, quadrature
CPS Counts per second
CTP Conductivity thickness product
CXI, CXQ Coaxial, in-phase, quadrature
fT femtoteslas, normal unit for measurement of B-Field
EM Electromagnetic
keV kilo electron volts – a measure of gamma-ray energy
MeV mega electron volts – a measure of gamma-ray energy 1MeV = 1000keV
NIA dipole moment: turns x current x Area
nT nano-Tesla, a measure of the strength of a magnetic field
ppm parts per million – a measure of secondary field or noise relative to the primary.
pT/s picoTeslas per second: Units of decay of secondary field, dB/dt
S Siemens – a unit of conductance
x: the horizontal component of an EM field parallel to the direction of flight.
y: the horizontal component of an EM field perpendicular to the direction of flight.
z: the vertical component of an EM field.

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Macnae, J. and Lamontagne, Y., 1987, Imaging quasi-layered conductive structures by simple processing of transient electromagnetic data: Geophysics, v52, 4, 545-554.

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APPENDIX E

ARCHIVE DESCRIPTION

Fugro Archive Summary

Archive Date: December 15, 2011

This archive contains FINAL data and grids of an airborne DighemV electromagnetic and magnetic geophysical survey over the Treasure Mountain Project, Hope Area, BC, conducted by FUGRO AIRBORNE SURVEYS CORP. on behalf of Canadian Strategic Metals Inc., flown from October 2-14 , 2011

Job # 11073

\GRIDS\GEOSOFT Grids in Geosoft format (with associated GI files)

CVG.GRD	- Calculated Vertical Magnetic Gradient nT/m
MAG.GRD	- Residual Magnetic Intensity nT
RES900.GRD	- Apparent Resistivity 900 Hz ohm•m
RES7200.GRD	- Apparent Resistivity 7200 Hz ohm•m
RES56K.GRD	- Apparent Resistivity 56k Hz ohm•m

\LINEDATA

TreasureMountain.GDB	- Data archive in Geosoft GDB format
TreasureMountain.XYZ	- Data archive in Geosoft ASCII format
AEM_TreasureMountain.XYZ	- Anomaly archive in ASCII format

\MAPS Final colour maps in PDF format

AEM.PDF	- Electromagnetic Anomalies sheet
CVG.PDF	- Calculated Vertical Magnetic Gradient nT/m sheet
MAG.PDF	- Residual Magnetic Intensity nT sheet
RES900.PDF	- Apparent Resistivity 900 Hz ohm•m sheet
RES7200.PDF	- Apparent Resistivity 7200 Hz ohm•m sheet
RES56K.PDF	- Apparent Resistivity 56 KHz ohm•m sheet

\REPORT

R11073.PDF	- Survey Report
11073_anomalies.PDF	- Anomaly Table

\VECTORS Final vectors files in DXF format

AEM.DXF	- Anomaly Picks
Interp.DXF	- Interpretation

****

GEOSOFT GDB and XYZ ARCHIVE SUMMARY

#	CHANNEL	TIME	UNITS	DESCRIPTION
1	x	0.1	m	easting NAD 83 (UTM Zone 10)
2	y	0.1	m	northing NAD 83 (UTM Zone 10)
3	fid	0.1		fiducial increment

4	latitude	0.1	degrees	latitude WGS 84
5	longitude	0.1	degrees	longitude WGS 84
6	flight	0.1		flight number
7	date	0.1		flight date (yyyy/mm/dd)
8	altrad_bird	0.1	m	calculated bird height above surface from radar altimeter
9	altlas_bird	0.1	m	measured bird height above surface from laser altimeter
10	gpsz	0.1	m	bird height above spheroid
11	dtm	0.1	m	digital terrain model (above WGS 84 datum)
12	diurnal_filt	1.0	nT	measured diurnal ground magnetic intensity
13	diurnal_cor	0.1	nT	diurnal correction - base removed
14	mag_raw	0.1	nT	total magnetic field - spike rejected
15	mag_lag	0.1	nT	total magnetic field - corrected for lag
16	mag_diu	0.1	nT	total magnetic field - diurnal variation removed
17	igrf	0.1	nT	international geomagnetic reference field
18	mag_rmi	0.1	nT	residual magnetic intensity - final
19	cpi900_filt	0.1	ppm	coplanar inphase 900 Hz - unlevelled
20	cpq900_filt	0.1	ppm	coplanar quadrature 900 Hz - unlevelled
21	cxi1000_filt	0.1	ppm	coaxial inphase 1000 Hz - unlevelled
22	cxq1000_filt	0.1	ppm	coaxial quadrature 1000 Hz - unlevelled
23	cxi5500_filt	0.1	ppm	coaxial inphase 5500 Hz - unlevelled
24	cxq5500_filt	0.1	ppm	coaxial quadrature 5500 Hz -unlevelled
25	cpi7200_filt	0.1	ppm	coplanar inphase 7200 Hz - unlevelled
26	cpq7200_filt	0.1	ppm	coplanar quadrature 7200 Hz -unlevelled
27	cpi56k_filt	0.1	ppm	coplanar inphase 56 kHz - unlevelled
28	cpq56k_filt	0.1	ppm	coplanar quadrature 56 kHz - unlevelled
29	cpi900	0.1	ppm	coplanar inphase 900 Hz
30	cpq900	0.1	ppm	coplanar quadrature 900 Hz
31	cxi1000	0.1	ppm	coaxial inphase 1000 Hz
32	cxq1000	0.1	ppm	coaxial quadrature 1000 Hz
33	cxi5500	0.1	ppm	coaxial inphase 5500 Hz
34	cxq5500	0.1	ppm	coaxial quadrature 5500 Hz
35	cpi7200	0.1	ppm	coplanar inphase 7200 Hz
36	cpq7200	0.1	ppm	coplanar quadrature 7200 Hz
37	cpi56k	0.1	ppm	coplanar inphase 56 kHz
38	cpq56k	0.1	ppm	coplanar quadrature 56 kHz
39	res900	0.1	ohm·m	apparent resistivity - 900 Hz
40	res7200	0.1	ohm·m	apparent resistivity - 7200Hz
41	res56k	0.1	ohm·m	apparent resistivity - 56 kHz
42	dep900	0.1	m	apparent depth - 900 Hz
43	dep7200	0.1	m	apparent depth - 7200 Hz
44	dep56k	0.1	m	apparent depth - 56 kHz
45	difi	0.1		difference channel based on cxi5500/cpi7200
46	difq	0.1		difference channel based on cxq5500/cpq7200
47	cppl	0.1		coplanar powerline monitor
48	cxsp	0.1		coaxial spherics monitor
49	cpsp	0.1		coplanar spherics monitor

- Appendix E.3 -

FUGRO ANOMALY SUMMARY

#	CHANNEL	TIME	UNITS	DESCRIPTION
1	Easting	0.10	m	easting NAD83 (Zone 10N)
2	Northing	0.10	m	northing NAD83 (Zone 10N)
3	FID	1.00		Synchronization Counter
4	FLT	0.10		Flight
5	MHOS	0.10	siemens	Conductance (see report for model used)
6	DEPTH	0.10	m	Depth (see report for model used)
7	MAG	0.10	nT	Mag Correlation, local amplitude
8	CXI1	0.10	ppm	Inphase Coaxial 5500 Hz, local amplitude
9	CXQ1	0.10	ppm	Quadrature Coaxial 5500 Hz, local amplitude
10	CPI1	0.10	ppm	Inphase Coplanar 7200 Hz, absolute amplitude
11	CPQ1	0.10	ppm	Quadrature Coplanar 7200 Hz, absolute amplitude
12	CPI2	0.10	ppm	Inphase Coplanar 56000 Hz, absolute amplitude
13	CPQ2	0.10	ppm	Quadrature Coplanar 56000 Hz, absolute amplitude
14	LET	0.10		Anomaly Identifier
15	SYM	0.10		Anomaly Interpretation Symbol
16	GRD	0.10		Anomaly Grade

The coordinate system for all grids and the data archive is projected as follows

Datum	NAD83
Spheroid	GRS80
Central meridian	123 West (Z10N)
False easting	500000
False northing	0
Scale factor	0.9996
Northern parallel	N/A
Base parallel	N/A
WGS84 to local conversion method	Molodensky
Delta X shift	0
Delta Y shift	0
Delta Z shift	0

If you have any problems with this archive please contact

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APPENDIX III

ABBREVIATIONS

ABBREVIATIONS USED IN THIS REPORT

Ag	- silver
asl	- above sea level
ATV	- All Terrain Vehicle
Au	- gold
BC	- British Columbia
Bethex	- Bethex Exploration Ltd.
C	- Celsius
Ca.	- circa
CA	- core axis
CIM	- Canadian Institute of Mining, Metallurgy and Petroleum
CIN	- Canadian International Minerals Incorporation.
cm	- centimeters
Cu	- copper
CSA	- Canadian Securities Administrators
CSM	- Canadian Strategic Metals Corporation
DDH	- Diamond Drilling
DL	- detection limit
E	- east
EM	- Electromagnetic
FA	- fire assay
FSR	- Forest Service Road
Fugro	- Fugro Airborne Surveys
g	- grams
GPS	- Global Positioning System
GSC	- Geological Survey of Canada
g/t	- grams per metric tonne
Ha	- hectares
Huldra	- Huldra Silver Inc.
ISO	- International Organization of Standards (for Quality Management)
ICP-ES	- Inductively Coupled Plasma - Emission Spectrometric
ICP-MS	- Inductively Coupled Plasma – Mass Spectroscopy
IP	- Induced Polarization
kg	- kilograms
km	- kilometres
km^2	- square kilometers
lbs	- pounds
m	- metres
Ma	- million years
Mag	- Magnetic
mg	- milligrams
mL	- milli-litre
mm	- millimeters
Mo	- molybdenum
MT	- million metric tonnes
N	- north
N/A	- Not Available
NE	- northeast
NI 43-101	- Canadian Security Regulators National Instrument 43-101Standards of Disclosures for Mineral Projects
Noranda	- Noranda Exploration Co., Ltd.
NW	- northwest
oz	- Troy ounces (31.1035 grams)

Pb	- lead
QA/QC	- Quality Assurance/Quality Control
QP	- Qualified Person as defined by the NI43-101 regulations
S	- south
SE	- southeast
SEM	- scanning electron microscope
SW	- southwest
T	- metric tonne (1,000 kg or 2,204.6 lbs)
tpd	- tonnes per day
tpy	- tonnes per year
tons	- imperial short ton (2,000 lbs)
US	- United States of America
UTM system	- Universal Transversal Mercator Projection
VLF-EM	- Very Low Frequency-Electromagnetic
W	- west
Zn	- zinc
>	- more than
<	- less than
±	- plus or minus
μm	- micron

APPENDIX IV

GLOSSARY OF GEOLOGICAL TERMS

Unconformably -
Unconformity -
Universal Transverse Mercator -
Veins -
Vertical Shootback Electromagnetic -
VLF-EM -
Volcanic arc -
Volcanic derived -
Volcanic rocks -
Wrench fault -
Zinkenite -

Au - gold
BC - British Columbia
C - Celsius
CA - core axis
CIN - Canadian International Minerals Inc.

Alluvium -Sediment deposited by flowing water, as in a riverbed, flood plain, or delta
Anomaly suggestive of buried mineralization
Anomalous A deviation from a normal value,
Anticline An arched fold of stratified rock from whose central axis the strata slope downward in opposite directions
Argillite A highly compacted sedimentary or slightly metamorphosed sedimentary rock consisting primarily of particles of clay or silt
Arsenopyrite A silvery grey metallic mineral consisting of a sulphide of iron and arsenic, FeAsS; a mineral commonly associated with gold mineralization
Chlorite, Chloritized A group of usually greenish, soft minerals, (Mg,Al,Fe)(Si,Al)O(OH), that break into thin, flexible, mica like sheets and are usually found in metamorphic rocks
Colluvium A loose deposit of rock debris accumulated through the action of rain wash or gravity at the base of a gently sloping cliff or slope
Conductor Term used to describe a group of anomalously high conductivity results from electromagnetic surveys, measured in units of Siemens or milli Siemens
Craton A large portion of a continental plate that has been stable or relatively immobile since the Precambrian era
Dacite A fine grained light gray volcanic rock containing a mixture of plagioclase and other crystalline minerals
Diamond Drilling Rotary drilling using diamond□set or diamond□impregnated bits, to produce a solid continuous core of rock sample
Dip The angle that a structural surface, a bedding or fault plane, makes with the horizontal, measured perpendicular to the strike of the structure
Electromagnetic Survey Measurement of the apparent conductivity or resistivity of the sub□surface by recording the response of a secondary electrical field induced by the pulsing of a current through a fixed or mobile loop
Fault A surface or zone of rock fracture along which there has been displacement
Formation A distinct layer of sedimentary rock of similar composition
Geochemical -The distribution and amounts of the chemical elements in minerals, rocks, solids, water, and the atmosphere

Geochemical Anomaly -The distribution and amounts of the chemical elements in minerals, rocks, solids, water, and the atmosphere
Geophysical The mechanical, electrical, gravitational and magnetic properties of the earth's crust
Geophysical Surveys Survey methods used primarily in the mining industry as an exploration tools, applying the methods of physics and engineering to the earth's surface
Granite A common, coarse□grained, light□colored, hard igneous rock consisting chiefly of quartz, orthoclase or microcline, and mica
Granitoid A general name give to coarse□grained, light□colored, hard igneous rocks
Granophile Refers to mineralization or mineral deposits associated with granitoid
Greywacke Any dark sandstone or grit having a matrix of clay minerals
Host Rock The rock in which a mineral or an ore body may be contained
Hydrothermal The products of the actions of heated water, such as a mineral deposit precipitated from a hot solution
Igneous Rocks that have solidified from magma
Isocline A geologic fold that has two parallel limbs
Lithostratigraphic Stratigraphy based on the physical and petrographic properties of rocks
Magnetic Survey One of the tools used by exploration geophysicists in their search for mineral□bearing ore bodies; the essential feature is the measurement of the magnetic□field intensity. Geologists and geophysicists also routinely use it to tell them where certain rock types change and to map fault patterns
Magmatism The formation of igneous rock from magma
Metamorphic, metamorphism Change in structure or composition of a rock as a result of heat and pressure
Mineral A naturally occurring inorganic crystalline material having a definite chemical composition
Mineralization A natural accumulation or concentration in rocks or soil of one or more potentially economic minerals, also the process by which minerals are introduced or concentrated in a rock
Orogenic The formation of mountain ranges by intense upward displacement of the earth's crust, usually associated with folding, thrust faulting, and other compressional processes
Phyllite A compact lustrous metamorphic rock, rich in mica, derived from a shale or other clay□rich rock
gram per tonne.
Resistor The inverse of a conductor, expressed in units of ohm metres
Rock Indurated naturally occurring mineral matter of various compositions
Schist Metamorphic rock having a foliated, or plated structure called schistosity, in which the component flaky minerals such as muscovite, chlorite, talc, biotite, and graphite are aligned and visible to the naked eye
Stockwork A mineral deposit in the form of a network of veinlets diffused in the country rock
Strike The direction or trend that a structural surface, e.g. a bedding or fault plane, takes as it intersects the horizontal
Sulphide A mineral including sulfur (S) and iron (Fe) as well as other elements
Syncline A fold in stratified rocks in which the rock layers dip inward from

both sides toward the axis.
Tectonic Relating to the forces that produce movement and deformation of the Earth's crust
Tectonostratigraphic Relating to the correlation of rock formations with each other in terms of their connection with a tectonic event
Vein A thin, sheet□like crosscutting body of hydrothermal mineralization, principally quartz
Volcanic Arc A usually arc□shaped chain of volcanoes located on the margin of the overriding plate at a convergent plate boundary

APPENDIX IV

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