

**Kariana Resources Inc.**

**43-101 COMPLIANT REPORT**

**ON THE**

**SOUTH BAIRD PROPERTY**

**RED LAKE MINING DISTRICT  
ONTARIO**

**Devon Corporation  
Garry K. Smith, P. Geo  
October 30, 2010**

## Table of Contents

	page
Summary	1
Sources of Information and Disclaimer	2
Introduction and Terms of Reference	3
Reliance on Other Experts	4
Property Description and Location	5
Summary of Option Agreement	6
Accessibility, Climate, Local Resources, Infrastructure	8
History and Previous Work	9
Geological Setting	11
Property Geology and Mineralization	14
Deposit Types and Geologic Models	17
Mineralization	25
Exploration	25
Drilling	25
Sampling Method and Approach	26
Sample Preparation, Analysis and Security	26
Data Verification	27
Adjacent Properties	28
Mineral Processing and Metallurgical Testing	29
Mineral Resources and Mineral Reserve Estimates	29
Interpretation and Conclusions	29
Recommendations	30
Budgets	31
References	31
OGS maps	33
Assessment Files Available	34
Certificate of Author	35

## List of Figures

1	Claim Map of Property	5
2	Photo of Physiography	8
3	Bedrock Geology of Ontario with Property Location	11
4	Greenstone Belts of Uchi Subprovince	12
5	Red Lake Deformation Zones with Property Location	13
6	Property Geology	16

## List of Tables

1	Listing of Claims	6
2	Recommendations: Field Surveys Budget	31

## Appendix

1	Traverses and Sample Location Maps
2	Rock Analysis and Certificates

## **SUMMARY**

The South Baird property, North-western Ontario, is located in Baird and Heyson Townships. It is hosted within Confederation assemblage rocks immediately south of the Balmer – Confederation unconformity in the western portion of the Red Lake greenstone belt. There are three main exploration targets of interest on the property: the westward extension of the prolific Madsen Mine Trend, the New Faulkenham Mine Structure Trend, and the base-metal massive sulphide VMS Zone. These targets do not outcrop on surface and as such require “blind” or “buried” target exploration methods. The author believes that new surface exploration of these targets is warranted.

The Red Lake greenstone belt has produced approximately 20 million ounces of gold from 1930 to present. Two mines are currently in production: the Campbell mine which has been in continuous production since 1949; and the Red Lake mine. The High Grade Zone at the Red Lake mine has returned diamond drill intersections of up to 17.5 ounces gold per ton across 16.4 feet (Hinz et al. 2000).

The Madsen Mine Trend hosts the past-producing Madsen gold deposit which is located 2 kilometres north of the South Baird property. It is interpreted by Dubé to be a high temperature gold deposit similar to gold skarns in mafic metavolcanic rocks (Dubé et al. 2000). The Madsen deposit can be classified as hypozonal and may have formed at temperatures and pressures in the range 400 to 650°C and 3 to 5 kbar (Gebre-Mariam, Hagemann and Groves 1995).

The Red Lake greenstone belt comprises 6 distinct supracrustal assemblages deposited over a span of about 300 million years and affected by regional poly-phase deformation, multiple metamorphic events and three episodes of granitoid emplacement. The Red Lake belt has been previously described (Stott and Corfu 1991) as a collage of allochthonous assemblages juxtaposed along fault boundaries within larger deformation zones (Andrews et al. 1986). However, Sanborn-Barrie et al. (2000) have more recently identified a major unconformity between the Mesoarchean Balmer assemblage and the Neoproterozoic Confederation assemblage. The majority of significant gold deposits in the Red Lake belt occur within the Mesoarchean Balmer assemblage. The Campbell and Goldcorp mines and the past-producing Madsen mine are enclosed within contact metamorphosed amphibolite facies host rocks.

The South Baird claims are held in good standing by Kariana Resources Inc., a company incorporated pursuant to the laws of the Province of British Columbia with an office for mailing at Suite 1980, 1075 West Georgia Street, Vancouver, BC, V6E 3C9. The claims are located in Baird Township (claim sheet G-3739) and Heyson Township (claim sheet G-3736). The N.T.S. location is 52K13NW and 52N04SW.

Historic work on the South Baird Property by previous workers has confirmed the presence of potentially significant gold, silver and copper mineralization associated within favourable geological settings.

The western portion of the property is well positioned along the postulated westward strike extension of the Madsen Mine Trend which hosts a number of economic gold mines. Previous workers have confirmed that the New Faulkenham Mine Structure Trend also strikes onto the property and is known to host gold mineralization.

The presence of copper-gold sulphide mineralization in a possible stratigraphic volcanogenic massive sulphide (VMS) setting has been confirmed in shallow drilling by Selco and United Bolero. There is a VMS style target for both precious and base metals hosted within the Confederation Assemblage in the central portion of the property.

The author therefore concludes that priority exploration targets can be identified as:

1. Confederation Assemblage VMS copper-gold mineralization identified by Selco (1976) and United Bolero (2006) on claim 1244620 is postulated to represent a stratigraphic volcanogenic massive sulphide mineralization horizon. An intrusive unit, called a diorite, a gabbro or a hornblendite, along the eastern property boundary is believed by some workers to represent a synvolcanic intrusive related to the VMS mineralization. This VMS horizon has only been tested by a few shallow drill holes over a short strike length.
2. The westward strike extension of the Madsen Mine Trend (Flat Lake – Howey Bay Deformation Zone) is projected to cross the north-west portion of the property on claim 1244608. Only one fence of shallow drill holes has tested this target.
3. Gold-bearing quartz veins reported by Rogard Red Lake Mines (1946) on claim 1244620 were not located during the property visit. These gold veins may be related to the eastern extension of the New Faulkenham Mine Structure and this target has not been previously drill tested.

The author recommends a budget of \$300,000 for 15 kilometres of cut line grids to be located over the 3 target areas above, multi-element soil geochemistry surveys like MMI-M: the multi-element mobile metal ion method, and 1,000 metres of diamond drilling. The combination of responses for the primary target minerals gold, copper and zinc, when used in combination with the responses for the alteration signatures noted in the conceptual exploration models under the section DEPOSIT MODELS, could greatly assist in potential drill-hole targeting.

### **Sources of Information and Disclaimer**

This report is based on a property visit by the author and information available in the public domain publications of the Geological Survey of Canada (GSC), the Ontario Geological Survey (OGS), and public Assessment Work filed with, and maintained by, the Ontario Ministry of Natural Resources. These public reports, listed in the History and References sections of this report, were for the most part, written prior to the implementation of the standards relating to National Instrument 43-101. The historical work referenced in this report cannot be field-verified by the author, and therefore cannot be relied upon. However, as most of the historic body of work was prepared by persons holding post-secondary degrees in geology or related fields, their reports form a valuable contribution to the development of the geological setting of the Red Lake area.

The author, through 30 years of geological experience in the region and recent site visits, has verified the current geological conceptualizations presented by Ontario Government Geologists presented in this report.

## **INTRODUCTION AND TERMS OF REFERENCE**

At the request of Kariana Resources Inc., a company incorporated pursuant to the laws of the Province of British Columbia with an office for mailing at Suite 1980, 1075 West Georgia Street, Vancouver, BC, V6E 3C9 (Kariana), Devon Corporation of Woodlawn, Ontario (Devon) has prepared this report on Kariana's South Baird Property as a supporting document for their prospectus that will be submitted to the CNSX Canadian National Stock Exchange.

Devon Corporation of Woodlawn, Ontario was contracted by Kariana to author an independent 43-101 Technical Report on their South Baird Property. Devon Corporation holds a Certificate of Authorization from the Association of Professional Geoscientists of Ontario (APGO) to provide these services and the author, Garry K Smith, P.Geo is also a registered member of the APGO and meets the requirements of a Qualified Person under NI 43-101 with 25 years continuous practice experience in the Red Lake area.

The author conducted a property visit on Oct. 1, 2008 and again on June 18, 2009 in support of work performed for previous optionees. From June 24 to July 12, 2010 the author collected 14 representative type rock samples in support of an assessment work program for a previous optionee. A property visit in support of this 43-101 technical report was conducted on October 27 and 28, 2010.

There are no known outcroppings on the property of the postulated westward extension of the Madsen Mine Trend nor the Selco drill intersected VMS zone, nor was there any core found on the property. As such, no significantly mineralized rocks could be found or sampled. The following report is based on the author's personal property visit, published Ontario Geological reports and maps, and a review of all available historic assessment reports on the property.

The South Baird Property is underlain by Archean rocks of the Red Lake greenstone belt of the Uchi sub-province. The Red Lake Belt consists of mafic to felsic metavolcanic rocks intruded by mafic to felsic stocks, dykes and sills. Metamorphic grade is generally greenschist facies to amphibolite facies near the contacts with granitoid stocks.

A significant feature on the property is the presence of the inferred extension of the Flat Lake - Howey Bay Deformation Zone that has been traced to the north property boundary. This Madsen Mine Trend is considered an important host to gold mineralization at the past producing Madsen and Starrat-Olsen Mines.

## **RELIANCE ON OTHER EXPERTS**

The author is not a qualified person for the purpose of commenting on certain corporate legal matters and therefore includes the following disclaimer of responsibility.

With regard to:

Option Agreement between Kariana Resources Inc. and Perry English / Rubicon Minerals,  
dated Sept. 21, 2010

**The author has reviewed, but does not accept responsibility for the legal correctness of the Option Agreement noted above.**

However, it is the author's opinion that the document in question would appear to demonstrate clear title provided that the terms of the Option Agreement are met by Kariana Resources Inc.

**The author has reviewed, but does not accept responsibility for the legal correctness of staked claims listed in the Option Agreement noted above.**

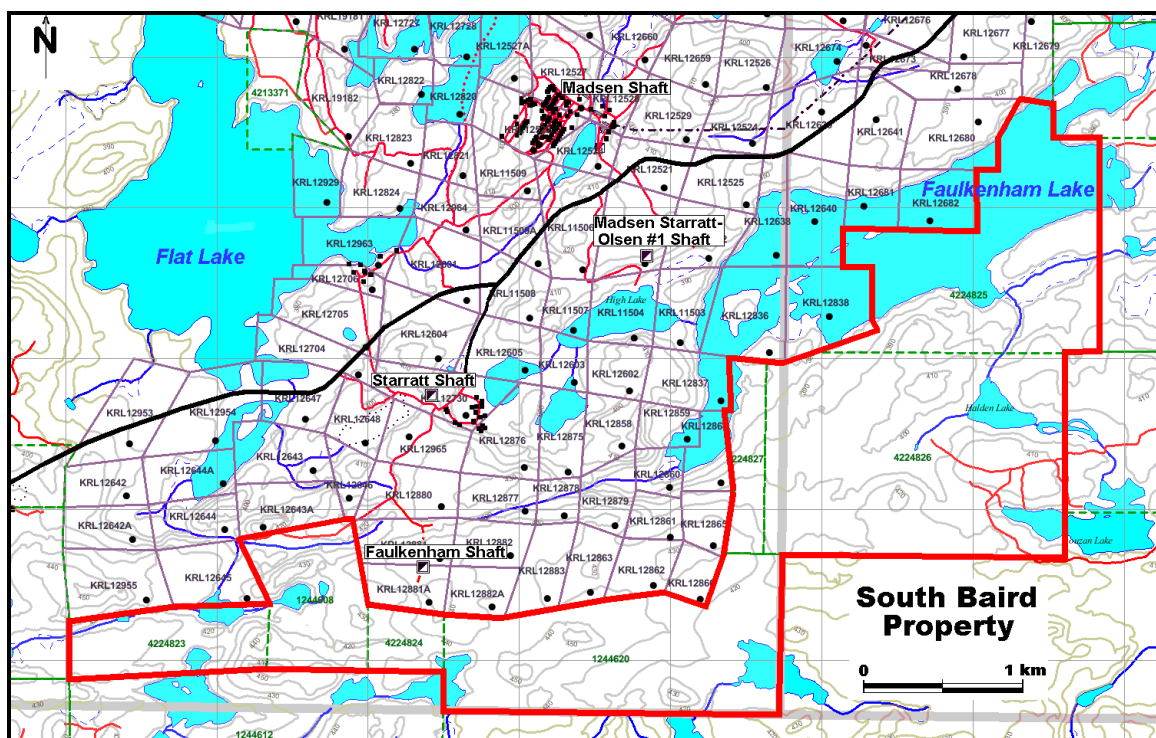
However, it is standard industry practice to verify the valid status of the claims comprising an Option Agreement by reviewing individual claim abstracts on the Ontario Ministry of Northern Development and Mines (MNDM) Mining Claims Information (MCI) Web Site. This has been done by the author and the claims appear valid, in good standing, and as described in the Option Agreement. However, the MCI web-site includes the following disclaimer:

*This Site and its Content is offered by the Province of Ontario's Ministry of Northern Development and Mines (MNDM) as a public service, on an "as-is" and "as-available" basis. The Content may change without notice. You are solely responsible for your use of the Site and the Content. You should not rely on the Content for legal advice nor as authoritative in your particular circumstances. Users should verify the accuracy and applicability of any Content before acting on it. The official version of legislation (statutes, regulations, etc.) prevails over any summary or other reference that may be made to the same legislation on this Site. MNDM does not guarantee, or make any warranty express or implied, that (i) the Content is current, accurate, complete or reliable; or (ii) the Site will be available without interruption, error or omission, that errors will be corrected or that the Site, the servers, the products, etc. are free from viruses or other harmful components. MNDM is not responsible for any damage, however caused, which results directly or indirectly from your use of this Site or the Content. MNDM assumes no legal liability or responsibility for this Site or the Content whatsoever.*

## **PROPERTY DESCRIPTION AND LOCATION**

The South Baird Property (Figure 1) consists of 7 staked and unpatented mineral claims, totalling 2,120 acres on 53 claim units in Baird and Heyson Townships, Red Lake Mining Division, Red Lake, Ontario (Table 1). Neither these claims nor the property boundary have been surveyed and are presented in this report as they appear on the Ontario Ministry of Northern Development and Mines (MNDM) Mining Claims Information (MCI) Web Site.

The property is located in the Red Lake Greenstone belt, some 8 kilometres west of the town of Red Lake. The Baird Township claim sheet is G-3739 and Heyson Township claim sheet is G-3736. The N.T.S. designators are 52K1 3NW and 52N04SW



**Figure 1**

The 7 staked mineral claims are in good standing until July 15-25, 2011 at which time \$21,200 in work assessment credits will be required to be filed. (Table 1) A work report has been filed and is pending acceptance for 5 claims for which work was due to be filed by September 25, 2010.

**RED LAKE Mining Division - 129617 - ENGLISH, PERRY VERN**

Township	Claim	Units	Acres	Recorded	Due Date	Required	Applied	Reserve	Bank
BAIRD	1244608	4	160	2002-Jul-29	2012-Jul-29	\$1,600	\$12,800	\$106,646	\$0
BAIRD	1244620	11	440	2002-Jul-15	2012-Jul-15	\$4,400	\$35,200	\$8,019	\$0
BAIRD	4224823	4	160	2008-Jul-25	2010-Sep-25	\$1,600	\$0	\$0	\$0
BAIRD	4224824	2	80	2008-Jul-25	2010-Sep-25	\$800	\$0	\$0	\$0
HEYSON	4224825	12	480	2008-Jul-25	2010-Sep-25	\$4,800	\$0	\$0	\$0
HEYSON	4224826	16	640	2008-Jul-25	2010-Sep-25	\$6,400	\$0	\$0	\$0
BAIRD	4224827	4	160	2008-Jul-25	2010-Sep-25	\$1,600	\$0	\$0	\$0

**Table 1**

The north-western portion of the property can be accessed via a bush road to the west from the old Starratt townsite. A secondary bush road branches to the south-west from Starratt through the northern portion of 1244508. Another branch also trends to the south to the Faulkenham Shaft site, but this is no longer passable due to ditches and swampy sections. Access to the eastern portion of the property is from Faulkenham Lake only.

Kariana can acquire a 100% interest in the South Baird Property by maintaining the claims in good standing by applying the requisite assessment work for the duration of the Option. The first year's work expenditure commitment requires performing a minimum of \$21,200 in assessment qualifiable expenses on the property on or before July 15-19, 2011. Kariana is also required to make \$112,000 in cash payments over 4 years as noted below. The vendor will retain a 2% net smelter return royalty (NSR) as noted below.

An Option Agreement provided by the Company and dated September 21, 2010 names PERRY ENGLISH for RUBICON MINERALS CORP. of PO Box 414, Souris, Manitoba R0K 2C0 as the "Optionor" and Kariana Resources Inc., a company incorporated pursuant to the laws of the Province of British Columbia with an office for mailing at Suite 1980, 1075 West Georgia Street, Vancouver, BC, V6E 3C9 as the "Optionee".

**Summary of Option Agreement**

In order to maintain in force the working right and option granted herein and to exercise the Option, the Optionee must, upon completion of due diligence with respect to title and environmental condition of the Property, the results of which investigation shall be satisfactory to the Optionee, acting reasonably (and approval of the applicable Exchange and applicable securities regulators if the Optionee is a public company):

- (a) issue the Shares in the name of the Optionor within 30 days of the completion of the initial public offering of common shares of the Company on the Exchange ("**IPO**");
- (b) make cash payments to the Optionor in the aggregate of \$112,000, all to occur in accordance with the following schedule:



<b>Due Dates</b>	<b>Shares</b>	<b>Cash Payments</b>
Paid upon signing of this Agreement	-	<b>\$12,000</b>
Paid on the first anniversary from signing this Agreement	-	<b>\$15,000</b>
Paid on the second anniversary from signing this Agreement	-	<b>\$20,000</b>
Paid on the third anniversary from signing this Agreement	-	<b>\$30,000</b>
Paid on the fourth anniversary from signing this Agreement	-	<b>\$35,000</b>
Issue within 30 days of completion of IPO	<b>100,000</b>	-
<b>Total:</b>	<b>100,000</b>	<b>\$112,000</b>

During the Option Period the Optionee shall be the operator of the Property and shall maintain in good standing those mineral claims comprising the Property by the doing and filing of assessment work or the making of payments in lieu thereof, by the payment of taxes and rentals, and the performance of all other actions which may be necessary in that regard and in order to keep such mineral claims free and clear of all liens and other charges arising from the Optionee's activities thereon except those at the time contested in good faith by the Optionee.

If the Option is terminated for reason other than its exercise, the Optionee shall leave those mining claims comprising the Property in good standing for a period of at least 12 months from the termination date.

### **Royalty**

After the Commencement of Commercial Production on any part of the Property, the Optionee shall pay the Royalty which shall be the amount which is equal to two percent (2%) of the Net Smelter Returns, calculated and payable in accordance with Schedule "B" hereto. The Optionee may purchase 50% of the Royalty (equivalent to 1 % of the initial 2% Net Smelter Returns) from the Optionor at any time for \$1,000,000 upon or prior to the Commencement of Commercial Production.

There are no known environmental liabilities or public hazards associated with the property, and work permits are not required at this time in the Province of Ontario, to perform the work recommended by this report.

## **ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY**

Red Lake is located in northwestern Ontario, 140 kilometres north-northeast of Kenora. The Municipality of Red Lake is serviced by Highway 105, which runs 273 kilometres north from the Trans Canada Highway 17 at Vermillion Bay, Ontario and by scheduled airline and bus service from Kenora, Winnipeg and Thunder Bay. There is a population approaching 5,000 made up of six distinct communities: Red Lake, Balmertown, Cochenour, Madsen, McKenzie Island and Starratt Olsen. Basic exploration services and supplies are available in Red Lake.

The South Baird Property is located in Baird and Heyson Townships, Red Lake Mining Division, approximately 8 km west of Red Lake, Ontario. The property can partially be reached via a bush road from the old Starrat Mine and workings, at the west end of the Starratt townsite. (Figure 2)



**Figure 2**

The topography and vegetation of the property consist generally of low, rolling hills less than 50 metres high with occasional steep ridges and valleys covered by black spruce, jackpine, birch and poplar, with several small lakes and minor swamps. The area is covered by glacial till with outcrop

common along the prominent ridges. (Figure 2)

Northwestern Ontario has a continental climate consisting of warm to hot summers ranging from 20°C to 40°C and cold winters ranging from -15°C to -40°C with frequent snowfalls and moderate to heavy snowfall. Ice conditions necessary for the safe movement of drilling equipment are usually available during late January to late March.

There is no known mineral deposit of economic significance on the South Baird property. However, the author believes that the property has, should they be required, a sufficiency of surface rights for mining operations, availability and sources of power, water, mining personnel, potential tailings storage areas, potential waste disposal areas, heap leach pad areas and potential processing plant sites.

## **HISTORY OF WORK**

Public work assessment records indicate that a number of companies have explored portions of the South Baird Property dating back to the 1940's. There is no known production from the property, nor any known mineral resources or reserves.

1945: Rogard Mines explored the eastern extension of the New Faulkenham Mine vein structure. Values up to 0.42 opt gold were reported from samples in a series of east to south-east trending quartz veins on claim 1244620.

1951: Childs Red Lake Gold Mines drilled 9 holes totalling 280 metres on claim 1244608 to test the projected west extension of the New Faulkenham Mine vein structure. Pyrrhotite and minor pyrite were noted but no assays were reported.

1963: Dickenson Mines Ltd. drilled 1 hole on what is now claim 1244608 to test the projected west extension of the New Faulkenham Mine vein structure. No assays were reported.

1976: Selco Mining conducted ground magnetic and electromagnetic surveys on claim 1244620. A strongly conductive and magnetic horizon was identified and tested by two drill holes totalling 184 metres. At the contact between mafic volcanics to the north, and felsic tuffs to the south, Hole 220-1-1 assayed 2.1% copper, 0.08 opt gold, 0.09 opt silver, and 0.01% zinc over 3.5 metres. Similar but lower value mineralization of 1.9% copper and 0.03 opt gold over 1.9 metres was encountered in Hole 220-1-2.

1989: Grid Data North conducted an airborne magnetic and VLF-EM survey and identified several geophysical anomalies.

1997: Canadian Mining International Ltd conducted linecutting and magnetometer plus VLF electromagnetic surveys over the central part of the South Baird Property and identified a number of geophysical anomalies.

1999-2001: Ansil Resources Ltd conducted limited prospecting and a single line of MMI soil geochemistry. 2 holes were drilled on claim 1244608 to test the projected west extension of the New Faulkenham Mine Structure. No assays were reported.

2003-2006: Solitaire Minerals - United Bolero Development Corp. Interpretation of their March 2004 Gravity Survey suggested that a number of NW striking faults could be responsible for the termination of gold mineralization of the Starratt-Olsen and Faulkenham Mine trends. It was further postulated that these faults could also be mineralized. 10 drill holes totaling 1,093 metres tested the Faulkenham Mine trend (8 holes) and the VMS copper target (2 holes) previously intersected by the 1976 Selco drilling.

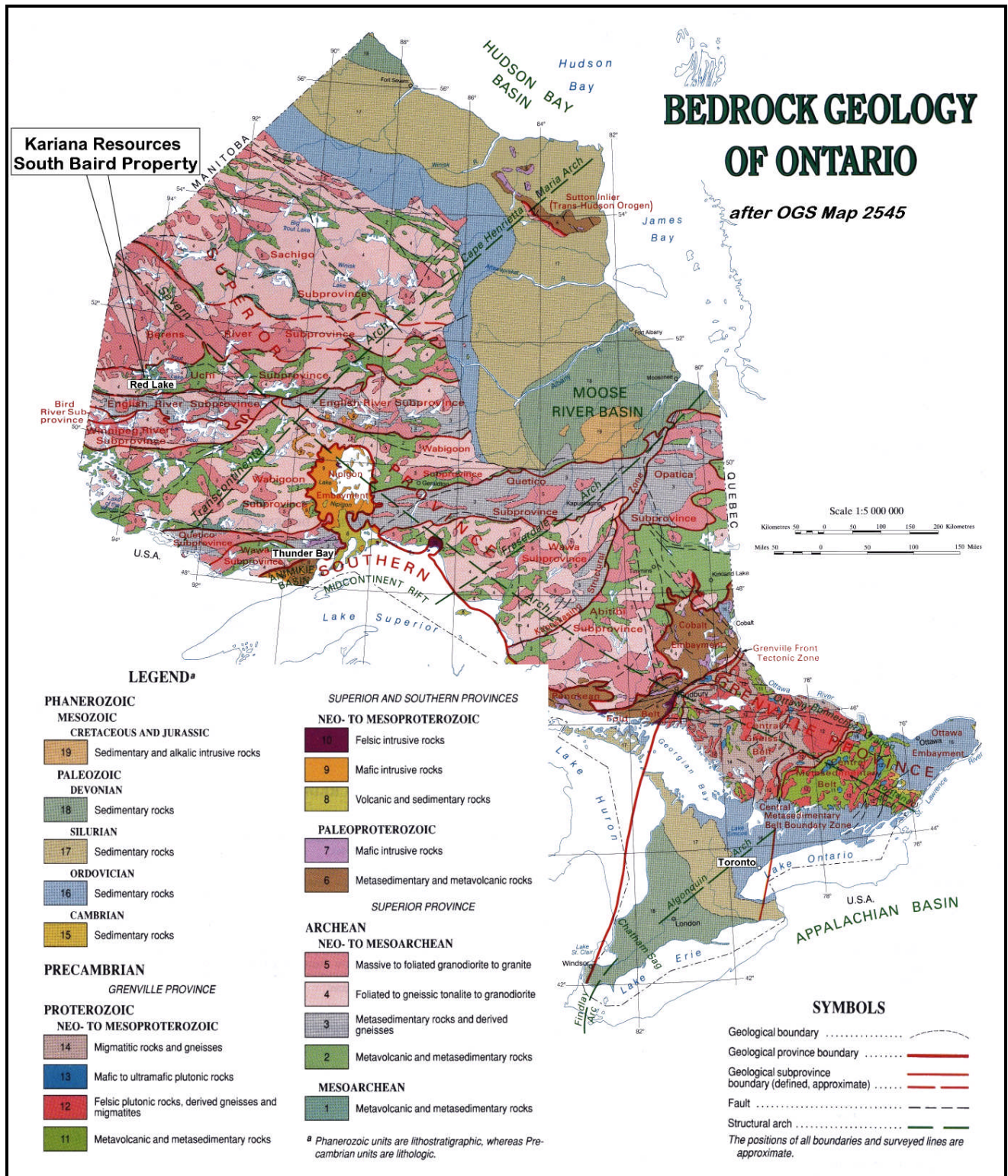
SB-06-03, the northern-most hole into the Faulkenham Mine trend, intersected 6 metres of 0.3 grams gold at 43 metres depth and 2.5 metres of 0.5 grams gold at 80.5 metres depth. These results imply that the trend is not terminated, or significantly off-set, as the Gravity survey had previously postulated.

SB-06-09 and -10 targeted the Selco VMS target. SB-06-09 intersected 10.32 metres of 0.3% copper and 0.3 grams gold (including 1.4% copper and 1.4 grams gold over 1.52 metres) at a depth of 36 metres. SB-06-10 intersected 1.5 metres of 0.4% copper and 0.3 grams gold at a depth of 78.7 metres.

2008-2010: Glory Gold Ltd conducted a limited rock sampling program across the property from June 24 to July 12, 2010. No outcroppings of the postulated westward extension of the Madsen Mine Trend, nor the Selco drill intersected VMS zone were located, nor was there any core found on the property. No significantly mineralized rocks were reported. Type rocks were collected for general background litho-geochemistry data and for assessment purposes.



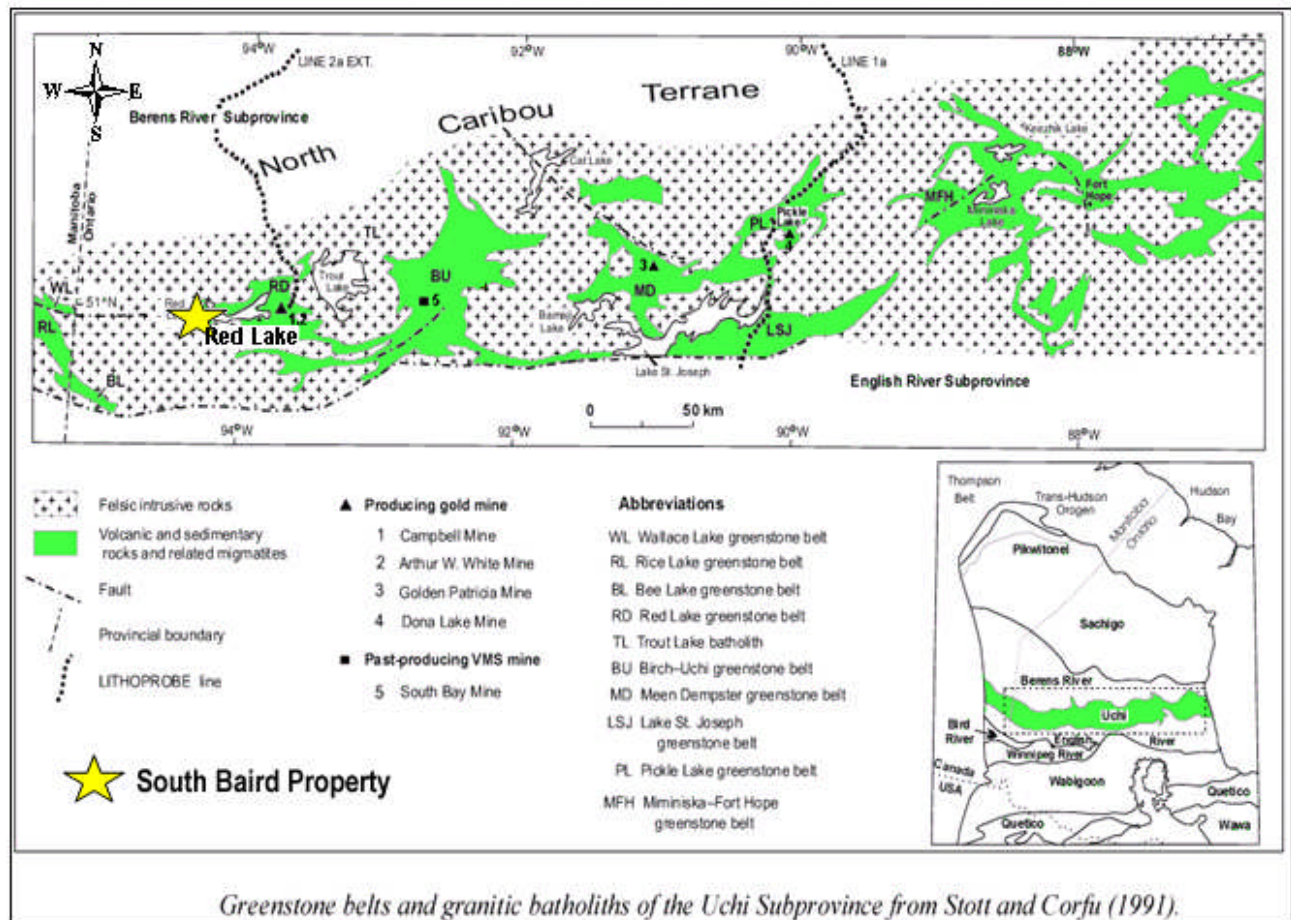
**GEOLOGICAL SETTING**



**Figure 3**

The Northwestern Superior Province (Figure 3) includes the Uchi Subprovince, (Figure 4)

which is made up of a number of assemblages. These assemblages are in turn made up of local belts. The three belts of the Birch-Uchi portion of the Uchi Subprovince were historically considered to be 3 successive volcanic cycles (Thurston 1985). Recent structural, geochemical, and geochronological research suggests that the assemblages may have been juxtaposed tectonically (Williams *et al.* 1991). The Uchi Subprovince is bounded to the north by the Berens River and Sachigo Subprovinces and to the south by the English River Subprovince.



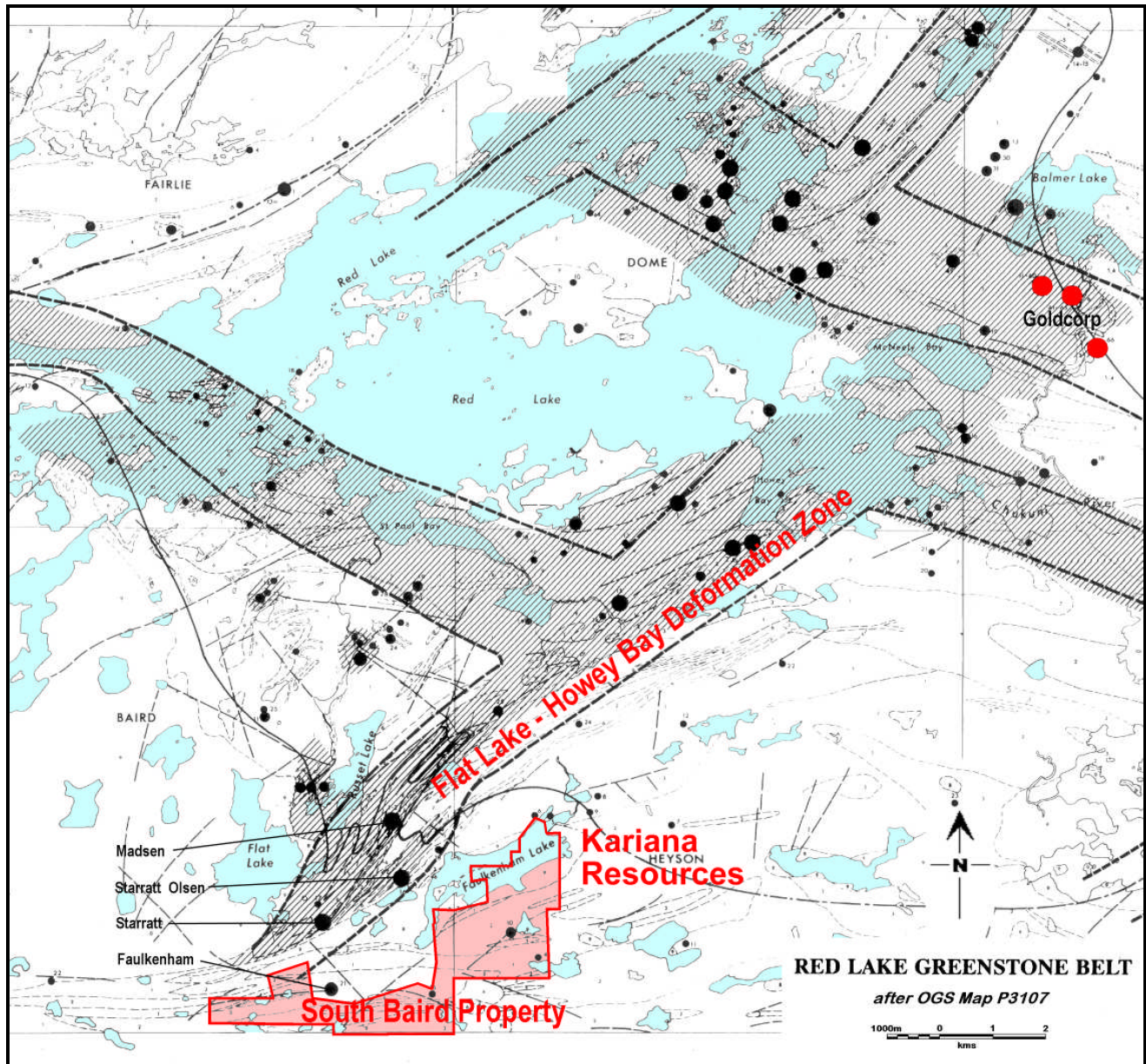
**Figure 4**

The Red Lake Greenstone Belt (RD in Figure 4) is characterized by thick sequences of Balmer assemblage basaltic flows with a minor komatiitic component overlain by Confederation assemblage mafic to felsic volcanic cycles of predominantly calc-alkaline affinity. The Confederation assemblage is dominated by basaltic to dacitic and rhyolitic bimodal volcanism.

The supracrustal rocks in the Red Lake Greenstone Belt range in age from 2992 Ma in the Balmer assemblage to 2739 Ma in the Confederation assemblage. Late granitic to dioritic intrusives, such as the Killala-Baird Batholith and the Dome Stock, have been dated at 2704 to 2718 Ma, respectively. Dioritic dikes that cut the ore zones in the Austin and McVeigh ‘tuffs’ have been dated at 2699 Ma which provides a minimum age for the gold mineralization in the area (Corfu and Andrews, 1987).



M. Sanborn-Barrie et al (2000) describes the Red Lake Belt as a 300 Ma of episodic volcanism, sedimentation, deformation and mineralization. The Balmer assemblage, host to current and past-producing gold mines, consists of tholeiitic and komatiitic lava flows intercalated with 2.98-2.96 Ga felsic volcanic, clastic, and chemical sedimentary rocks. The Confederation assemblage rests unconformably on the Balmer, and consists of basal conglomerate, 2.74 Ga FIII-type rhyolite and tholeiitic basalt with volcanogenic-massive-sulphide (VMS)-style alteration-mineralization, and younger 2.73 Ga calc-alkaline pyroclastic rocks. Polyphase deformation involved pre-Confederation tilting and at least two episodes of post-Confederation deformation folds and fabrics of low to moderate finite strain.



**Figure 5**

All of the significant gold deposits in the Red Lake camp lie within conspicuous zones of strain -

deformation. (Colvine et al, 1988). (Figure 5) The Red Lake Greenstone Belt hosts the Flat Lake-Howey Bay Deformation Zone, the Cochenour-Gullrock Lake Deformation Zone, the East Bay Deformation Zone and the Pipestone Bay-St. Pauls Bay Deformation Zone. The deformation zones are characterized by both ductile and brittle deformation with carbonate and quartz-carbonate alteration.

Adjoining the South Baird property, to the north, is the Claude Resources Madsen Property which includes approximately ten kilometres of favorable stratigraphy along the Flat Lake – Howey Bay Deformation Zone trend that hosts three past producing mines: the Madsen, Starratt-Olsen and Buffalo.

Pirie (1981) classifies gold deposits in the camp into three main categories: mafic-hosted (Campbell, Dickenson), felsic intrusive-hosted (Cochenour, Mackenzie) and stratabound (Madsen, Starratt-Olsen). In the vicinity of the Madsen mine, the lithologies can be regionally grouped into two major sequences (Durocher, 1983): a lower Balmer tholeiitic-komatiitic sequence and an upper Confederation calc-alkaline sequence.

In 1998, Claude Resources Incorporated acquired Madsen Gold Corp. with lands located immediately north of the South Baird property. Their property produced 2.6 million ounces of gold before being closed in 1976. Prior to Placer Dome terminating their JV with Claude Resources on the Madsen Mine JV project, drilling by Placer Dome discovered significant new gold mineralization approximately 300 metres wide and 1,000 metres in strike. Gold intercepts were reported from folded quartz-iron carbonate-tourmaline veins and from carbonate veinlets and coliform quartz veins hosted in metabasalts.

Placer Dome's exploration model targeted high-grade gold-bearing quartz structures associated with a mafic-ultramafic contact. B. Dube, et al (2000) describe the gold mineralization at the Madsen Mine as follows: *Madsen is a disseminated stratabound gold deposit of replacement style located at the deformed unconformity between the Balmer and Confederation assemblages. The deposit comprises two main ore horizons (Austin and McVeigh), hosted by altered mafic volcanoclastic rocks and by (massive and pillowed) basalt flows of the Balmer assemblage metamorphosed at amphibolite grade. A banded-laminated inner core of alteration hosts the ore and is surrounded by an aluminum-rich outer alteration. D1 is characterized by a bedding-parallel foliation and D2, the main phase, is characterized by an S2 foliation, local sinistral shearing, and F2 folds. The alteration and mineralization have been deformed by the D2 structures. The deposit is early or Pre-D2 and was formed between 2744 +/- 1 Ma, the age of a quartz-feldspar porphyry, and 2699 +/-4, the age of a post-ore dyke. Madsen shares some features analogous with higher temperature (400 to 600°C) gold deposit, as well as gold skarn hosted by mafic rocks.*

## **PROPERTY GEOLOGY**

The Confederation assemblage in Heyson and Baird townships consists of generally east-northeast-striking, steeply south-dipping, southeast-facing stratigraphy. The dominant fabric is an east-striking, steeply-dipping penetrative foliation. Deformation is relatively weak with large areas of relatively undeformed rocks transected by narrow, east-striking shear zones. East-trending, moderately west-plunging F2 folds with an associated east-striking axial planar foliation are situated in the area



northeast of Killoran Lake.

The lowermost portion of the Confederation assemblage is exposed in outcrops at Madsen; at Faulkenham, Snib and Killoran lakes; and immediately south of the highway 105/125 intersection. It is dominated by a succession of tholeiitic felsic metavolcanic rocks consisting of massive and lobe-hyaloclastite rhyolite flows; fine felsic tuff; abundant quartz-feldspar crystal tuff with euhedral to broken crystal shards, pumice and lithic clasts; and coarse tuff breccia and pyroclastic breccia. The felsic metavolcanic rocks are interlayered with thinly bedded wacke and siltstone and massive, tholeiitic, pillowed and amygdaloidal mafic metavolcanic flows. A possible conglomerate is situated within the Confederation assemblage about 25 metres above the Confederation-Balmer assemblage boundary. The conglomerate is clast-supported and strongly garnetiferous with abundant, subrounded to subangular, felsic and mafic metavolcanic clasts; felsic clasts containing abundant andalusite; and some siltstone clasts. The conglomerate is overlain and underlain by a pumice-bearing, felsic, quartz-feldspar crystal tuff.

The South Baird Property is predominantly underlain by rocks of the Confederation assemblage. Stratigraphy strikes westerly and dips sub-vertically. Supracrustal rocks include a sequence of felsic to intermediate volcanic flows, sills and dikes, and mafic volcanic flows (Figure 6).

These supracrustal rocks have been intruded, to the south, and along the eastern property margin by a variety of narrow, conformable felsic to intermediate sills and dykes (with a possible mafic-ultramafic plug along the eastern margin (Selco, 1976)).

A major NE trending deformation zone known as the Flat Lake – Howey Bay Deformation Zone, or Madsen Mine Trend, has been traced to the northern boundary of the property. This structure hosts the Madsen Mine (2.45 million ounces of gold production) and the past producing Starrat-Olsen Mine (163, 990 ounces).

The New Faulkenham Mine (abandoned) is located 350 metres east of Claim 1244608. It was sunk in to a depth of 700 feet during 1944-5. Gold mineralization is hosted by chalcopyrite, sphalerite and galena bearing quartz veining in sheared intermediate to felsic volcanics, and granite or granodiorite intrusives.

Historic work assessment records suggest that the interpreted westward strike extension of the New Faulkenham Mine Structure onto the South Baird Property has been previously drill tested at shallow depths only by Ansil Resources with two holes totalling 184 metres in 1999; Childs Red Lake Gold Mines with 9 holes totalling 280 metres in 1965; and Dickenson Mines Ltd. with 1 hole in 1963.

The interpreted eastern extension of the New Faulkenham Mine Structure onto the property was explored by Rogard Mines in 1945, who reported gold values up to 0.42 opt in grabs from a series of south-east trending quartz veins on claim 1244620. They also reported an “Iron Dike” just east of the Baird/Heyson Township Line. This appears to be coincident with a strong electromagnetic response (Selco) at the intersection of the interpreted eastern extension of the New Faulkenham Mine Structure, with a possible eastward striking volcanogenic massive sulphide (VMS) horizon bearing copper, gold and minor zinc.

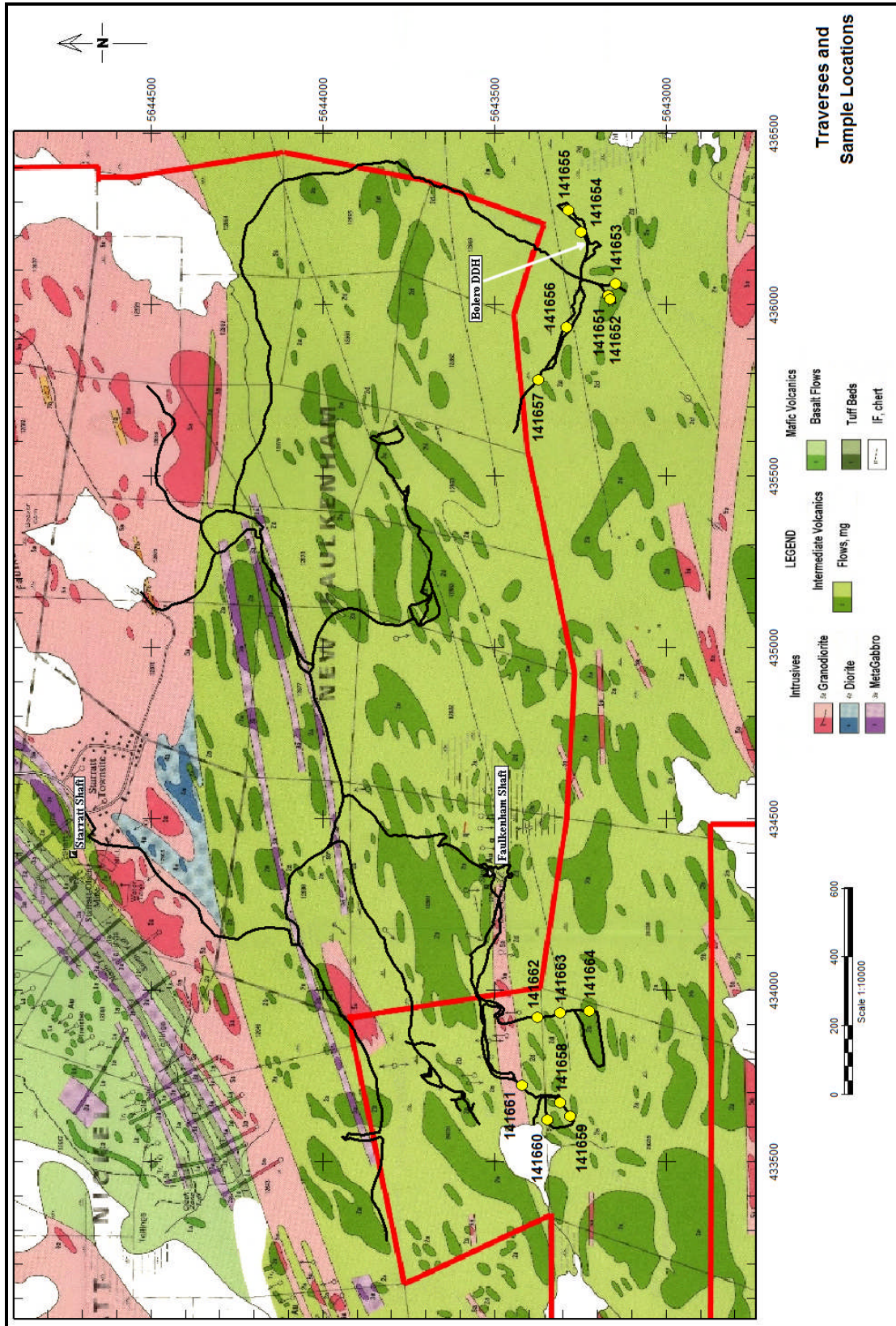


Figure 6

Selco Mining drilled 2 holes totalling 193 metres in 1976 to test the VMS horizon with coincident magnetics. Hole 220-1-1 assayed 2.1% copper, 0.08 opt gold, 0.09 opt silver, and 0.01% zinc over 3.5 metres. Similar but lower value mineralization of 1.9% copper and 0.03 opt gold over 1.9 metres was encountered in Hole 220-1-2.

Solitaire Minerals - United Bolero Development Corp. also drill tested the Faulkenham Mine trend with 8 holes and the VMS copper target with 2 holes. SB-06-03, the northern-most hole into the Faulkenham Mine Trend, intersected 6 metres of 0.3 grams gold at 43 metres depth and 2.5 metres of 0.5 grams gold at 80.5 metres depth implying that the trend is not terminated, or significantly off-set, as the Gravity survey had previously postulated. SB-06-09 and -10 intersected the Selco VMS target. SB-06-09 intersected 10.32 metres of 0.3% copper and 0.3 grams gold (including 1.4% copper and 1.4 grams gold over 1.52 metres) at a depth of 36 metres. SB-06-10 intersected 1.5 metres of 0.4% copper and 0.3 grams gold at a depth of 78.7 metres.

## **DEPOSIT TYPES and GEOLOGIC MODELS**

There are two main mineral targets known on the property: gold and VMS-style base metals. Ontario Geological Survey (OGS) personnel have generated mineral potential models oriented towards the geological environment found in Ontario. These mineral deposit models are mainly intended for use in mineral potential evaluations to classify the mineral deposits within a given area and assist in identifying which deposit types have the potential to occur in a given area.

In addition to these OGS models, recent publications (Dubé et al., 2001) have also stated the importance of carbonate veining, potassic metasomatism and polyphase deformation in the genesis of highly auriferous, silicic replacement orebodies at the High Grade Zone of the Red Lake Mine. This model is also being applied to select areas within the Red Lake, Birch-Uchi and Confederation greenstone belts.

### **Lode Gold in Quartz Veins**

This type may also be known as Mother Lode veins, greenstone gold, Archean lode gold, mesothermal gold-quartz veins, shear-hosted lode gold, low-sulphide gold-quartz veins, or just lode gold.

Archean-aged examples of lode gold deposits are: Hollinger, Dome, McIntyre and Pamour (Timmins camp); Lake Shore (Kirkland Lake camp); Campbell, Madsen (Red Lake camp); Kerr-Addison (Larder Lake camp) in Ontario, Canada; and Lamaque and Sigma (Val d'Or camp) in Quebec, Canada; Granny Smith, Kalgoorlie and Golden Mile in Western Australia; Kolar in Karnataka, India and Blanket-Vubachikwe in Zimbabwe, Africa.

Gold-bearing quartz veins and veinlets, with minor sulphides, are typically localized along major regional faults and related splays are hosted in granite-greenstone belts - mafic, ultramafic (komatiitic) and felsic volcanics, intermediate and felsic intrusive rocks, and greywacke and shale. Wallrock alteration includes elevated silica, pyrite or arsenopyrite, and sericite or muscovite within a broader carbonate alteration halo. The veins usually have sharp contacts with wallrocks and exhibit a

variety of textures, including massive, ribboned or banded, and stockworks with anastomosing gashes and dilations.

The Deposits form tabular fissure veins in more competent host lithologies, or veinlets and stringer stockworks in less competent lithologies. A system of en-echelon veins with lower grade bulk-tonnage styles often develop marginal to the veins.

Ore mineralogy can include native gold, pyrite, arsenopyrite, galena, sphalerite, chalcopyrite, pyrrhotite, telluride, scheelite, bismuth, cosalite, tetrahedrite, stibnite, molybdenite, gersdorffite, bismuthimite, or tetradymite. Gangue mineralogy can include quartz, carbonates (ferroan-dolomite, ankerite ferroan-magnesite, calcite, siderite), albite, mariposite (fuchsite), sericite, muscovite, chlorite, tourmaline, or graphite.

Alteration mineralogy is typically silicification, pyritization and potassium metasomatism within a metre adjacent to veins. Broader zones of carbonate alteration, with or without ferroan dolomite veinlets, extend up to tens of metres from the veins.

The exploration geochemical suite includes elevated values of Au, Ag, As, Sb, K, Li, Bi, W, Te and B ± (Cd, Cu, Pb, Zn and Hg) in rock and soil, Au in stream sediments.

A magnetic geophysical response might show faults as indicated by linear magnetic features. Associated target areas of alteration, however, would likely be indicated by negative magnetic anomalies due to destruction of magnetite from carbonate alteration.

These deposits are a major source of the world's gold production and account for approximately one quarter of Canada's output. They are the most prolific gold source after the ores of the Witwatersrand Basin.

The original interest in the Madsen area arose from the discovery of visible gold in a quartz vein 750 metres south-east of the present Madsen head frame at High Lake. This style of mineralization is also known as lode gold. The No. 1 Lode Vein is predominantly barren white quartz with tourmaline, minor pyrite and chalcopyrite, and visible gold.

### **Gold in Quartz-carbonate Veins**

The Madsen property to the north of the South Baird property also hosts the recently discovered high-grade, nuggety gold in quartz-carbonate veins referred to as the No. 8 Zone. This environment hosts visible gold in quartz-carbonate alteration veining within mafic-ultramafic rocks and is the current focus of exploration on the Madsen Mine property.

The No. 8 Zone is a high grade quartz-carbonate vein, hosted by talc schists that are interpreted to be altered ultramafic rocks. In terms of mineralogy, alteration and host lithologies, the No. 8 Zone is identical to the 'snowbank' veins of the Campbell Mine (Penczak and Mason, 1997). In the Campbell Mine, the snowbank veins are large banded carbonate-quartz veins formed in dilatant zones along warped fault surfaces. A similar structural model has been postulated for the No. 8 Zone.

## Stratabound Replacement Gold

Most of the mining at Madsen, however, was done in the Austin and south Austin zones, with lesser production from the McVeigh zone. These zones have been described as tuffs and account for 98% of past production. The following descriptions relate to the alteration and mineralization associated with the Austin and McVeigh tuffs. During Madsen's thirty-eight year operating history, production totaled 7,593,906 tonnes at a grade of 9.91 grams per tonne.

Horwood (1940) described the tuff mineralization as follows:

*'Ore Bodies - the orebodies are lenses of sheared tuff with sulphide mineralisation. They occur in the tuff band between porphyry dikes on the southeast or hanging-wall side and a talc schist and diorite on the northwest side. Their position appears to be related to rolls or changes in strike of the northwest contact of the quartz porphyry dike. The lenses are arranged at irregular intervals along a strike of N 31° E along or close to the contact of the porphyry dikes. They have an average dip of 70° SE.'*

*'Ore Structures – The force that produced the shear zones in the tuff is believed to have originated with the intrusion of the Faulkenham Lake granite stock. It acted as a thrust which produced a movement to the northeast on the southeast side of the zone, and in addition developed shear zones in the tuff formation on the northwest side of the porphyry dikes. These zones are unusual in that, although their long axis in plan is approximately parallel to the porphyry contact, the actual shearing in the zones is at an angle of 15 or 20 degrees. This unusual arrangement is identical with that at the Hasaga No.2 mine'*

*'The actual orebodies are lenticular masses of mineralized tuff, which plunge at an average angle of 75° E and are arranged in zones with a plunge of 48° E.'*

*'Mineralisation – Two types of mineralisation occur in the tuff formation. The first is an early barren type in which the principal metallic mineral is pyrite. The second...is the later gold-bearing type. The barren type was produced first. Much of the later shearing action occurred along or close to these relatively massive bodies to provide open spaces for the later mineralisation.'*

*The orebodies are irregular zones with variable amounts of shearing and alteration and variable quantities of pyrite, pyrrhotite, arsenopyrite, sphalerite, chalcopyrite, magnetite and gold. Small quartz stringers, commonly with a little visible gold, cut through the sulphide bodies in places.*

*The various sulphides in the ore generally occur as fine to medium sized grains disseminated throughout the mineralized zones. Pyrite is predominant in all the orebodies. Pyrrhotite, arsenopyrite or sphalerite may be the second most abundant sulphide.'*

The following excerpts from McIntosh (1948) describe the nature of the porphyry bodies and their relationship with ore bodies:

*'The rock known as 'sheared feldspar porphyry' is probably the same age as the tuff in which it occurs and is not strictly a porphyry. It is a fine-grained, light grey micaceous, schistose rock. It contains no phenocrysts. It is very thinly banded in places, contains garnets here and there, and is usually sparsely mineralized with fine magnetite and pyrite. ...Examination in thin sections shows it to be composed chiefly of recrystallized quartz with lesser amounts of muscovite, chlorite and feldspar.'*

*On the 1,100-foot level in the Austin zone, 'Considerable widths of fairly high grade ore occur on the offsets of the sheared feldspar porphyry contact. The greatest widths are obtained between the end of the sheared feldspar porphyry masses and the roll in the quartz porphyry contact.'*

Recent studies in the Red Lake camp by Dube (2000) describe the Madsen deposit as a stratabound replacement-style disseminated gold deposit. The mineralized 'tuffs' contain ore lenses characterized by two alteration facies, an outer aluminous/calc-silicate and an inner potassic. These facies correspond to Durocher's (1983) strong sodium depletion and potassic enrichment zones.

Gold values are typically associated with the inner potassic alteration zone. Both the Austin and McVeigh ore zones are composite mineralized structures with internal lenses of higher grade material surrounded by discontinuous lower grade mineralization. The Austin (and south Austin) ore zones host internal lenses that are variously assigned the titles footwall, main and hanging-wall to denote their location within the system. Individual ore lenses average a few metres in width and are characterized by a banded, laminated or convoluted aspect. In general, grade increases with increased sulphide content. Pyrite is the dominant sulphide species with subordinate pyrrhotite. Chalcopyrite and arsenopyrite occur in trace amounts. The sulphide content of the ore zones averages 8-10%, with local bands containing up to 30%. Crosscutting veinlets with elevated arsenopyrite commonly return very high assay values over narrow widths.

Work by Ferguson (1965) indicates that most of the gold occurs in the native state as minute inclusions within silicates and as coatings on sulphide minerals. The key signature is Au, Ag, As +/- Cu, Zn and Sb with a gold to silver ratio of 6:1.

The Austin and South Austin zones have an average strike length of 1000 metres including intermittent low grade to barren zones. The zones vary from 1-30 metres in width, have a shallow plunge to the south-east, and a vertical continuity to at least 1200 metres in depth. The McVeigh zone is still being explored.

## **VMS**

The Confederation assemblage underlies the Property and, in the eastern portion of the Belt, hosts the only significant VMS mine and mineral deposits in the area, the abandoned South Bay Mine and Tribute's recent Garnet Lake discovery.

Base-metal massive sulphide deposits are hosted by various volcanic and/or sedimentary rock types. These have been divided into volcanic-associated (VMS), Cyprus-type, Besshi-type, and sedimentary exhalite (Sedex) deposit types. These main types are based upon differences in the host rocks, depositional environments, tectonic settings and some deposit characteristics. They also share many aspects in common



and may represent a spectrum of deposit types from VMS to Cyprus-type to Besshi-type to Sedex, from volcanic-dominated to sedimentary-dominated host environments.

### **Volcanic-Associated Massive Sulphide (Cu-Zn; Zn-Pb-Cu)**

Copper-, zinc- and lead-bearing, stratiform to stratiform lenses of massive sulphide in submarine volcanic rocks of typically intermediate to felsic composition. Noranda-type: Cu-Zn; Mattabi-type: Zn-Cu-(Ag); Kuroko-type: Zn-Pb-Cu.

### **Geological Environment**

At the district scale, submarine volcanic assemblages have tholeiitic and/or calc-alkalic affinities. Various associations include bimodal mafic-felsic and intermediate-felsic volcanic successions, and komatiite-tholeiite assemblages with felsic volcanic centres. Intermediate to felsic volcanic rocks are the principal hosts. Subvolcanic intrusions of mafic to felsic composition are common and may be essential features. There are common occurrence of volcanoclastic and epiclastic sedimentary units in the sequence and thin exhalite horizons.

Exhalative deposition occurs on or beneath the sea floor from high temperature hydrothermal fluids related to the cooling of an evolved magma pile and subvolcanic porphyritic intrusions. Heated seawater is the principal source of the hydrothermal fluids and fluid flow is controlled by fault/fracture systems. There is a common general association with submarine calderas.

At the deposit scale, common rock types may include intermediate to felsic flows; fine to coarse, intermediate to felsic pyroclastic rocks; subvolcanic, equigranular and porphyritic intrusions; subordinate mafic flows and flow breccias; volcanic-derived clastic sedimentary rocks and debris flows; exhalites; and geologic features such as felsic domes.

Archean VMS deposits have been subdivided into two general types:

(1) Noranda-type: Volcanic section includes both mafic-intermediate and felsic rocks, although the mafic to intermediate rocks are more abundant; rock types are dominated by mafic to intermediate pillow lavas, hyaloclastites, massive amygdaloidal flows and flow breccia; felsic rocks occur as lava flows or domes and as hyaloclastites; local bedded volcanoclastic units; exhalites; generally a lack of only a minor amount of primary pyroclastic rocks and subaerial rocks.

(2) Mattabi-type: Volcanic section is dominated by felsic volcanic rocks; abundant fragmental rocks; dominant felsic tuff, massive and bedded pyroclastic flows, hyaloclastite, debris flows, and dome and flow breccia; also mafic to intermediate tuff and flow breccia; pillow lava and breccia may or may not be present; lava domes and welded tuff are commonly present; high amygdule content in flows; presence of both submarine and subaerial volcanic rocks is common.

A common local setting may consist of a quartz-feldspar porphyry dome surrounded and overlain by rhyolitic pyroclastic rocks and/or flows. The pyroclastic rocks may contain essential clasts of only rhyolite or they may be of variable composition, possibly displaying zoning from a rhyolitic base to dacite to andesite at the top of individual units.

Mineralization consists of sulphide lenses located stratigraphically above the dome, but below or

stratigraphically equivalent to an overlying, finely-bedded tuff to exhalite horizon. Exhalite units may include chert, carbonate, sulphide and oxide facies iron formation, graphitic argillite, barite and a Mn-enriched horizon. Chert exhalites are usually associated with felsic volcanism. Barite is generally only present in Phanerozoic deposits. Mn-enriched exhalites are usually associated with mafic volcanic-dominated footwall environments.

### **Host Rock Textures**

Dome units display massive to ghost-like fragments overlain by a breccia carapace of similar material. Felsic flows have massive to autobreccia textures, commonly with interflow units of tuff, breccia or felsic hyaloclastite. Flow breccia displays textures indicative of in-situ steam fracturing. Pyroclastic rock units consist mainly of coarse fragments indicative of a vent to proximal facies environment; poorly graded and bedded; some may represent debris flows shed from syn-volcanic fault scarps. Fragments commonly display altered rims, usually indicative of a hot emplacement. Fragment shapes are generally angular to subangular with rare amoeboid shapes. Exhalite horizons commonly display laminations or fine bedding.

### **Tectonic Setting**

Modern analogues for bimodal mafic-felsic and intermediate-felsic volcanic successions may include rifted island arc and back arc environments, e.g. Sturgeon Lake; and off-axis oceanic rift, back arc or rifted arc settings for komatiite-tholeiite assemblages with felsic volcanic centres, e.g. Kidd Creek.

May be associated with synvolcanic normal faults which may be difficult to identify. The faults may be indicated by abrupt thickness and facies changes in the volcanic units.

### **Associated Deposit Types**

The VMS deposit type may represent one of a spectrum of massive sulphide deposit types with Cyprus-type, Besshi-type and sedimentary exhalative-type deposits.

### **Deposit Description**

Stratabound and typically stratiform massive zone of pyrite - sphalerite - chalcopyrite - pyrrhotite +/- galena +/- bornite +/- barite +/- magnetite +/- sulphosalts +/- cassiterite. An underlying, discordant, subvertical, stringer-stockwork zone composed mainly of chalcopyrite, pyrite, pyrrhotite +/- magnetite. Concentric zonation of minerals upwards from the stringer zone from Cu-rich to Zn+Pb-rich.

Stratabound sulphides are generally fine-grained if not highly metamorphosed; massive, rubbly, brecciated, layered or laminated, slumped or re-deposited. The underlying discordant zone occurs as stockwork, stringers, disseminations or sulphide-silicate breccia.

Footwall alteration occurs in two forms:

(1) subvertical, discordant, pipe-like alteration mineralogy beneath the deposits may include silica, chlorite, sericite, siderite, chloritoid and clay. Occurs on a local scale; on the order of tens to hundreds of



metres. Alteration zonation; Noranda-type: silica (centre) to Mg-chlorite to sericite; Kuroko-type: silica to sericite to chlorite. Mattabi-type: siderite+/-ankerite, Fe-chlorite, +/- andalusite, quartz and sericite; a subtle zonation is present as a compositional change in the carbonate mineralogy.

(2) widespread, semiconcordant alteration which may occur on the scale of kilometres beneath and lateral to the deposits;

Mattabi-type: 2 varieties

- (a) sericite-quartz-calcite or dolomite; or
- (b) iron-rich chlorite, iron-bearing carbonate and chloritoid.

Noranda-type:

- (a) silicification and spilitization (epidote + quartz +/- albite, tremolite-actinolite and Mg-chlorite).

In high grade metamorphic rocks many of the minerals in (1) and (2) will be replaced by cordierite, anthophyllite, biotite, sericite, talc, kyanite, garnet, staurolite, andalusite, sillimanite, and gahnite.

### **Geological Ore Controls\Guides**

Mineralization commonly occurs near, or at the top of, volcanic or volcano-sedimentary sequences; usually near the centre of intermediate to felsic volcanism, sometimes in systems marked by resurgent volcanism - calderas; favourable stratigraphic horizons; clustering of deposits; synvolcanic fault/fracture zones; proximal (up to kilometres away) to subvolcanic intrusions; pyritic, siliceous exhalites may mark the mineralized units; sulphide clasts and matrix in the volcanic breccias ("mill rock") proximal to some deposits; and the transport of deposits may occur laterally for distances of hundreds of metres to a few kilometres.

### **Geochemical Signature**

Weathering may produce pyritic, or pyrrhotitic gossans with anomalous base metals and Au and Ag values.

Regional Scale: rhyolites having high abundances of rare earth elements (REE) and high field strength (HFS) elements, yielding relatively flat, chondrite-normalized REE profiles with pronounced negative Eu anomalies (FIII rhyolites); related icelandites (andesites with > 16.5%  $Al_2O_3$  and high  $P_2O_5$ ). VMS deposits can also be associated with FII rhyolites which display some enrichment in light REEs and a weak or no negative Eu anomaly. In some cases the FII and FIII units are intercalated.

Local Scale: metres to several hundreds of metres - generally an enrichment in MgO, FeO,  $CO_2$  and Zn; depletion in  $Na_2O$ ; and variable  $K_2O$ .

Noranda-type pipe-like alteration: +Mg, +Fe, +K, -Na, -Si, -Mn, and -Ca; Si-rich core.

Mattabi-type pipe-like alteration: +Fe, + $CO_2$ , +K, +Al, +Mn, -Ca, -Na, -Si and -Mg.

Noranda-type semiconcordant alteration: +Na, +Ca, +Si, -Fe, -Mg, and -Mn.

Mattabi-type semiconcordant alteration: +Fe, + $CO_2$ , +K, +Mn, -Na, -Ca, -Mg, and -Si.

## **Geophysical Signature**

Massive sulphides should produce an airborne and ground electromagnetic (EM) anomaly; although some do not (e.g. Winston Lake), especially the sphalerite-rich deposits. Magnetite and pyrrhotite in some deposits would produce an airborne and ground magnetic (mag) anomaly. Ground gravity and induced polarization (IP) surveys may locate massive and disseminated sulphides. They may also be useful in locating sphalerite-pyrite bodies. Offsets in magnetic patterns, linear EM anomalies, and linear resistivity lows may mark synvolcanic faults.

## **Examples of VMS Deposits**

Home Mine, Quebec; Kidd Creek Mine, Ontario; Geco Mine, Ontario; Bathurst 12 Mine, New Brunswick; Mattabi Mine, Ontario; Montauban Mine and New Calumet Deposit, Grenville Province, Quebec; and Buchans Mine, Newfoundland.

## **Exploration Vectoring**

### **A. Regional Vectoring (scale of kilometres)**

#### **1. Geological Criteria**

Greenstone belts; volcanic terranes;

Calc-alkalic and/or tholeiitic volcanic assemblages;

Submarine bimodal mafic-felsic or intermediate-felsic volcanic sequences;

or komatiite-tholeiite volcanic sequences with isolated felsic centres;

Intermediate to felsic volcanic +/- sedimentary host sequence;

Regional association with intermediate to felsic volcanic calderas; localized volcanic centres;

especially marked by coarse pyroclastic breccia, domes and flows;

Noranda-type: flow-dominated environment;

Mattabi-type: pyroclastic-dominated environment;

Regional "synvolcanic" faults, intersections, and lineaments;

Favourable stratigraphic horizon; clustering of deposits; generally at the break between two sequences;

Subvolcanic intrusions; mafic to felsic; especially quartz-feldspar porphyry;

Regional semiconcordant alteration mineralogy (refer above).

#### **2. Geochemical Criteria**

Lithochemical anomalies associated with the semiconcordant alteration (refer above);

FIII rhyolites and related icelandites;

FII rhyolites (refer above).

#### **3. Geophysical Criteria**

Airborne electromagnetic +/- magnetic anomaly; preferably coincident and isolated for sulphide deposits (may not always occur) ;

Airborne EM and mag to detect associated synvolcanic faults (Geophysical Signature).

### **B. Local Vectoring (scale of tens to hundreds of metres, additional to above)**

**1. Geological Criteria**

Intermediate to felsic volcanic host sequence;

Volcanic centres - characterized by intermediate to felsic coarse pyroclastics and/or flows; domes; and subvolcanic intrusions;

Associated rocks may include mafic to intermediate flows and pyroclastics, and volcanic-derived, clastic sedimentary rocks and debris flows;

Exhalite(s) - marks a break in the stratigraphic sequence; period of quiescence (refer above);

Subvertical alteration pipe - alteration mineralogy (refer above); zonations;

"Mill rock" - coarse pyroclastic breccia with some sulphide clasts and sulphide in the matrix.

**2. Geochemical Criteria**

Lithochemical anomalies associated with the alteration pipe;

may include enrichment in MgO, FeO, CO<sub>2</sub> and Zn;

depletion in Na<sub>2</sub>O; and variable K<sub>2</sub>O (refer above);

Geochemical (Cu, Zn, Pb, Au, Ag) anomaly in the exhalites;

Cu +/- Zn +/- Pb rock, soil and stream sediment anomalies.

**3. Geophysical Criteria**

Ground and/or borehole geophysical anomalies - EM, mag, IP, and gravity; preferably coincident; to detect the sulphide deposits (refer above to Geophysical Signature);

Ground mag, EM and resistivity surveys to detect synvolcanic faults (refer above).

**MINERALIZATION**

The author performed a property visit on October 27th, 2010, during which the north-western portion of the property was traversed. The outcrop exposures most encountered during the traverse were massive volcanic flows. On June 28th, 2010 the remaining portion of the property was traversed from the east.

The postulated Madsen Mine Trend and the Selco VMS drill intersected zone have not been found in surface outcrop. As such, no mineralized zones were encountered during the property visits, and no samples were taken for analysis. These sub-surface zones have been described elsewhere in the report.

Reference to historically documented mineralization is presented in the Property Geology section.

**EXPLORATION**

Kariana Resources, the issuer, has not performed any exploration on the South Baird Property to date.

**DRILLING**

Kariana Resources has not performed any diamond drilling to date.

## **SAMPLING METHOD AND APPROACH**

Reports by previous workers were, for the most part, filed prior to the introduction of NI 43-101 and Best Practice Guidelines. As such, there was little discussion of “sample quality” or “recovery factors”, etc. The previous work indicates the presence of anomalous gold and copper mineralization on the property, but would not suggest any specific volume or tonnage of any deposit.

During June and July of 2010, the author collected fourteen (14) representative rock samples listed in the chart below. See locations on Map (Figure 6). These samples are believed to be of good quality and representative of the rock types observed.

<b><u>Sample</u></b>	<b><u>Lithology</u></b>
141651-53	massive felsic flows and feldspar porphyry
141659,62,63	intermediate to felsic lithic tuff
141654,56	intermediate lithic tuff
141655	intermediate pillowed flows
141657,58,60,61,64	massive mafic flows

The assay analysis for these samples are presented in Appendix 2. No values of economic significance were reported. The analysis is for general base-line geological importance only.

## **PREPARATION, ANALYSES AND SECURITY**

The assessment program conducted by the author for the previous optionee in June-July, 2010 comprised of locating and traversing all trails on the property and determining the suitability for MMI in prospective areas. Fourteen (14) rock samples were also taken to determine baseline values for gold, platinum, paladium and multi-element alteration.

One of the main targets on the property is the Confederation Assemblage VMS copper-gold mineralization identified by Selco (1976) and United Bolero (2006) on claim 1244620. A single drill hole from the Bolero drill program was located in a marshy area running with water. No suitable soil medium could be located in the immediate area of the located drill hole, or along strike, to support a MMI soil survey.

Fourteen (14) rock grab samples were collected as type samples from outcrops located along the traverses. All samples were taken and “bagged” according to “Best Practice” procedures by the senior geotech. Sample shipping bags were sealed and delivered to a bonded transport company, for shipment to Accurassay Lab in Thunder Bay. The author believes that the security measures taken to ensure the validity and integrity of samples taken, are to the highest industry standards.

Upon arrival at the lab, the rock samples are entered into Accurassay Laboratories Local Information System (LIMS). The samples are dried, if necessary and then jaw crushed to -8mesh, riffle split, a 250 to 400 gram cut is taken and pulverized to 90%-150 mesh, and then matted to ensure homogeneity.

Silica sand is used to clean out the pulverizing dishes between each sample to prevent cross

contamination. The homogeneous sample is then fired in the fire assay lab. The sample is mixed with a lead based flux and fused for an appropriate length of time. The fusing process results in a lead button, which is then placed in a cupelling furnace where all of the lead is absorbed by the cupel and a silver bead, which contains any gold, platinum and palladium, is left in the cupel. The cupel is removed from the furnace and allowed to cool. Once the cupel has cooled sufficiently, the silver bead is placed in an appropriately labeled small test tube and digested using a 1:3 ratio of nitric acid to hydrochloric acid. The samples are bulked up with 1.0 mls of distilled deionized water and 1.0 mls of 1% digested lanthanum solution. The total volume is 3.0 mls. The samples cool and are vortexed. The contents are allowed to settle. Once the samples have settled they are analyzed for gold, platinum and palladium using atomic absorption spectroscopy. The atomic absorption spectroscopy unit is calibrated for each element using the appropriate ISO 9002 certified standards in an air-acetylene flame. The results for the atomic absorption are checked by the technician and then forwarded to data entry by means of electronic transfer and a certificate is produced. The Laboratory Manager checks the data and validates it if it is error free. The results are then forwarded to the client by fax, email, floppy or zip disk, or by hardcopy in the mail. NOTE: This method may be altered according to the client's demands. All changes in the method will be discussed with the client and approved by the laboratory manager.

Base metal samples are prepped in the same way as precious metals but are digested using a multi acid digest (HNO<sub>3</sub>, HF, HCl). The samples are bulked up with 2.0 mls of hydrochloric acid and brought to a final volume of 10.0 mls with distilled deionized water. The samples are vortexed and allowed to settle. Once the samples have settled they are analyzed for copper, nickel and cobalt using atomic absorption spectroscopy.

### **Quality Control**

Accurassay Laboratories employs an internal quality control system that tracks certified reference materials and in-house quality assurance standards. Accurassay Laboratories uses a combination of reference materials, including reference materials purchased from CANMET, standards created in-house by the laboratory, and certified calibration standards. Should any of the standards not fall within an acceptable range, reassays will be performed with a new certified reference material. The number of reassays depends on how far the certified reference material falls outside its acceptable range.

Additionally, Accurassay Laboratories verifies the accuracy of any measuring or dispensing device (i.e. scales, dispensers, pipettes, etc.) on a daily basis and are corrected as required. They are certified by the appropriate ISO standards association for their procedures. The lab prepared their own quality control measures and employed check assay and other check analytical and testing procedures according to their respective ISO standards. No corrective actions were deemed by the author to be necessary.

The author is, therefore, of the opinion that the sampling, sample preparation, security and analytical procedures are of the highest quality and adequacy.

### **DATA VERIFICATION**

There are no known surface outcroppings of significant mineralization known to exist on the property

and none was found during the property visits. All significant mineralization reported to date is from historic sub-surface drilling intersects. No core was found on the property during the property visits. The author cannot verify the accuracy or validity of that historic information.

All data presented in this report has come from personal site visits and sampling as presented on Map (Figure 6), the public assessment files at the Red Lake District Geologist's Office, the Ministry of Northern Development and Mines Web Site, company websites, or government reports. The author can verify that this information has been presented accurately and as it exists in those sources.

## **ADJACENT PROPERTIES**

The earliest records of gold in the Red Lake area date back to 1897 with the work of R.J. Gilbert for the North Western Ontario Development Company (Parrott, 1995). The first significant gold discovery was made by a prospector, L. B. Howey, in 1925. The gold-bearing veins he discovered were developed into the Howey Mine, Red Lake's first producer.

Early prospecting uncovered several gold showings in the area. Initially, the work focused on a mineralized quartz vein that intrudes felsic volcanics on claim KRL 11505 near High Lake. The Starratt-Olsen No. 1 Shaft, 1 kilometre to the north of the South Baird property, was sunk to a depth of 575 feet. and four levels were developed. In 1936, Austin McVeigh discovered the gold-bearing Austin Zone and drilling later that year confirmed its potential.

The Madsen Mine property, adjacent and to the north of the South Baird property, is situated in the western part of the Red Lake gold camp. The first claims in the Madsen area were staked in 1927 but no work is recorded from this period. Marius Madsen staked part of the property in 1934 and Madsen Red Lake Gold Mines was incorporated in 1935.

Underground development at the Madsen Mine No. 2 Shaft commenced in 1937 when a 3-compartment shaft was sunk to 535 feet. (163 metres). The shaft eventually reached a depth of 4,175 feet. (1,275 metres) with 24 underground levels. The mill began operating in August 1938 and operated continuously until 1974. Production commenced at 272 tonnes per day, increasing to 726 tonnes by 1949. Production averaged 363 tonnes per day at a grade of 8.38 grams per tonne (g/t) during the last five years of operation.

Total recorded production from the Madsen Mine No 2 shaft during the period 1938-74 was 2,416,609 ounces of gold from 8,371,631 tons at an average recovered grade of 0.289 opt gold (7,593,906 tonnes at an average recovered grade of 9.91 grams per tonne).

Red Lake Buffalo Resources acquired the Madsen property from the Rowland Estate in 1991 and became Madsen Gold Corp. Surface exploration on the Madsen claim group initially focused on the main Austin and parallel McVeigh 'tuff' horizons close to the No. 2 shaft.

Drill programs in 1973 and 1974 evaluated the potential in the No. 1 shaft area, the andesite-talc schist contact at the south end of Russet Lake and the Austin 'tuff' extension between Slobodzian and Derlak Lakes.

Immediately following its acquisition of Madsen Gold Corp., Claude Resources proceeded to strip

several of the higher priority vein-type target areas, including the DeVilliers, No. 1 Shaft, Creek and the Central Iron Carbonate Alteration zones. Since April 1998, Claude/Madsen Gold Corp have also drilled 230 surface and underground holes totaling in excess of 21,000 metres into the Austin and McVeigh zones.

Claude has subsequently dewatered the mine to the 12-Level and conducted trial mining on the Austin zone. The McVeigh zone has been accessed from a new ramp and limited trial mining has been conducted.

The above information was largely sourced from the Claude Resources public web-site. The author has not personally verified the information, and the reader is also cautioned that the mineralization described above is not necessarily indicative of the mineralization on the South Baird property.

### **MINERAL PROCESSING AND METALLURGICAL TESTING**

Not applicable

### **MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES**

Not applicable

### **INTERPRETATION AND CONCLUSIONS**

No exploration work has been conducted by Kariana Resources. As reported by previous workers, no mineralization could be located in surface outcrop by the author. Fourteen (14) rock samples were collected for general geological purposes and these did not show any economic or alteration values of significance.

The historic work undertaken on the South Baird Property by previous workers has confirmed the presence of potentially significant gold, silver and copper mineralization associated within favourable geological settings.

The western portion of the property is well positioned along the postulated westward strike extension of the Madsen Mine Trend which hosts a number of economic gold mines. Previous workers have confirmed that the New Faulkenham Mine Structure Trend also strikes onto the property and is known to host gold mineralization.

The presence of copper-gold sulphide mineralization in a possible stratigraphic volcanogenic massive sulphide (VMS) setting has been confirmed in shallow drilling by Selco and United Bolero. There is a Confederation Assemblage, VMS style target for both precious and base metals in the central portion of the property.

The author therefore concludes that priority exploration targets can be identified as:

1. Confederation Assemblage VMS copper-gold mineralization identified by Selco (1976)

- and United Bolero (2006) on claim 1244620 is postulated to represent a stratigraphic volcanogenic massive sulphide mineralization horizon. An intrusive unit, called a diorite, a gabbro or a hornblendite, along the eastern property boundary is believed by some workers to represent a synvolcanic intrusive related to the VMS mineralization. This VMS horizon has only been tested by a few shallow drill holes over a short strike length.
2. The westward strike extension of the Madsen Mine Trend (Flat Lake – Howey Bay Deformation Zone) is projected to cross the north-west portion of the property on claim 1244608. Only one fence of shallow drill holes have tested this target.
  3. Gold-bearing quartz veins reported by Rogard Red Lake Mines (1946) on claim 1244620 were not located during the property visit. These gold veins may be related to the eastern extension of the New Faulkenham Mine Structure and this target has not been previously drill tested.

## **RECOMMENDATIONS**

It is recommended that cut line grids be located over the 3 target areas noted above, to facilitate multi-element soil geochemistry surveys like MMI-M; the multi-element mobile metal ion method. However, the VMS copper-gold target is prone to very wet conditions during heavy rains and spring melting snow run-off. Dry surface conditions should be sought to optimize the MMI response.

The combination of responses for the primary target minerals gold, copper and zinc when used in combination with the responses for the alteration signatures noted in the conceptual exploration models under DEPOSIT MODELS above, could greatly assist in potential vectoring and specifically drill-hole targeting.

Prospecting should follow-up any significant soil geochemistry anomalies in order to locate any possible mineralized outcrop. 1,000 meters of diamond drilling is recommended for initial testing of areas where there is little or no surface outcroppings.



**Budget: Recommended Field Surveys**

			\$	Total \$
Linecutting	14	kms	1,000	14,000
MMI	490	samples	40	19,600
Prospecting	25	samples	25	625
Mobe-Demobe				5,000
Snr Geotech	25	man days	400	10,000
Geotech	25	man days	350	8,750
Snr Geologist	10	man days	750	7,500
Accom	25	man days	180	4,500
Truck	30	days	100	3,000
ATV	25	days	75	1,875
Diamond Drilling	1,000	metres	225	225,000
				\$300,000

**Table 2**

These recommendations require that the soil geochemistry field surveys, and prospecting of any positive results, be done in advance of considering any significant drilling program in order to better facilitate drill targeting over the three known historic zones. Advancing to the significant drilling phase is contingent upon positive results from the soil geochemistry field surveys. The nature of the terrain, type of soil, or possible marshy conditions in the target areas is not expected to hinder the usefulness of the surveys.

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### **OGS Maps**

P197 (1963) Baird Township, SE Quarter, 900 foot level

P198 (1963) Baird Township, SE Quarter, 1,900 foot level

P208 (1963) Heyson Township

P1580 (1978) Total Intensity Magnetic Survey

P2484 (1982) Madsen Area Quaternary Geology

P3107 (1991) Red Lake Greenstone Belt: Geology and Gold Mineralization

P3196 (1993) Baird Township, Precambrian Geology

P3197 (1993) Heyson Township, Precambrian Geology

M2072 (1962) Baird Township, Eastern Part

M2545 (1991) Bedrock Geology of Ontario

Assessment Files, Red Lake Resident Geologist's Office, Ministry of Northern Development and Mines; Red Lake, Ontario.

**Work Assessment Files for South Baird Property and Adjacent Lands.**

Digital File	Company	Date	Work
52K13NW0006	CIM-Noramco	1989	drilling
52K13NW0012	CIM-Noramco	1988	geophysics
52K13NW0038	Selco	1976	drilling
52K13NW0039	East West	1997	geophysics, drilling
52K13NW0040	Childs	1951	drilling
52K13NW0044	CMI	1997	geophysics
52K13NW0046	Selco	1976	geophysics
52K13NW2003	Ansil	1999	drilling
52K13NW2007	Placer Dome	2006	geology
52K13NW2008	Ansil	2002	geochemistry
52K13NW2013	United Bolero	2004	geophysics
paper	United Bolero	2006	drilling
52N04SW0245	New Dickenson	1959	drilling
52N04SW0260	New Dickenson	1963	drilling
52N04SW0262	Childs	1951	drilling

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### **CERTIFICATE of AUTHOR**

I, Garry K. Smith, P.Geo do hereby certify that:

1. I am a registered Professional Geoscientist in the Province of Ontario and President of Devon Corporation:  
Devon Corporation  
3267 Stonecrest Rd., RR2  
Woodlawn, Ontario Canada  
K0A 3M0
2. I graduated with an Honours B.Sc. degree in Earth Sciences from the University of Waterloo in 1977.
3. I am a registered member of the Association of Professional Geoscientists of Ontario.
4. I have worked continuously as a geologist since graduation from university in 1977.
5. I have read the definition of “qualified person” set out in National Instrument 43-101 (“NI 43-101”) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience in the Red Lake mining camp of Ontario, I fulfill the requirements to be a “qualified person” for the purposes of NI 43-101.
6. I am responsible for the preparation of all sections of the technical report titled “Kariana Resources Inc. 43-101 Compliant Report on The South Baird Property, Red Lake Mining Division, Ontario” and dated Oct. 30, 2010 (the “Technical Report”). I visited the South Baird Property on October 27 - 28, 2010.
7. I have completed a minor Assessment Work program for the previous optionee of the property that is the subject of this Technical Report.
8. That, as of October 30, 2010, the date of the 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.
9. I am independent of the issuer applying all of the tests in section 1.4 of National Instrument 43-101.
10. I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.

Dated this 30th Day of October, 2010.

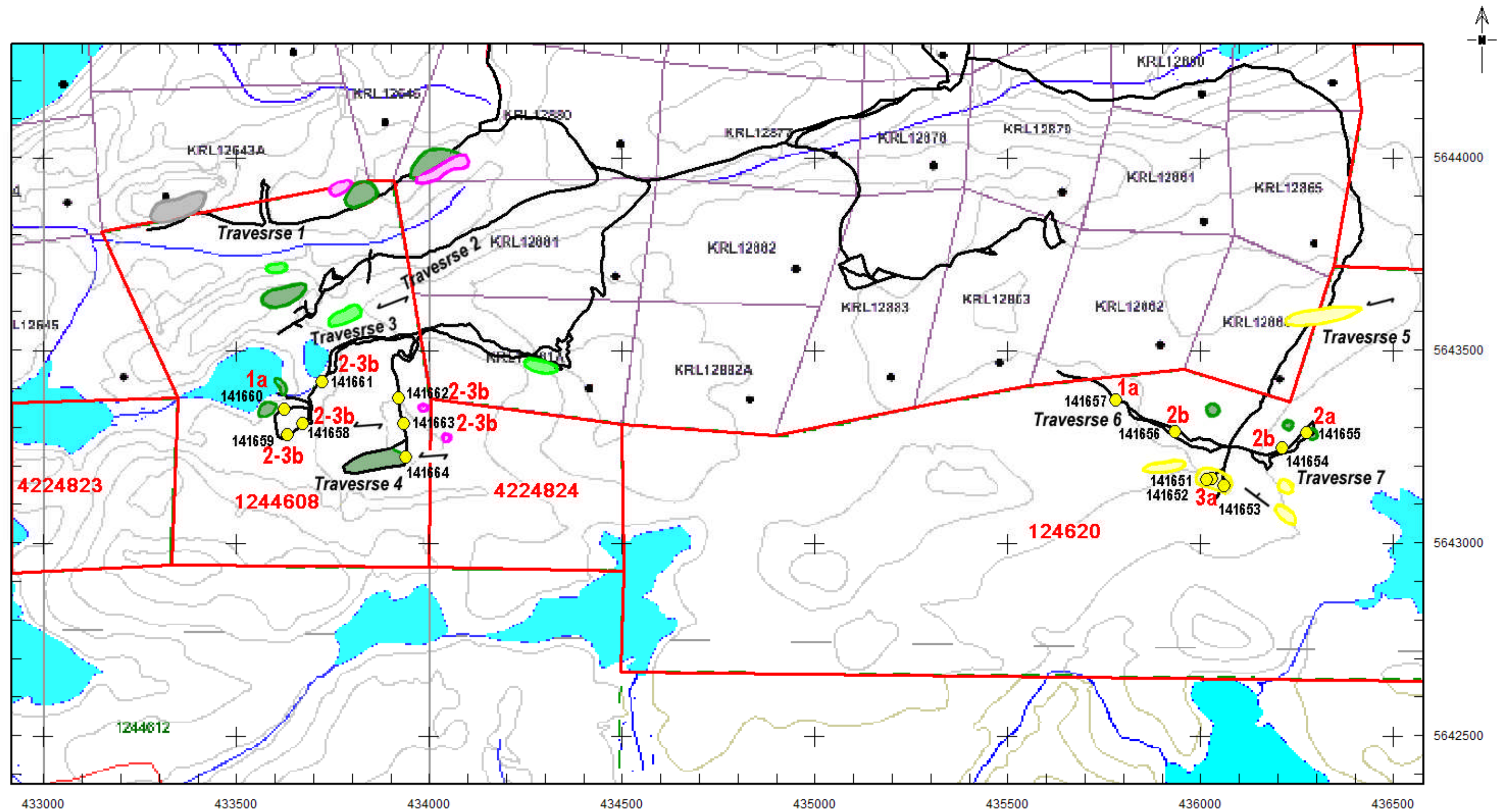
*Signed “Garry K Smith”*

\_\_\_\_\_  
Garry K. Smith, P.Geo

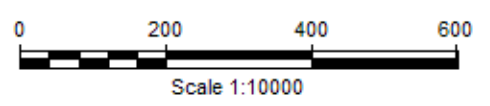


## **Appendix 1**

### **Traverses and Sample Locations Map**



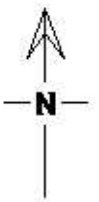
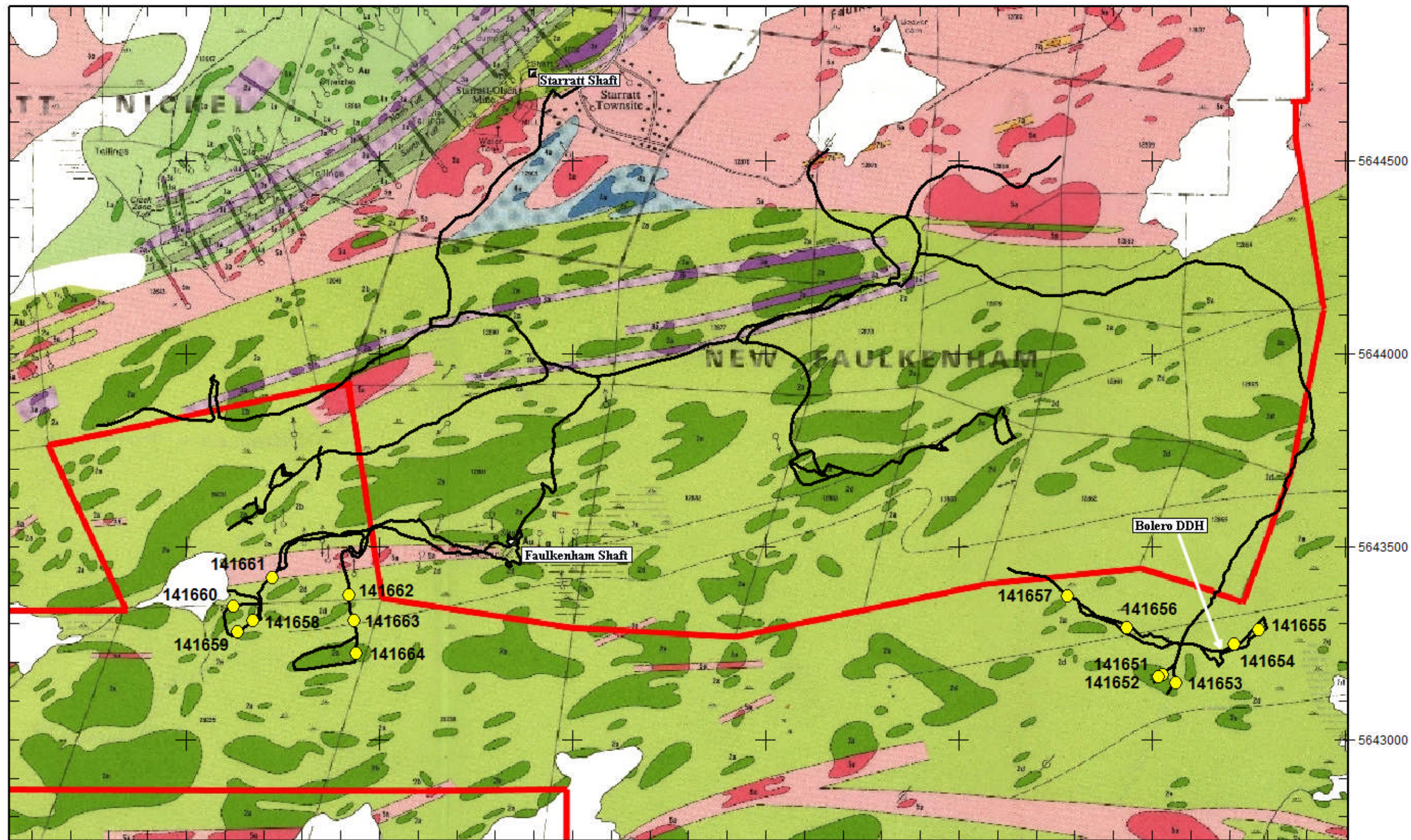
- 1a Massive Mafic Flows
- 2a Intermediate Pillowed Flows
- 2b Intermediate Lithic Tuff
- 2-3b Intermediate-Felsic Lithic Tuff
- 3a Felsic Flows, Feldspar Porphyry
- 8 Granodiorite



**Traverses, sample numbers  
and lithology**

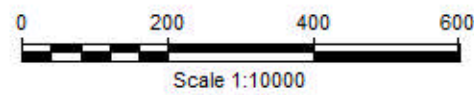
**Glory Gold Resources  
Baird-Heyson Property  
2010 Assessment Program**





5644500  
5644000  
5643500  
5643000

433500 434000 434500 435000 435500 436000 436500



Intrusives		LEGEND		Mafic Volcanics	
	7a Granodiorite		Intermediate Volcanics		Basalt Flows
	4a Diorite		Flows, mg		Tuff Beds
	3a MetaGabbro				IF, chert

**Traverses and Sample Locations**



## **Appendix 2**

### **Rock Analysis and Certificates**

Sample Number	UTM 83 Easting	UTM 83 Northing	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K %
141651	5643168	436029	<1	10.00	<2	559	2	1	2.41	<4	7	193	3	1.75	2.11
141652	5643164	436016	<1	10.00	<2	630	2	<1	2.8	<4	12	127	18	3.03	2.28
141653	5643148	436062	<1	10.00	<2	560	1	<1	1.87	<4	6	173	5	1.77	2.32
141654	5643247	436212	<1	10.00	<2	715	2	<1	2.42	8	39	230	5	10.51	2.53
141655	5643286	436276	<1	10.00	<2	536	2	<1	1.16	<4	7	171	16	1.74	2.25
141656	5643289	435935	<1	9.07	<2	479	3	<1	4.87	5	35	196	20	7.12	2.34
141657	5643372	435781	<1	10.00	<2	413	2	<1	5.59	6	38	87	122	8.34	2.31
141658	5643310	433673	<1	10.00	<2	506	1	<1	2.51	<4	10	175	10	2.1	2.13
141659	5643280	433633	<1	10.00	<2	774	2	<1	2.89	<4	8	120	3	2.14	1.97
141660	5643346	433624	<1	10.00	<2	514	2	<1	2.1	<4	13	168	13	2.99	2.05
141661	5643419	433723	<1	10.00	<2	457	2	<1	3.84	<4	29	421	22	4.53	2.2
141662	5643376	433922	<1	10.00	<2	588	2	<1	1.73	<4	5	129	7	1.68	1.63
141663	5643309	433935	<1	9.8	<2	854	1	<1	1.91	<4	14	211	16	2.27	2.18
141664	5643223	433940	<1	10.00	<2	680	2	<1	3.07	<4	17	187	25	3.33	2.19

Sample Number	Li ppm	Mg %	Mn ppm	Mo ppm	Ni ppm	P ppm	Pb ppm	Sb ppm	Se ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	V ppm	W ppm
141651	18	0.56	237	8	20	350	8	<5	<5	<10	565	1502	<1	46	<10
141652	29	1.03	415	3	12	1015	9	<5	<5	<10	535	4505	<1	58	<10
141653	19	0.63	206	3	10	331	7	<5	<5	<10	436	1463	2	41	<10
141654	47	2.79	465	2	136	1176	19	7	<5	<10	133	5268	4	143	<10
141655	24	0.87	214	3	19	259	5	<5	<5	<10	290	1495	1	36	<10
141656	23	2.26	717	2	68	1548	11	9	<5	<10	259	6050	2	154	<10
141657	26	2.04	1058	4	44	2755	15	5	<5	<10	269	6944	1	207	<10
141658	22	0.7	403	3	16	396	6	6	<5	<10	448	1636	<1	49	<10
141659	18	0.47	296	2	16	384	8	<5	<5	<10	705	1763	<1	49	<10
141660	21	0.99	497	3	29	649	7	<5	<5	<10	648	3011	<1	59	<10
141661	38	3.72	813	3	201	1065	12	7	<5	<10	486	3927	4	114	<10
141662	20	0.54	198	3	12	425	8	<5	<5	<10	543	1637	2	37	<10
141663	24	0.96	341	5	47	739	10	<5	<5	<10	630	2133	<1	54	<10
141664	28	1.54	594	3	45	817	8	<5	<5	<10	549	3460	<1	73	<10

Sample Number	Y ppm	Zn ppm	Au ppb	Pt ppb	Pd ppb	Lithology Description
141651	7	22	<5	<15	<10	massive felsic flows, with porph mafic flows and feldspar porph
141652	13	69	<5	<15	<10	massive felsic flows, with porph mafic flows and feldspar porph
141653	6	33	26	<15	<10	massive felsic flows, with porph mafic flows and feldspar porph
141654	42	44	8	<15	<10	intermediate lithic tuff
141655	7	33	<5	<15	<10	intermediate pillowed flows
141656	28	41	<5	<15	<10	intermediate lithic tuff
141657	58	100	<5	<15	<10	massive mafic flows
141658	8	55	<5	<15	<10	massive mafic flows
141659	7	29	<5	<15	<10	intermediate to felsic lithic tuff
141660	9	63	11	<15	<10	massive mafic flows
141661	18	83	<5	<15	<10	massive mafic flows
141662	7	31	28	<15	<10	intermediate to felsic lithic tuff
141663	8	52	<5	<15	<10	intermediate to felsic lithic tuff
141664	12	69	<5	<15	<10	massive mafic flows

**Certificate of Analysis**

Wednesday, July 21, 2010

 Devon Corporation  
 3267 Stonecrest Road, RR #2  
 Woodlawn, ON, CAN  
 KOA3M0  
 Ph#: (613) 832-4212  
 Email#: xgksmith@aol.com, xkarinsmith@aol.com

 Date Received: 07/12/2010  
 Date Completed: 07/21/2010  
 Job #: 201042600  
 Reference: GG2010-1  
 Sample #: 14 Rock

Acc #	Client ID	Au ppb	Pt ppb	Pd ppb	Rh ppb
181443	141651	<5	<15	<10	
181444	141652	<5	<15	<10	
181445	141653	26	<15	<10	
181446	141654	8	<15	<10	
181447	141655	<5	<15	<10	
181448	141656	<5	<15	<10	
181449	141657	<5	<15	<10	
181450	141658	<5	<15	<10	
181451	141659	<5	<15	<10	
181452	141660	11	<15	<10	
181453 Dup	141660	9	<15	<10	
181454	141661	<5	<15	<10	
181455	141662	28	<15	<10	
181456	141663	<5	<15	<10	
181457	141664	<5	<15	<10	

PROCEDURE CODES: ALP1, ALPG2, ALMA1

Certified By:



The results included on this report relate only to the items tested  
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AL907-0414-07/21/2010 10:48 AM



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Fax: (807) 622-7571

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assay@accurassay.com

Devon Corporation  
Date Created: 10-07-27 01:58:06 PM  
Job Number: 201042600  
Date Received: 07/12/2010  
Number of Samples: 14  
Type of Sample: Rock  
Date Completed: 07/21/2010  
Project ID: GG2010-1

- \* The results included on this report relate only to the items tested
- \* This Certificate of Analysis should not be reproduced except in full, without the written approval of the laboratory.
- \*The methods used for these analysis are not accredited under ISO/IEC 17025

Accur. #	Client Tag	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K %	Li ppm	Mg %	Mn ppm	Mo ppm	Ni ppm	P ppm	Pb ppm	Sb ppm	Se ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	V ppm	W ppm	Y ppm	Zn ppm
181443	141651	<1	>10.00	<2	559	2	1	2.41	<4	7	193	3	1.75	2.11	18	0.56	237	8	20	350	8	<5	<5	<10	565	1502	<1	46	<10	7	22
181444	141652	<1	>10.00	<2	630	2	<1	2.80	<4	12	127	18	3.03	2.28	29	1.03	415	3	12	1015	9	<5	<5	<10	535	4505	<1	58	<10	13	69
181445	141653	<1	>10.00	<2	560	1	<1	1.87	<4	6	173	5	1.77	2.32	19	0.63	206	3	10	331	7	<5	<5	<10	436	1463	2	41	<10	6	33
181446	141654	<1	>10.00	<2	715	2	<1	2.42	8	39	230	5	10.51	2.53	47	2.79	465	2	136	1176	19	7	<5	<10	133	5268	4	143	<10	42	44
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181448	141656	<1	9.07	<2	479	3	<1	4.87	5	35	196	20	7.12	2.34	23	2.26	717	2	68	1548	11	9	<5	<10	259	6050	2	154	<10	28	41
181449	141657	<1	>10.00	<2	413	2	<1	5.59	6	38	87	122	8.34	2.31	26	2.04	1058	4	44	2755	15	5	<5	<10	269	6944	1	207	<10	58	100
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181451	141659	<1	>10.00	<2	774	2	<1	2.89	<4	8	120	3	2.14	1.97	18	0.47	296	2	16	384	8	<5	<5	<10	705	1763	<1	49	<10	7	29
181452	141660	<1	>10.00	<2	514	2	<1	2.10	<4	13	168	13	2.99	2.05	21	0.99	497	3	29	649	7	<5	<5	<10	648	3011	<1	59	<10	9	63
181453	141660	<1	>10.00	<2	508	2	<1	2.09	<4	13	165	13	2.97	2.03	21	0.99	493	3	29	647	9	<5	<5	<10	644	2958	<1	58	<10	9	64
181454	141661	<1	>10.00	<2	457	2	<1	3.84	<4	29	421	22	4.53	2.20	38	3.72	813	3	201	1065	12	7	<5	<10	486	3927	4	114	<10	18	83
181455	141662	<1	>10.00	<2	588	2	<1	1.73	<4	5	129	7	1.68	1.63	20	0.54	198	3	12	425	8	<5	<5	<10	543	1637	2	37	<10	7	31
181456	141663	<1	9.80	<2	854	1	<1	1.91	<4	14	211	16	2.27	2.18	24	0.96	341	5	47	739	10	<5	<5	<10	630	2133	<1	54	<10	8	52
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Certified By:   
Derek Demianiuk, H.Bsc.