



**TECHNICAL REPORT**  
**on the**  
**NORTHSHORE PROPERTY**  
**Thunder Bay Mining Division**  
**Priske Township, Ontario, Canada**

**Latitude 48° 45' 54" North by Longitude 87° 16' 30" West**  
**Zone 16 U 5401359 m North by 4797800 m East**

- Report Prepared For –

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Report Date: May 22, 2012  
Effective Date: March 9, 2012

J. Douglas Blanchflower, P. Geo.  
Consulting Geologist

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## DATE and SIGNATURE PAGE

The undersigned prepared this Technical Report titled 'Technical Report on the Northshore Property, Thunder Bay Mining Division, Priske Township, Ontario, Canada', dated May 22, 2012, in support of the public disclosure of technical aspects for the Northshore project by GTA Resources and Mining Inc. The format and content of the report are intended to conform to Form 43-101F1 of National Instrument 43-101 of the Canadian Securities Administrators.

Effective Date: March 9, 2012

Signed by,

*(Signed by J. Douglas Blanchflower)  
(signed and sealed original copy on file)*

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J. Douglas Blanchflower, P. Geo.  
Consulting Geologist

May 22, 2012  
Signature Date

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## CERTIFICATE OF QUALIFICATIONS

I, **J. DOUGLAS BLANCHFLOWER**, of Aldergrove, British Columbia, DO HEREBY CERTIFY THAT:

- 1) I am a Consulting Geologist with a business office at 25856 – 28<sup>th</sup> Avenue, Aldergrove, British Columbia, V4W 2Z8; and President of Minorex Consulting Ltd.
- 2) I am a graduate of Economic Geology with a Bachelor of Science, Honours Geology degree from the University of British Columbia in 1971. I have practised my profession as a Professional Geologist since graduation.
- 3) I am a Registered Professional Geoscientist in good standing with the Association of Professional Engineers and Geoscientists of British Columbia (No. 19086) and the Association of Professional Geoscientists of Ontario (No. 1913).
- 4) I am a 'Qualified Person' as defined in Section 1.1 of National Instrument 43-101.
- 5) I was retained by GTA Resources and Mining Inc. in November 2011 to prepare a technical report on the Northshore property. I visited the property on November 2, 2011, reviewed all 2011 exploration results and collected verification rock geochemical samples at various sites. I later reviewed all documented historical exploration results, and subsequently prepared and submitted this report.
- 6) I am responsible for all sections of this report titled 'Technical Report on the Northshore Property, Thunder Bay Mining Division, Priske Township, Ontario, Canada' and dated May 22, 2012. My work is based upon available public government reports and documents, and private exploration data and information provided by GTA Resources and Mining Inc. and Balmoral Resources Ltd.
- 7) I have not had prior involvement with this property that is the subject of this technical report.
- 8) 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.
- 9) I am independent of GTA Resources and Mining Inc. and Balmoral Resources Ltd. as defined in Section 1.5 of National Instrument 43-101.
- 10) I have read National Instrument 43-101 and Form 43-101F1, and this technical report has been prepared by me in compliance with the foregoing Instrument and Form.

Respectfully submitted by,

*(Signed by J. Douglas Blanchflower)  
(signed and sealed original copy on file)*

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**J. Douglas Blanchflower, P. Geo.**  
Consulting Geologist

Dated at Aldergrove, British Columbia, Canada this 22<sup>nd</sup> day of May, 2012

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## 1 SUMMARY

The Northshore property (the 'Property') is situated in the Thunder Bay Mining Division within Priske Township, approximately 4 kilometres south of the town of Schreiber, Ontario. It is comprised of 5 patented and 2 unpatented mining claims covering 322.255 hectares or 796.31 acres. The mineral claims are owned by Balmoral Resources Ltd. ('Balmoral') of Vancouver, B.C. and operated by GTA Resources and Mining Inc. ('GTA') of Burlington, Ontario. On July 24, 2011 GTA Resources and Mining Inc. entered into an Option Agreement with Balmoral Resources Ltd. to acquire up to a 70% interest in the Property.

GTA retained Minorex Consulting Ltd. ('Minorex') in November 2011 to carry out a property examination, review all available exploration results pertaining to this Property and determine whether the Property has merit and is worthy of further exploration. The author, a consulting geologist employed by Minorex Consulting Ltd. and an independent qualified person according to NI 43-101, visited the Northshore property on November 2, 2011. The author examined several mineral showings on the property and collected ten verification samples of vein bedrock and drill core samples. In addition, all aspects of past and recent exploration campaigns were reviewed with GTA geological personnel. GTA provided the author with available exploration data, including reports, maps, and other public and private information pertaining to the Property. In addition, the author downloaded several pertinent geological and assessment reports available from the Ontario Ministry of Northern Development and Mines' website.

The author prepared this independent technical report (the 'Report') in accordance with disclosure and reporting requirements set forth in the Canadian Securities Administrators' National Instrument 43-101 ('NI 43-101'), Companion Policy 43-101CP, and Form 43-101F1 (Standards of Disclosure for Mineral Properties) to be a comprehensive review of the exploration activities on the property.

The Northshore property is readily accessible via the four-wheel drive gravel 'Worthington Bay' road which joins Trans-Canada Highway No. 17 approximately 4.4 kilometres east of the town of Schreiber. The Worthington Bay road leads 5 kilometres south to the shore of Lake Superior where the old Northshore mill was located. The 2011 diamond drilling sites within the Afric Zone are about 1.5 km west of the Worthington Bay road via an upgrade 4-wheel drive road. The city of Thunder Bay has the closest commercial airport to the town of Schreiber and the Property. There are regular daily flights to Thunder Bay from Toronto and elsewhere in Canada, and it is a 260 km, or a 3-hour drive, from Thunder Bay to Schreiber.

The Schreiber area has a humid continental climate with average mean temperatures ranging from -20° C (January) to +20° C (July), and an annual average precipitation of 840 mm. Local lakes will usually start to freeze over in mid-November and thaw in early to mid-May. The Property is situated on the rugged northern shore of Lake Superior with considerable relief. The land rises steeply from the lake shore with elevations ranging from approximately 625 m along the shore of Lake Superior to 1,375 m along the northern property boundary. The Property is extensively covered by a mixture of spruce and fir trees with moderate undergrowth in poorly drained areas, and birch and alder and thinner undergrowth along hillocks. Bedrock exposures are quite common along cliffs, steep slopes and ridge tops, but elsewhere outcrop is scarce except where exposed by road cuts or trenches. Exploration work could be carried out year-round.

There is no useable surface mining infrastructure on the Property. The nearby cities of Marathon, to the east, and Thunder Bay, to the west, are dominated by the mining and logging industries respectively where an experienced labour pool and all types of exploration and mining services are readily available.

There are adequate areas within the Property available for potential tailings storage, waste disposal and processing plant sites. In addition, the Trans-Canada Highway is within 4 km of the Property, there is abundant water for exploration and possible development purposes, plus the CP Rail railroad and a major power transmission line are situated within 2 to 3 km of the claim holdings.

Gold was first discovered within the BJ 122 mining claim by Peter McKellar in 1898. Between 1920 and 1937 W. L. Longworth (later McKellar-Longworth Ltd.) operated the claim, discovered 14 veins and later mined the 'Main' vein with a series of adits and underground workings. North Shores Gold Mines Limited was later formed in 1933, a 25-ton mill was built in 1934 at Worthington Bay on the shore of Lake Superior, and gold production began in 1935. Production ceased in 1937 after 3,808 tons of ore were milled yielding 2,441 ounces of gold and 226 ounces of silver. From 1939 to 1980 several operators acquired the Northshore property, but none reportedly carried out any advanced development or production. In 1980 Autotrac Limited acquired all of the Northshore patented and unpatented mining claims, and in 1988 optioned their property to Noranda Exploration Company Ltd. which later became Hemlo Gold Inc. Over the next four years Noranda/Hemlo Gold carried a comprehensive exploration program that led to the discovery of lode gold mineralization at the Afric Zone and five other lode gold occurrences, in addition to the mined Northshore Zone.

In mid-1997 Cyprus Canada Inc. optioned the Northshore property from Autotrac Limited and conducted an aggressive exploration program focused on discovering a low grade, bulk-tonnage gold deposit. Their work failed to fulfill their goal but it did show that the Property was underexplored and that there are "numerous, high grade zones" on the Property that were poorly explored.

International Taurus Resources Inc. purchased the Autotrac Limited patented and unpatented mining claims in 1999, and later became American Bonanza Gold Corp. From 2005 to 2008 American Bonanza Gold Corp. carried out two drilling campaigns, trenching, rock sampling and limited prospecting. The results of their work confirmed the locations and tenor of the six or seven known lode gold occurrences. In January 2011, American Bonanza Gold Corp. transferred 100% of their interest in the Property to Balmoral Resources Ltd. No reported exploration work was carried out by Balmoral until the option agreement with GTA in July 2011.

The Schreiber area is underlain by Archean-age rocks that form the western portion of the Hemlo-Schreiber greenstone belt of the Superior structural province. The Property is underlain by northeasterly trending felsic to intermediate and mafic volcanics that have been intruded by syenitic to dioritic and feldspar porphyritic ( $\pm$  quartz) stocks. Northwesterly-trending diabase and lamprophyre dykes crosscut the sequence. These lithologic units are regionally altered to greenschist facies, and have affected by at least one major episode of deformation which folded the supracrustal rocks along east-southeasterly axes and imposed a pervasive regional foliation. Northeasterly and northwesterly faulting and fracturing within the Property appear to be parasitic structures to the Worthington Bay and Schreiber Point strike-slip faults that bound most of the known mineral occurrences on the east and west respectively.

Gold mineralization on the subject claim holdings are genetically associated with well-defined, narrow, quartz and quartz-carbonate veins, quartz-carbonate ( $\pm$  tourmaline) vein stockworks, and base-metal sulphide mineralization. The Audney, Caly and Caly North quartz-carbonate veins within the main Afric Zone host locally coarse, high grade gold mineralization. These two vein structures strike east-northeasterly, vary in true widths from 5 cm to 60 cm, and have been traced by drilling to a vertical depth of at least 125 m. They commonly have poorly defined selvages with narrower subparallel veins, veinlets and infilled fractures hosting native gold, electrum and other gold-bearing mineralization. They may also host trace to minor amounts of



pyrite with lesser tourmaline and chalcopyrite. These east-northeasterly to northeasterly trending vein structures appear to be structurally related to conjugate, dilational fracturing associated with northwesterly trending extensional fracturing and north-northeasterly displacements along the Worthington Bay and Schreiber Point faults.

There are numerous narrow quartz and quartz-carbonate ( $\pm$  tourmaline) vein and veinlets throughout the Afric Zone subparalleling the better defined Audney, Caly and Caly North vein structures. These narrow veins may occur individually or collectively as vein stockworks often hosting considerable gold values as native gold, electrum and gold-bearing sulphide mineralization. In addition, gold mineralization is associated with the pyritized feldspar (+/- quartz) porphyritic and syenitic intrusive host rocks. Gold mineralization appears to be genetically associated with the hydrothermal alteration of the host intrusive rocks that produced finely-disseminated to blebby pyrite and extensive zones with pervasive ankerite (iron-carbonate) alteration associated with variable sericitization and potassic alteration, especially in close proximity to the syenitic intrusive body. Gold-bearing pyrite mineralization seems to be more concentrated at or near the loci of northeasterly and northwesterly trending fracturing.

Significant gold mineralization also occurs associated with several pyrite, chalcopyrite and/or arsenopyrite-bearing shear zones and veins that may also carry locally elevated silver values. Past operators have suggested that this style of mineralization may be genetically related to volcanogenic massive sulphide mineralization known elsewhere in the Archean-age sequence.

Exploration drilling on or in the vicinity of the Property reportedly dates back to the mid-1930's during the exploration and development of the Northshore mine. Since then there have been at least four more drilling campaigns mostly directed at evaluating the Afric Zone gold mineralization.

The Noranda Exploration/Hemlo Gold drilled twenty 'NR'-series diamond drill holes, totalling 2,494.6 m, during the 1990 and 1991 field seasons. These holes were mostly collared to delineate the gold mineralization within the Afric Zone for a preliminary resource estimate and to test gold-bearing vein structures within five other mineral trends. In mid-1997 Cyprus Canada completed a 7-hole diamond drilling program, totalling 1,131.3 m, to test for the eastern and western extensions of the Afric Zone and the eastern extension of the Northshore vein structure. This drilling discovered several high grade, narrow gold-bearing veins that were considered significant and under explored. American Bonanza carried out two diamond drilling campaigns during their tenure; eleven diamond drill holes, totalling 4,530 m, in 2006 and then nine more diamond drill holes, totalling 1,367 m, between December 2007 and January 2008. Their drilling results confirmed the location and tenor of the five known gold-bearing mineral zones. The author has not verified the reported historic drilling in the field since most of the drill sites are unmarked and the drill core has been vandalized. He has relied on the documentation of the historic exploration work contained in the publicly-available assessment reports and considered these reports reliable for the purposes of this report.

GTA carried out surface sampling of the exposed Audney, Caly and Caly North gold-bearing veins within the Afric Zone during September 2011 and later completed twelve NQ-size diamond drill holes, totalling 1,038.0 m, during the latter half of October 2011. The diamond drilling program focused on evaluating the three sampled vein structures where surface rock samples had returned significant to high gold values. Cobra Drilling Ltd. of Thunder Bay, Ontario provided an Atlas Copco P4 Hydraulic drilling rig, support equipment and field personnel to complete the diamond drilling contract. The drill core logging and sampling work was carried out at GTA's field office/warehouse facility in Schreiber, Ontario where the drill core is currently being stored.

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The 2011 exploration program utilized handling, logging, sampling, QA/QC, security and storage procedures compliant with current industry-standard practises and within NI 43-101 guidelines. It is the opinion of the author and that of Ms. C. Vallat, who analysed and documented GTA's 2011 QA/QC results, that the 2011 procedures were adequate but future QA/QC results should be continually monitored and reviewed throughout the entire sampling and analytical phases.

During his property examination the author collected six surface channel samples from the Audney, Caly and Caly North veins, and four duplicate samples from the 2011 drill cores. Results of this work show that the gold values in the verification samples are within reasonable ranges of those reported by GTA for the same drill core intervals. Larger differences in gold grades between the two sample sets, and even between the same verification samples analysed initially by a fire assay/atomic absorption method and later by a gravimetric method, are primarily due to a 'nugget effect' with the gold distribution and possibly to slight differences between analytical procedures and sample volumes.

No mineral processing or metallurgical testing has been done by GTA, and no such work has been documented in recent exploration or assessment reports on the Property. Mineral processing was obviously carried out during its early mining history but there are no available reports on any mineral processing results. There are no currently 43-101-compliant Mineral Resource estimates for the subject property.

## Conclusions and Recommendations

The Property is underlain by Archean-age metavolcanic and intrusive rocks that are regionally altered to greenschist facies and well-fractured by regional deformation and local strike-slip faulting. The syenitic and feldspar porphyritic intrusive rocks underlying the central portion of the Property are hydrothermally altered, pyritized and host numerous narrow quartz and quartz-carbonate ( $\pm$  tourmaline) veins and vein stockworks carrying significant to high grade gold mineralization. The intervening altered and pyritized intrusive host rocks also host substantial but lower grade gold values, often associated with pyrite mineralization.

Most of the recent diamond drilling was oriented to intersect known zones of gold mineralization perpendicular to their perceived trends without apparent regard to the attitude of the narrower, higher grade lode gold veins that had been exposed by trenching. Based upon the results from the Audney, Caly and Caly North vein sampling, GTA designed a tightly-spaced diamond drilling program in 2011 to intersect these veins and the intervening altered, pyritized and mineralized intrusive host rocks. The twelve drill holes intersected the three veins, and drill core samples returned significant to high gold values over a strike length of at least 30 m and downdip for at least 125 metres beneath the surface exposures of these veins.

Drill core samples of the three high grade vein structures returned gold values ranging from 2.50 gpt over 2 m to 131.99 gpt over 0.50 m for the Audney vein, and 3.05 gpt over 1 m to 760.15 gpt over 0.40 m for the Caly veins. When the various higher grade vein intercepts are included with the lower grade intervening mineralization it is apparent that the gold mineralization within the Afric Zone extends over relatively long intervals, such as: WB-11-07 with 1.04 gpt gold over 150.0 m (2.00 to 152.0 m), WB-11-09 with 1.25 gpt gold over 159.0 m (2.00 to 161.0 m), and WB-11-11 with 3.21 gpt gold over 149.5 m (2.50 to 152.0 m). These intervals are all drill core lengths, not true widths.

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It is the author's opinion that there are three obvious drilling target areas for near-term evaluation, including:

- 1) The strike and downdip extensions of the Audney, Caly and Caly North vein structures, including the intervening altered, pyritized and mineralized intrusive host rocks;
- 2) The area immediately east of the central Afric Zone near the old core pile; and
- 3) The intervening area between the Afric and No. 5 Zones.

Mineral exploration by its nature has attendant risks and uncertainties from the discovery stage through to advanced mine development. For this reason it is incumbent that the Company minimize the uncertainties and financial risks involved in possible advanced exploration drilling by first evaluating the gold resources within the Afric Zone prior to drill testing the several other known gold occurrences on the property. It is the author's opinion that the Northshore property has very good exploration potential for both lode and bulk-tonnage gold mineralization and further work is warranted. Accordingly, a two-phase exploration program has been recommended including:

**Phase I:** Property-wide prospecting with rock geochemical sampling, concurrent detailed geological and structural mapping, and whole rock analyses and petrographic studies to positively identify the spatial and genetic characteristics of the gold-bearing mineralization. Diamond drilling should continue evaluating the Afric Zone, testing the depth and strike extensions of the Audney, Caly and Caly North veins. This exploration work does not require government permitting.

**Phase II:** Pending a thorough review of the Phase I results, detailed diamond drilling should be carried out on the Afric Zone at a sufficient density to provide the necessary data for three-dimensional modelling of the mineralization. Exploratory diamond drilling should be conducted east of the 2011 drilling area along the Afric Zone and between the Afric and No. 5 zones, along the northeasterly trend of the Audney and Caly vein structures. Large samples should be collected from each of the Audney and Caly veins plus the pyritized and altered host rocks, and submitted for preliminary metallurgical testing. Following the Phase II work, the results should be thoroughly reviewed and a project report prepared documenting this exploration work for corporate and assessment credit purposes.

The estimated exploration budgets for each of the recommended two phases of further exploration work are CAD \$750,000 and \$1,850,000 respectively; for a total recommended budget of \$2.6 million.

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## 2 INTRODUCTION and TERMS OF REFERENCE

### 2.1 Introduction and Terms of Reference

The Northshore property is situated in the Priske Township, approximately 4 kilometres south of the town of Schreiber, Ontario, on the northern shore of Lake Superior. It is comprised of 5 patented and 2 unpatented mining claims covering 322.255 hectares or 796.31 acres. The mineral claims are owned by Balmoral Resources Ltd. of Vancouver, B.C. and operated by GTA Resources and Mining Inc. of Burlington, Ontario, subject to an Option Agreement dated July 24, 2011.

GTA retained Minorex Consulting Ltd. in November 2011 to carry out a property examination, review all available exploration results pertaining to this Property and determine whether the Property has merit and is worthy of further exploration. The author prepared this independent technical report in accordance with disclosure and reporting requirements set forth in the Canadian Securities Administrators' National Instrument 43-101 ('NI 43-101'), Companion Policy 43-101CP, and Form 43-101F1 (Standards of Disclosure for Mineral Properties) to be a comprehensive review of the exploration activities on the Property. It is intended to be read in its entirety.

The Effective Date of this technical report is March 9, 2012, unless otherwise stated.

### 2.2 Site Visit

The author, a consulting geologist employed by Minorex Consulting Ltd. and an independent qualified person according to NI 43-101, visited the Northshore property on November 2, 2011. The author examined several mineral showings on the property and collected ten verification samples of vein bedrock and drill core. In addition, all aspects of historical and recent exploration campaigns were reviewed with GTA geological personnel, including: local lithological and structural features, drilling results, sampling and shipping procedures, geological logging techniques, surveying methods and documentation procedures.

### 2.3 Sources of Information

GTA provided the author with available exploration data, including reports, maps, and other public and private information pertaining to the Property. In addition, the author has downloaded several pertinent geological and assessment reports that are publicly available from the Ontario Ministry of Northern Development and Mines' (aka 'Geology Ontario') website (<http://www.geologyontario.mndm.gov.on.ca/gosportal/gos>).

Most of the information referenced in this Report was documented by assessment reports prepared and filed by a variety of professional geologists on behalf of the various property owners at the time, and approved for assessment credit by the Ontario Ministry of Northern Development and Mines ('MNDM'). This information appears to be of good quality and the author has no reason to believe that any of the information is inaccurate. Technical reports and other documents used in the preparation of this Report are listed in the References section of this report.

## 2.4 Abbreviations and Units of Measure

Metric units are used throughout this report and any reference to funds are in Canadian Dollars (CAD\$). Market gold or silver metal prices are reported in US\$ per troy ounce. A list of abbreviations that may be used in this report is provided below.

%	per cent	l	litre
AA	atomic absorption	li	limonite
Ag	silver	m	metre
AMSL	above mean sea level	m <sup>2</sup>	square metre
as	arsenic	m <sup>3</sup>	cubic metre
Au	gold	Ma	million years ago
AuEq	gold equivalent grade	mg	magnetite
Az	azimuth	mm	millimetre
b.y.	billion years	mm <sup>2</sup>	square millimetre
CAD\$	Canadian dollar	mm <sup>3</sup>	cubic millimetre
cl	chlorite	mn	pyrolusite
cm	centimetre	Moz	million troy ounces
cm <sup>2</sup>	square centimetre	ms	sericite
cm <sup>3</sup>	cubic centimetre	Mt	million tonnes
cc	chalcocite	mu	muscovite
cp	chalcopyrite	m.y.	million years
cu	copper	NI 43-101	National Instrument 43-101
cy	clay	opT	ounces per short ton
°C	degree Celsius	oz	troy ounce (31.1035 grams)
°F	degree Fahrenheit	Pb	lead
DDH	diamond drill hole	pf	plagioclase
ep	epidote	ppb	parts per billion
ft	feet	ppm	parts per million
ft <sup>2</sup>	square feet	py	pyrite
ft <sup>3</sup>	cubic feet	QA	Quality Assurance
g	gram	QC	Quality Control
gl	galena	qz	quartz
go	goethite	RC	reverse circulation drilling
GPS	Global Positioning System	RQD	rock quality description
gpt	grams per tonne	sb	antimony
ha	hectare	SG	specific gravity
hg	mercury	sp	sphalerite
hm	hematite	st	short ton (2,000 pounds)
ICP	induced coupled plasma	t	tonne (1,000 kg or 2,204.6 lbs)
kf	potassic feldspar	to	tourmaline
kg	kilogram	um	micron
km	kilometre	US\$	United States dollar
km <sup>2</sup>	square kilometre	Zn	zinc

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## 2.5 Acknowledgements

The author wishes to thank Mr. Robert Duess, Director and Vice President of Exploration for GTA. Mr. Duess accompanied the author during his property visit and provided detailed exploration information on the Property.

## 3 RELIANCE ON OTHER EXPERTS

The author was not involved in any exploration work on the Property, and therefore this report has made extensive reference to the works undertaken by other qualified geologists and professional field personnel. Other non-project specific reports by qualified personnel have been referenced whenever possible. The information, conclusions, opinions and recommendations are based upon:

- information available to the author at the time of the preparation of this report;
- assumptions, conditions and qualifications as set forth in this report; and
- data, reports and other information provided by GTA, and other third party sources.

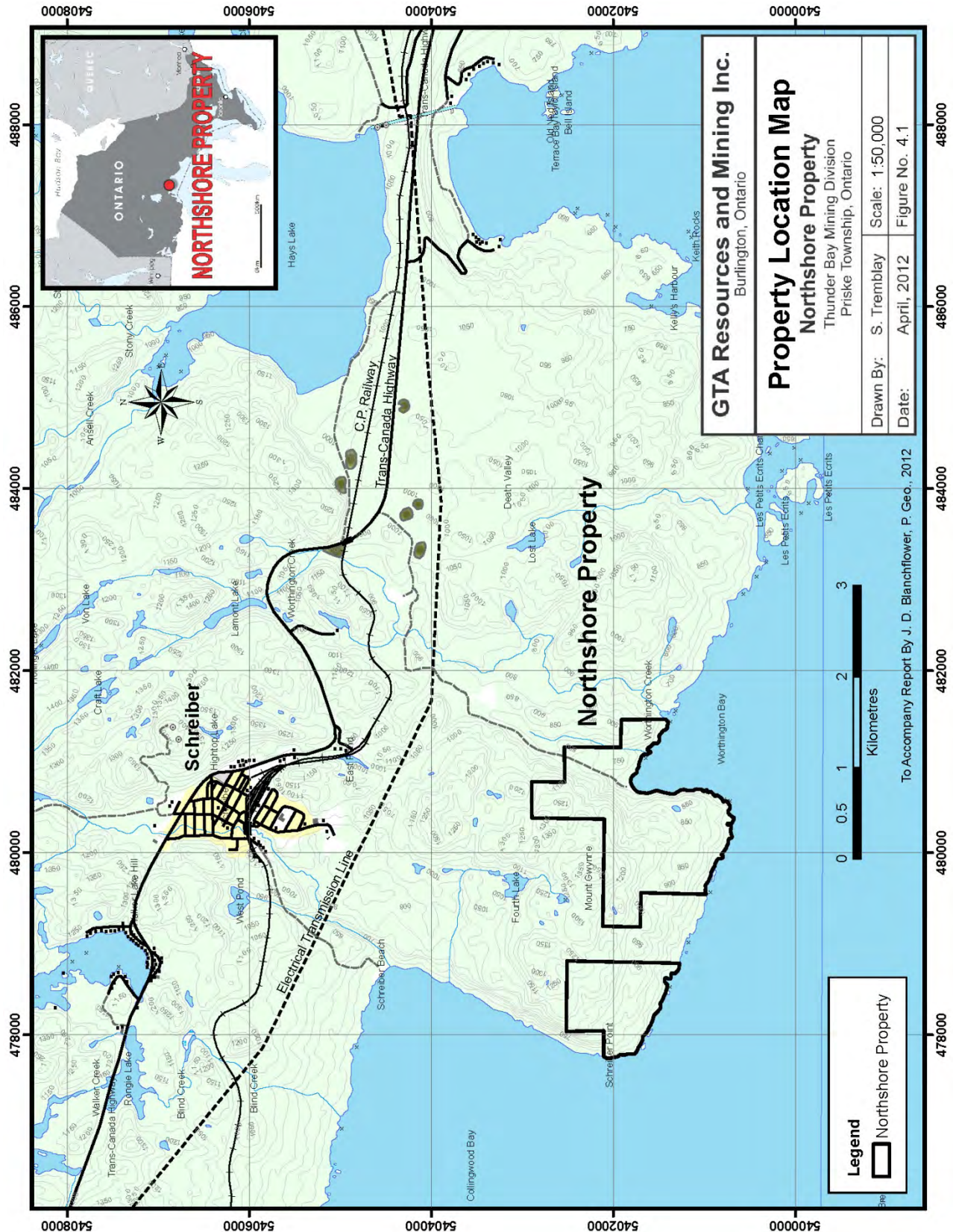
Mr. Duess accompanied the author during his property examination and provided information on all aspects of Property's historical and recent exploration work. The author has reviewed all of the readily available exploration and assessment reports pertaining to this property. This exploration information is of reasonable to good quality, and there is no reason to believe that any of the information is inaccurate.

The author has relied on Ms. Caroline Vallat, P. Geo., to analyse and document the procedures and analytical results from the 2011 Quality Assurance and Quality Control (QA/QC) work conducted by GTA. Her report on this work accompanies this report in Appendix IV.

On March 27, 2012, the author confirmed the status of the subject mineral claims with information provided on the MNDM mineral titles website ([http://www.mndm.gov.on.ca/mines/claimaps\\_e.asp](http://www.mndm.gov.on.ca/mines/claimaps_e.asp)). The subject mineral claims appear to be properly located, recorded and currently valid. However, such an online mineral claim check does not constitute a legal title opinion, and no legal title opinion has been provided to the author by GTA.

The author is not an expert in legal matters, such as the assessment of the legal validity of mining claims, mineral rights, and property agreements. The author did not conduct any investigations of the environmental or social-economic issues associated with the Northshore project, and the author is not an expert with respect to these issues. The author has relied on GTA to provide full information concerning the legal status of Northshore mining claims, as well as current legal title, material terms of all agreements, and material environmental and permitting information that pertain to the Property.

This report has been prepared for use by GTA Resources and Mining Inc. It is intended to be read as a whole, and sections or parts thereof should therefore not be read or relied upon out of context.



Technical Report on the Northshore Property, Priske Township, Ontario, Canada

## 4 PROPERTY LOCATION and DESCRIPTION

### 4.1 Property Description and Location

The Northshore property is situated in the Thunder Bay Mining Division within Priske Township, approximately 4 kilometres south of the town of Schreiber, Ontario, on the northern shore of Lake Superior. The geographic coordinates of the main mineral occurrence within the Property, called the 'Afric' Zone, are 48° 45' 54" North latitude by 87° 16' 30" West longitude, or UTM NAD83, Zone 16 U, 4797800 m East by 5401359 m North.

Five patented and two unpatented mining claims comprise the Property which covers 322.255 hectares or 796.31 acres. The Property is irregularly-shaped with one non-contiguous mining claim (Claim No. TB4211126). Figures 4.1, 4.2 and 4.3 of this report illustrate the location and configuration of the mining claims comprising the Property, and Table 4.1 documents the pertinent unpatented and patented mining claims' information.

### 4.2 Property Ownership

According to the Ontario Ministry of Northern Development and Mines online mineral titles website ([http://www.mndm.gov.on.ca/mines/claimaps\\_e.asp](http://www.mndm.gov.on.ca/mines/claimaps_e.asp)), Balmoral Resources Ltd. of Vancouver, B.C. is the registered owner of the two unpatented mining claims, TB4211126 and TB4211127, effective March 27, 2012. Based upon titles documents researched by Nordic Solutions and made available to the author by GTA, Balmoral Resources Ltd. is also the registered owner of the five patented mining claims BJ122, BJ123, LOC 1, LOC 2 and TB3719 effective March 15, 2012.

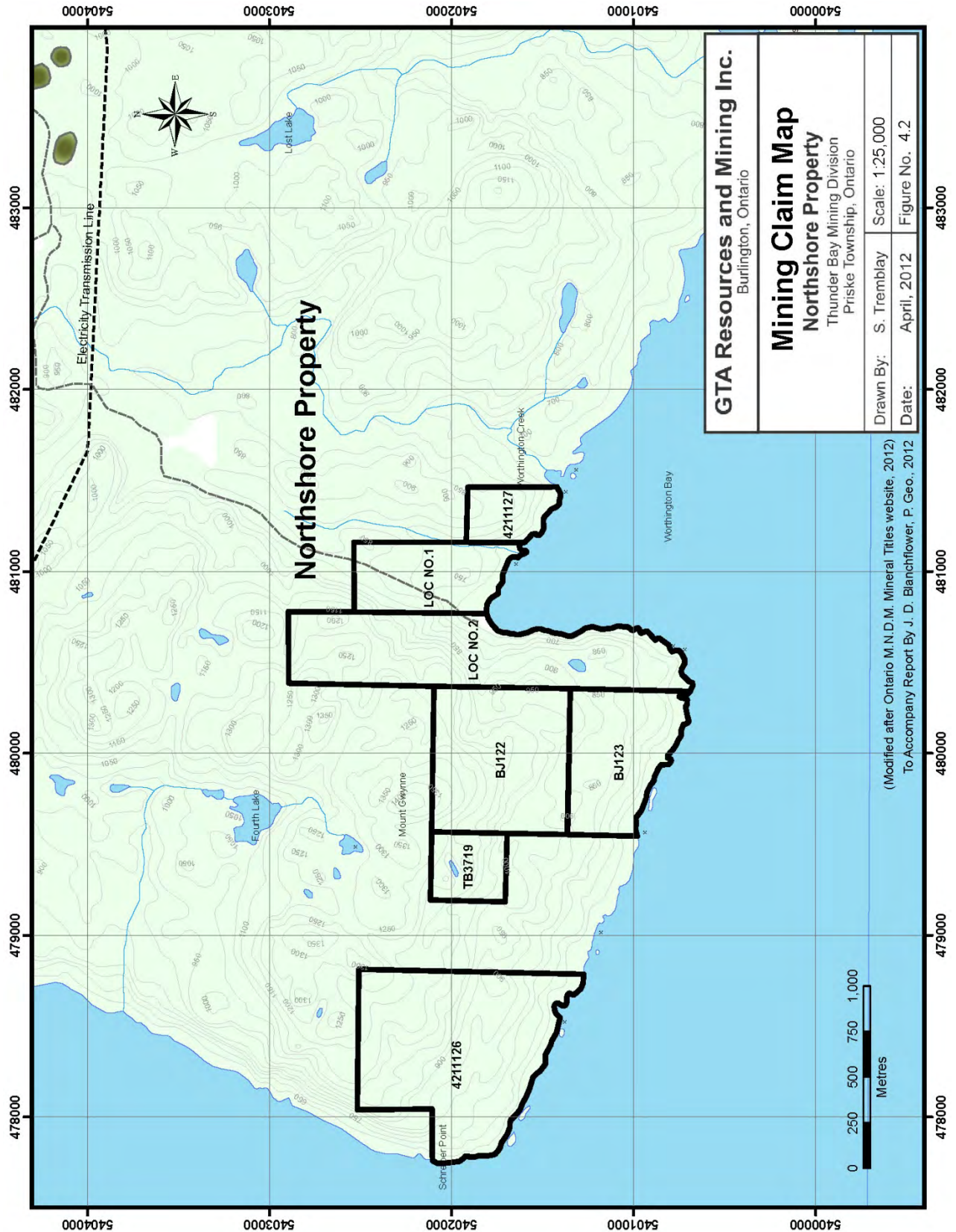
The following Table 4.1 contains all the pertinent claim numbers, areas, and record and expiration dates of the subject claims according to the MNDM (2012) and GTA (2012).

**Table 4.1: Patented and Unpatented Mining Claim Data**

Mining Claim No.	Owner (Client No.)	Area (ha)	Record Date	Expiry Date
BJ122	Balmoral Res. Ltd. (408919)	BJ122&123	Patented	Surface and Mineral rights
BJ123	Balmoral Res. Ltd. (408919)	= 97.125	Patented	Surface and Mineral rights
LOC 1	Balmoral Res. Ltd. (408919)	LOC 1&2	Patented	Surface and Mineral rights
LOC 2	Balmoral Res. Ltd. (408919)	= 97.125	Patented	Surface and Mineral rights
TB3719	Balmoral Res. Ltd. (408919)	16.005	Patented	Surface and Mineral rights
TB4211126	Balmoral Res. Ltd. (408919)	96.000	21-Nov-06	21-Nov-14
TB4211127	Balmoral Res. Ltd. (408919)	<u>16.000</u>	21-Nov-06	21-Nov-14
		322.255		

*Note: After Ontario M.N.D.M., Mineral Titles Online website (effective March 27, 2012) and Nordic Solutions patented mining claim titles documents effective March 15, 2012.*





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On July 24, 2011 GTA Resources and Mining Inc. entered into an Option Agreement (the 'Agreement') with Balmoral Resources Ltd. to acquire up to a 70% interest in the mining claims comprising the Northshore property. Under the terms of the Agreement, GTA may earn an initial 51% interest in the Property by making cash payments in the amount of \$50,000, issuing 2,500,000 common shares of GTA, and incurring \$2,500,000 in eligible exploration expenditures over a three-year period. A cash payment of \$10,000, issuance of 1,000,000 common shares of GTA and a one year exploration expenditure of \$350,000 are firm commitments by GTA under the terms of the Agreement.

Upon exercising the first aforementioned option, GTA has the right to proceed with a second option under which GTA would have the right to earn an additional 19% interest in the Property by making an additional cash payment of \$100,000, issuing an additional 1,000,000 common shares of GTA and incurring additional exploration expenditures totalling \$3,000,000 over a subsequent 24-month period.

### **4.3 Location of Mineralization**

Exploration programs carried out by Noranda Exploration Ltd. in 1990, by Cyprus Canada Inc. in 1997 and by American Bonanza Gold Corp. in 2006 and 2007 have identified several gold-bearing vein and stockwork occurrences throughout the Property. The main 'Afric' Zone, comprising the 'Audney', Caly' and 'Caly North' vein structures, has received the most exploration attention. See Figures 4.3, 7.3 and 9.2 for the locations of the various mineralized showings.

### **4.4 Water and Surface Rights**

A permit to use local waters is not required during preliminary exploration work. If exploration work increases to include multiple drilling rigs requiring considerable water use, a 'Permit to Take Water' would be required.

The patented claims, namely 'BJ122', 'BJ123', 'LOC No. 1', 'LOC No. 2' and TB3719' hold both surface land and subsurface mineral rights, but the unpatented mining claims 4211126 and 4211127 only convey subsurface mineral rights.

### **4.5 Environmental, Reclamation and Permitting Issues**

The author is not aware of any current or outstanding environmental or permitting issues that would impact near-term exploration activities on the Property. To date no permitting has been required to explore the property. However, all current environmental and mining regulations for the Province of Ontario should be respected. Future exploration work, possibly including extensive resource definition drilling, bulk sampling and/or other advanced exploration activities, would require an 'Advanced Exploration Closure Plan' ('AECIP') from the Ontario Ministry of Northern Development and Mines and a 'Permit to Take Water' from the Ontario Ministry of Environment.

There are no known First Nations land title issues in this region. The Property is located on traditional lands of the Pays Plat First Nation. GTA has continually consulted with the Pays Plat community since June 2011, and has developed a good working relationship with the elders of the band and the community.

According to the Ontario Ministry of Natural Resources' website 'Species at Risk in Ontario' ('SARO'), the following species may range within the region but the author is not aware whether any of these species are present within the Property.

Table 4.2: Species at Risk

Taxonomy	Common Name	Scientific Name	OMNR Status
Birds	Bald Eagle	Haliaeetus leucocephalus	SC
Birds	Black Tern	Chlidonias niger	SC
Birds	Bobolink	Dolichonyx oryzivorus	THR
Birds	Canada Warbler	Wilsonia canadensis	SC
Birds	Chimney Swift	Chaetura pelagica	THR
Birds	Horned Grebe	Podiceps auritus	SC
Fish	Lake Sturgeon (NW Ontario population)	Acipenser fulvescens	THR
Fish	Lake Sturgeon (Upper Great Lakes/St. Lawrence population)	Acipenser fulvescens	THR
Insects	Monarch	Danaus plexippus	SC
Mammals	Mountain Lion or Cougar	Puma concolor	END
Fish	Northern Brook Lamprey	Ichthyomyzon fossor	SC
Birds	Olive-Sided Flycatcher	Contopus cooperi	SC
Birds	Peregrine Falcon	Falco peregrinus	THR
Birds	Short-Eared Owl	Asio flammeus	SC
Birds	Yellow Rail	Coturnicops noveboracensis	SC

### Terminology

	OMNR Status	Definition
EXP	Extirpated	A species that no longer exists in the wild in Ontario but still occurs elsewhere.
END	Endangered	A species facing imminent extinction or extirpation in Ontario which is a candidate for regulation under Ontario's ESA.
THR	Threatened	A species that is at risk of becoming endangered in Ontario if limiting factors are not reversed.
SC	Special Concern (formerly Vulnerable)	A species with characteristics that make it sensitive to human activities or natural events.



Figure 4.3  
Infrastructure Map  
Northshore Property  
Thunder Bay Mining Division  
Priske Township, Ontario

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## **5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE and PHYSIOGRAPHY**

### **5.1 Accessibility**

Vehicle access to the Property is possible via a four-wheel drive gravel road, called the 'Worthington Bay Road', which joins Trans-Canada Highway No. 17 approximately 4.4 kilometres east of the town of Schreiber. The Worthington Bay road leads 5 kilometres south to the shore of Lake Superior where the old Northshore mill was located. The 2011 drilling sites within the Afric mineralized zone are situated approximately 1.5 km west of the Worthington Bay road and accessed via an upgrade 4-wheel drive road. Figure 4.2 and 4.3 show the local access roads, highways and infrastructure.

The city of Thunder Bay has the closest commercial airport to the town of Schreiber and the Property. There are regular daily flights to Thunder Bay from Toronto and elsewhere in Canada, and it is a 260 km, or a 3-hour drive, from Thunder Bay to Schreiber.

### **5.2 Climate and Vegetation**

The Schreiber area has a humid continental climate with average mean temperatures ranging from -20° C (January) to +20° C (July), and an annual average precipitation of 840 mm. Local lakes will usually start to freeze over in mid-November, and thaw in early to mid-May. Exploration work could be carried out year-round.

Most of the Property is extensively covered by a mixture of spruce and fir trees with moderate undergrowth in poorly-drained areas. Elsewhere, birch and alder with thinner undergrowth cover hillocks.

### **5.3 Local Resources and Infrastructure**

There is no useable surface mining infrastructure on the Property. The old mill on the shore of Lake Superior is completely dismantled and the old shaft on the Property is flooded to its collar.

The nearby cities of Marathon, to the east, and Thunder Bay, to the west, are dominated by the mining and logging industries respectively where an experienced labour pool and all types of exploration and mining services are readily available.

The nearby town of Schreiber has a population of 1,126 people (2011 census: Wikipedia) and is located on the Trans-Canada Highway 17 beside the Canadian Pacific railroad. There is a major electrical transmission line on the southside of Schreiber, about 2 km north of the Property.

There are adequate areas within the Property available for potential tailings storage, waste disposal and processing plant sites.

## 5.4 Physiography

The Property is situated on the rugged northern shore of Lake Superior with considerable relief from the lake shore. According to Carter (1988), Cenozoic glaciation, local faulting (i.e. Worthington Bay Fault) and the granitic and metavolcanic country rocks have all contributed to the local cliffs and hilly topography within the claim holdings. Elevations range from approximately 625 m along the shore of Lake Superior to 1,375 m along the northern boundary of mining claim BJ122, near the summit of Mount Gwynne (see Figure 4.2).

Local drainage is southward into Lake Superior. The reaches of the local creeks are often straight for long distances owing to the influence of local faults and lineaments.

Bedrock exposures are quite common along cliffs, steep slopes and ridge tops, but elsewhere outcrop is scarce except where exposed by road cuts or trenches.



**Photograph No. 5.1: View of the Afric Zone looking northward to Mount Gwynne on the skyline**

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## 6 HISTORY

The following summary of the exploration history of this property has been compiled from the reports by Carter (1988), Drost (1997) and LeGrand (2009).

**1898:** Gold was first discovered on the BJ 122 mining claim by Peter McKellar. The mining claim was surveyed in 1898 and patented by him in 1903 (Carter, 1988).

**1898 to 1932:** In 1920 the BJ122 patented claim was optioned to W. L. Longworth (later McKellar-Longworth Ltd.) who operated the property and discovered 14 veins, one of which is gold-bearing called the 'Main Vein'. The following quote is from the geological report by Carter (1988, p. 134).

*"This vein (Main Vein) is an auriferous quartz vein from 1 to 18 inches wide (3 cm to 46 cm) wide and was about 515 m long, terminated at both ends by faults and hosted in intermediate metavolcanics and hornblende syenite. The trend of the vein is N 80° W with a dip of -55° to the south. Hopkins (1922) reported that the vein occupies a fracture in hornblende syenite and felsic and intermediate metavolcanics. It was mineralized with visible gold, pyrite, chalcopyrite, pyrrhotite, galena, arsenopyrite and tetradymite. "A channeled sample across eighteen inches of quartz in which no gold could be seen, gave, on assay \$40.00 in gold per ton" (Hopkins 1922, p.13, gold at \$22.69 per ounce, 1921 price). Development work on the Main Vein consisted of the driving of adits and diamond drilling. The underground work consisted of workings on three levels and one sub-level. Three adits were driven on the vein system. The No. 1 adit was driven westerly on the eastern end of the vein to form the second level, for a distance of 1100 feet (335 m) at an elevation of 975 feet (297 m). One hundred feet of cross-cutting were driven from the adit which followed the vein for a total length of about 550 feet (168 m) at three points. At 2 of these points small stopes 240 feet (73 m) and 140 feet (43 m) long had been started and carried to a vertical height of about 35 feet (11 m). A 15-foot (5 m) winze had been sunk on the vein, 15 feet (5 m) from the portal of the adit and two shallow shafts about 50 feet (15 m) south of the portal were sunk. The No. 2 adit was located at the western end of the vein, about 1800 feet (549 m) west of the No. 1 adit, and at an elevation of 1150 feet (351 m) forming the first level. It was driven eastwards onto the vein for a distance of 700 feet (213 m), and two stopes were made, one for a vertical distance of 80 feet (24 m) to the surface. From this first level a 130-foot (40 m) winze inclined at 27° west was sunk to a lower level called the sub-level, at an elevation of 1100 feet (335 m), 50 feet (15 m) vertically below. This sub-level was 250 feet (76 m) long and partly followed the vein. From this sub-level ore was stoped for a distance of 175 feet (53 m) mining out all the ore. A third adit, No. 3 adit, located 250 feet (76 m) south of the No. 2 adit and 100 feet (30 m) below it, was driven northeastwards into the hillside onto the vein to form the third level. It followed the vein for 200 feet (61 m) in an easterly direction. The portal of this adit was thus at an elevation of 1050 feet (320 m) forming a level at this horizon on the vein. It was connected by a raise to the 1100 foot (335 m) sub-level. Because of the presence of a fault beneath the sub-level this work was unsuccessful and was abandoned after about 400 feet (122 m) of lateral development. Diamond drilling in 1939 consisted of 10 diamond drill holes by P.A.L Exploration Limited into the vein to test its persistence at depth. The total length drilled was in excess of 2200 feet (671 m) and the Main Vein was intersected at 180 feet below the first level and the occurrence of gold at depth was confirmed."*

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**1933 to 1937:** North Shores Gold Mines Limited was formed and a 25-ton mill was built in 1934 at Worthington Bay on the shore of Lake Superior. Gold production began in 1935. Hand-sorted ore was trucked from the adits to the mill where the gold was recovered in an amalgam and a heavy concentrate. North Shores Gold Mines Limited was renamed North Shore Mines Limited in 1936. Production ceased in 1937 by which time 3,808 tons of ore were milled yielding 2,441 ounces of gold and 226 ounces of silver. Recovery of gold averaged 0.64 ounces of gold per ton of ore milled (Carter, 1988). In 1939 R. W. Phelps reportedly acquired the Property.

**1960 to 1979:** In 1960 the original Northshore property, comprised of a block of five contiguous patented claims numbered: Loc. No. 1, Loc. No. 2, BJ 122, BJ 123 and TB 3719, was purchased by Trio Mining Exploration Limited. In 1969 the property was apparently held by G. W. Phelps, and in 1973 the Ontario Charter of Trio Mining Exploration Limited was dissolved. The Property remained in good standing until December 31, 1979 (Carter, 1988).

**1980:** Autotrac Limited acquired all of the Northshore patented and unpatented mining claims.

**1988 to 1992:** Noranda Exploration Company Ltd./Hemlo Gold Inc. optioned the Northshore property and carried out geophysical, geochemical, and geological surveying. Trenching and rock sampling were undertaken on old trenches and other exploration targets resulting in discovery of the 'Afric' Zone. Twenty diamond drill holes, totalling 2494.6 m, were completed. Noranda Exploration Company Ltd. estimated a geological resource of 2 million tonnes grading 2.2 gpt gold at the Afric Zone (Drost, 1997). ***This resource estimate is a non-compliant 43-101 resource estimate; it is obsolete and is only documented for historical reference.***

**1995:** Santa Fe Mining optioned the Property but terminated their Canadian operations before completing any work (Carter, 1988).

**1997:** Cyprus Canada Inc. conducted an exploration program on the Northshore property that included: establishing a widely-spaced survey control grid; geophysical surveying (IP, VLF-EM and magnetics); humus geochemical surveying (773 samples); geological mapping and prospecting. Power stripping and rock geochemical sampling programs (977 samples) focused on extending the Afric Zone to the west and east. Diamond drilling, 7 holes totalling 1,131.3 metres (571 core samples), was carried out during early August to early September, 1997 to extend the Afric Zone westward and to test the Northshore vein. According to Drost (1997), "*The property remains underexplored for a high grade underground Au model, similar to the historic production of the property. Numerous narrow, high grade zones on the property have been under evaluated. The potential for expanding these zones is considered high.*"

**1999 to 2005:** International Taurus Resources Inc. acquired an option to purchase 100% of the patented Northshore property from Autotrac Limited, including the surface rights. The terms of agreement included a cash down payment to acquire the option, plus two additional payments one year and two years later to complete the purchase. Autotrac Limited retained a 2% Net Smelter Return royalty for the first one million ounces produced from the property, then 3% for the next two millions ounces produced, and finally 5% for all production in excess of 3 million ounces. In March 2005, International Taurus Inc. joined American Bonanza Golding Corp. becoming American Bonanza Gold Corp.



**2005 to 2007:** American Bonanza Gold Corp. drilled eleven diamond drill holes (NS 06-01 to -11), totalling 3,163 m, in 2006, and nine diamond drill holes (NS 07-01 to -09) , totalling 1,367 m, in 2007. In addition, they excavated six trenches on their 'No. 3' Zone and did some overburden stripping on their 'No. 5' southern extension zone. This trenching work was carried out in November and early December 2007 but the trenches were not mapped or sampled due to a heavy snow fall. Such work was proposed for 2008 but there no reports of such work being carried out.

**2008:** Two American Bonanza Gold Corp. personnel prospected and sampled the eastern and southern portions of the non-contiguous mining claim 4211126. No significant results were reported but their work only covered the extreme northern, southern and eastern portions of the claim.

**2010 to 2011:** American Bonanza Gold Corp. transferred 100% of their interest in the Property to Balmoral Resources Ltd. on January 26, 2011. No reported exploration work was carried out by Balmoral until the option agreement with GTA in July 2011.



**Photograph No. 6.1: Site of the old Northshore mill on the shore of Lake Superior**

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## 7 GEOLOGICAL SETTING and MINERALIZATION

The Schreiber area has been mapped by several Ontario government geologists since 1900. In 1900 E. V. Neelands accompanied an Ontario Land Survey party in the Long Lake - Pic River area. Then in 1909 there was a reconnaissance geological survey of the area between the Pic and Nipigon Rivers by W. H. Collins. In 1920 T. L. Tanton referred to the geology of the area in his report on the Nipigon-Schreiber District, and in the same year P. E. Hopkins carried out a reconnaissance survey of the Schreiber-Duck Lake area. Between 1936 and 1939 G. A. Harcourt and M. W. Bartley mapped the Schreiber area; the last systematic geological mapping work until 1979 when M. W. Carter (1988) began re-mapping the Schreiber area.

Figures 7.1 and 7.2 of this report illustrate the regional geological and structural settings of Schreiber area (modified after Carter, 1988). Figure 7.3 shows the geological setting of Northshore property within Priske Township (modified after Carter, 1988).

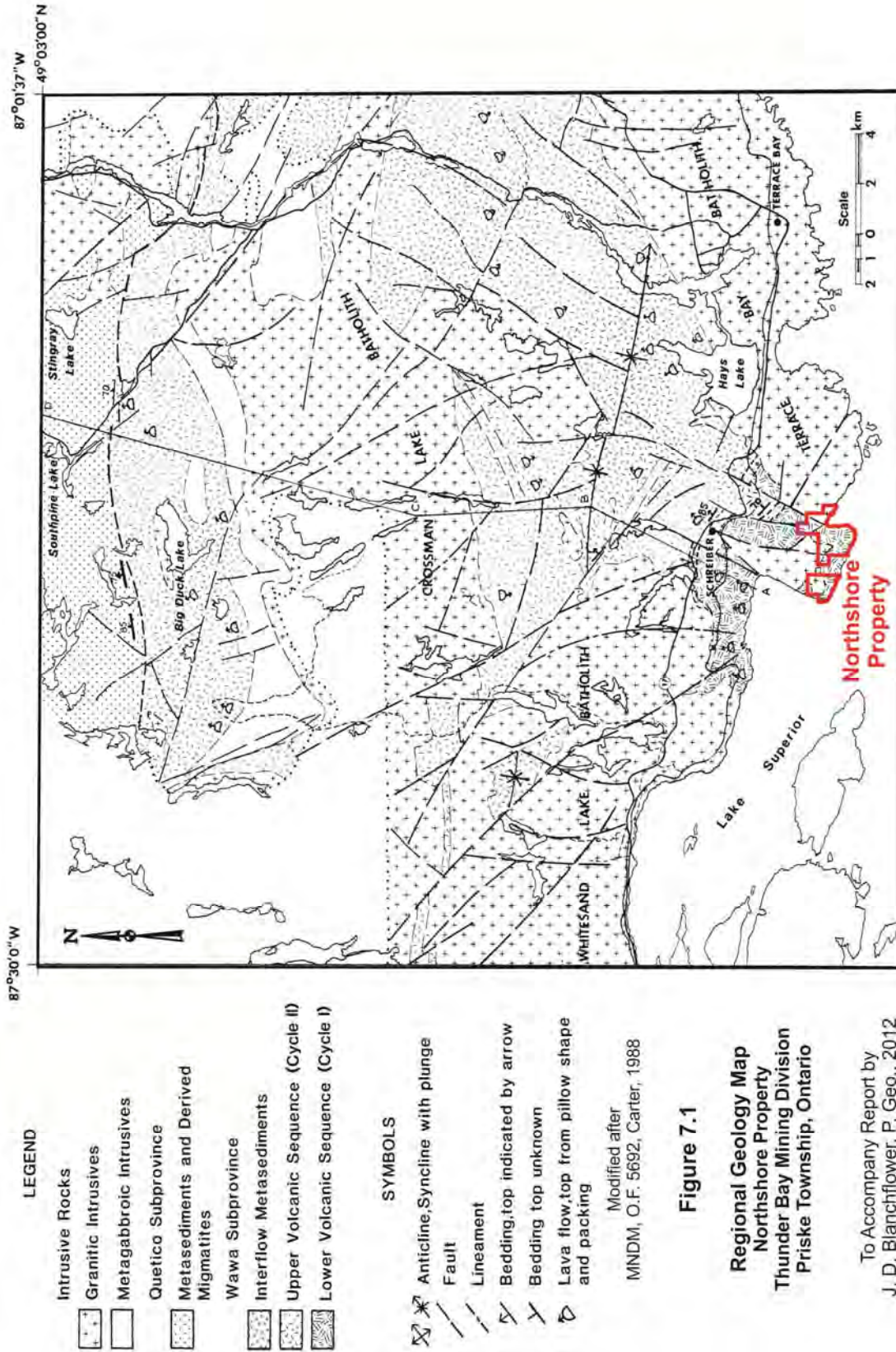
### 7.1 Regional Geology

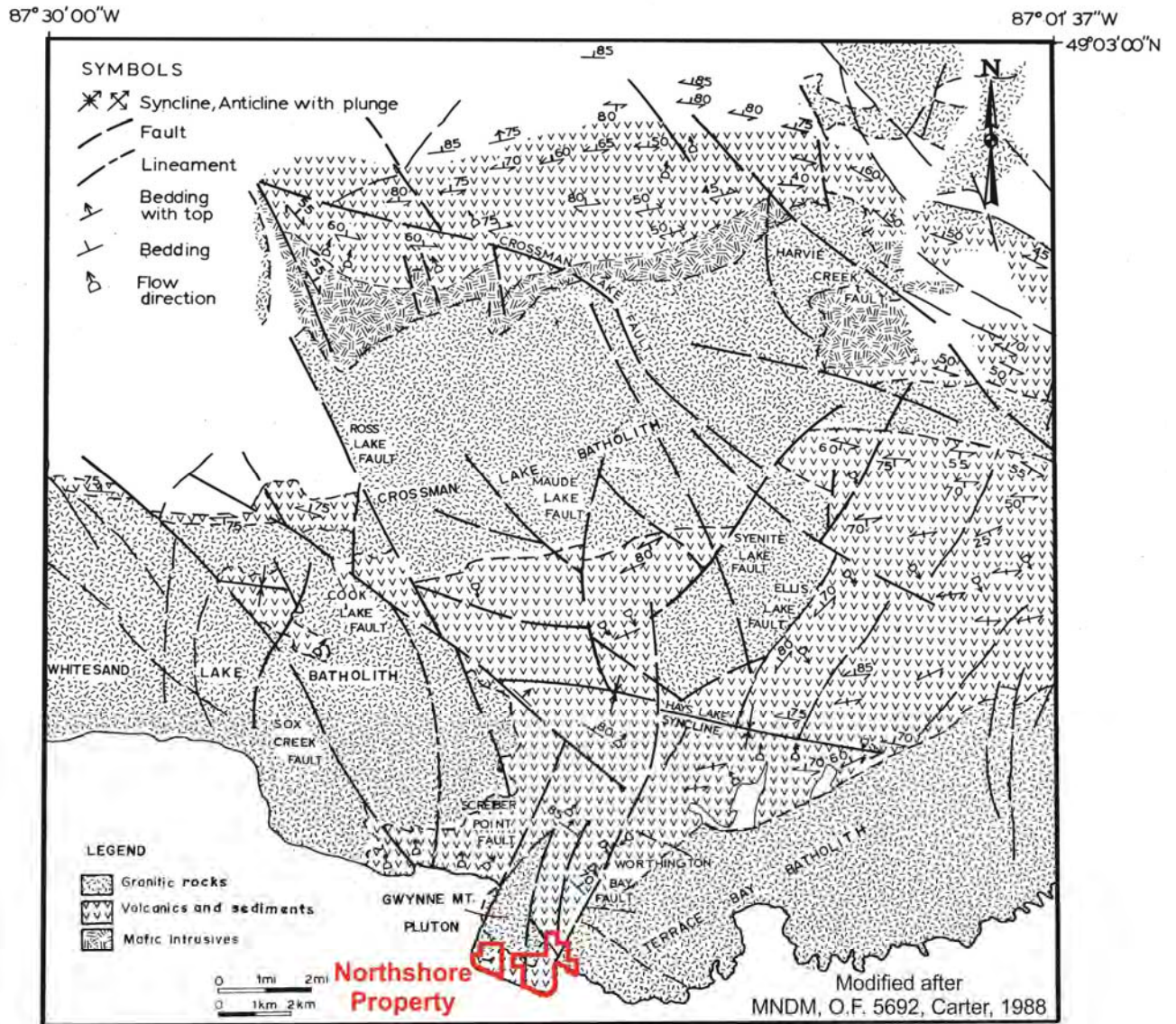
The Schreiber area is underlain by Archean-age rocks that form the western portion of the Hemlo-Schreiber greenstone belt of the Wawa Subprovince within the Superior structural province (see Figures 7.1 and 7.2). According to Carter (1988), the geology of the Schreiber area is as follows.

*"The consolidated rocks of the (Schreiber) map-area are of Precambrian age and range from Archean to Proterozoic.*

*The Archean rocks of the Wawa Subprovince are predominantly subaqueous mafic tholeiitic metavolcanics which overlie a less voluminous, predominantly calc-alkalic sequence, both of which are interlayered with minor clastic and chemic metasediments. Two volcanic cycles are present separated by a marker horizon of sulphide-facies ironstone. The lower cycle exceeds 2.3 km in thickness and underlies the southern margin of the (Schreiber) map area, south of Highway 17. It consists of interlayered tholeiitic basalts and calc-alkalic andesite and dacite and tholeiitic or calc-alkalic rhyolite. The upper cycle is in excess of 12 km thick and underlies much of the northern part of the (Schreiber) map-area north of Highway 17. The upper cycle consists predominantly of tholeiitic basalt with subordinate calc-alkalic andesite and dacite, and tholeiitic or calc-alkalic rhyolite. These rocks are folded about an east-southeast trending synclinal axis which plunges to the east-southeast. Wawa Subprovince metavolcanic rocks are overlain, in the northeast of the map-area by metawackes and meta-arenites of the Quetico Subprovince, which are tightly folded along east-west axes. Both subprovinces are intruded by gabbroic rocks, an ultramafic intrusion, granitic batholiths and Archean to Proterozoic diabase dikes following three trends. The grade of metamorphism increases from greenschist facies in the south to amphibolite facies in the north and has affected the metavolcanics, metasediments and mafic intrusions. Contact metamorphism, to pyroxene-hornfels rank, has been superimposed on the greenschist facies by the Terrace Bay Batholith. A pervasive foliation characterizes most of the rocks of both subprovinces, the foliation being parallel to the primary layering in the rocks.*

*Proterozoic rocks include remnants of Animikie Group clastic and chemical sediments, which outcrop along the north shore of Lake Superior in the southwestern part of the area. Archean to Proterozoic rocks comprise narrow diabase dikes which cut all the Archean rocks, and diabase sills which intrude the Proterozoic Animikie Group. The sills are Proterozoic in age (Logan sills) and some of the dikes may be of this age.*





**Figure 7.2**  
**Regional Structural Map**  
**Northshore Property**  
**Thunder Bay Mining Division**  
**Priske Township, Ontario**

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*Cenozoic rocks comprise Pleistocene morainal, glaciofluvial and glaciolacustrine sands and gravels and Recent alluvial deposits.*

*Faults trending northwesterly, northeasterly and northerly are a characteristic feature of the map-area. A strong vertical component to movement on the faults is interpreted to explain the preservation of supracrustal rocks in the eastern part of the map area.*

*Mineral deposits comprise precious metal (gold and silver) veins in fractures, and shears associated with the mafic metavolcanic rocks, and the granitic rocks; molybdenum-copper vein deposits associated with the border zones of the granitic batholiths; nickel-copper deposits associated with a gabbro intrusion; and polymetallic base-metal copper-lead-zinc-silver occurrences associated with clastic and chemical interflow metasediments.”*

Figures 7.1 and 7.2 illustrating the regional geology and structural setting in the Schreiber-Terrace Bay area have been modified after maps contained within MNDM Open File 5692 by Carter (1988).

## **7.2 Property Geology**

The property geology was first documented in recent assessment reports by Mackie (1989) for Noranda Exploration, although the assessment work was largely carried out on the adjoining ground to the west, called the ‘Hayes Lake’ property. Cyprus Canada (Drost, 1997) conducted detailed prospecting and geological mapping over their ‘Northshore’ property which included the eastern patented mining claims of the current Property. In 2009, American Bonanza personnel mapped and prospected the non-contiguous western claim 4211126, and this work was reported by LeGrand (2009). The geological mapping and prospecting results from these works are as follows.

### **7.2.1 Lithology**

Geological mapping during the 1997 field season by Cyprus Canada personnel on the eastern claim holdings reported that this area is underlain by four main lithologies that were described by Drost (1997) as follows:

1. *“Syenite: medium to dark greyish black color with variable dark brick red potassic overprint; medium grained intrusive grain size and textures; generally unaltered and massive fabric. This lithology is a minor host of Afric Zone mineralization.*
2. *Feldspar (+/- Quartz) Porphyry: medium greyish to buff-colored, fine-grained, porphyritic matrix with medium- to coarse-grained feldspar (+/- quartz shards) phenocryst phase; identified mainly in the Noranda grid area (covering the Afric Zone); typically exhibits sericitic matrix. This lithology is the main host of known Afric Zone mineralization.*
3. *Intermediate to Felsic Volcanics: light to medium greyish, buff color; typically fine-grained sericitic matrix; typically with tuffaceous characteristics including: multiphase, broken crystal fragments (crystal tuff). This unit may be confused locally with feldspar (+/- quartz) porphyry depending on bulk crystal content.*
4. *Mafic Volcanics: medium to dark greyish green colour; fine-grained to locally metamorphosed, amphibolitic medium-grained groundmass; displays typical mafic flow textures such as pillows, vesicles, etc.; moderately chloritic; generally fresh and unaltered.*

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*The four main lithologies are cut by various intrusive dyke/sill bodies including diabase dykes, gabbroic sills, lamprophyre dykes, quartz-feldspar porphyry dykes and rare diatreme breccia dykes. Of these, the barren diabase dykes and quartz-feldspar porphyry dykes which were locally sulphide mineralized and weakly auriferous, were common in the main Afric Zone area on the Noranda grid.”*

According to Carter (1988), the eastern claim holdings are locally underlain by Archean-age rocks of andesitic and dacitic composition. This unit is the equivalent of the mafic volcanic unit described above by Drost (1997). Carter (1988) describes these volcanic rocks as being grey to dark-grey on the fresh surface and light-grey on the weathered surface and best developed in the eastern half of the Schreiber Peninsula south and southeast of Schreiber.

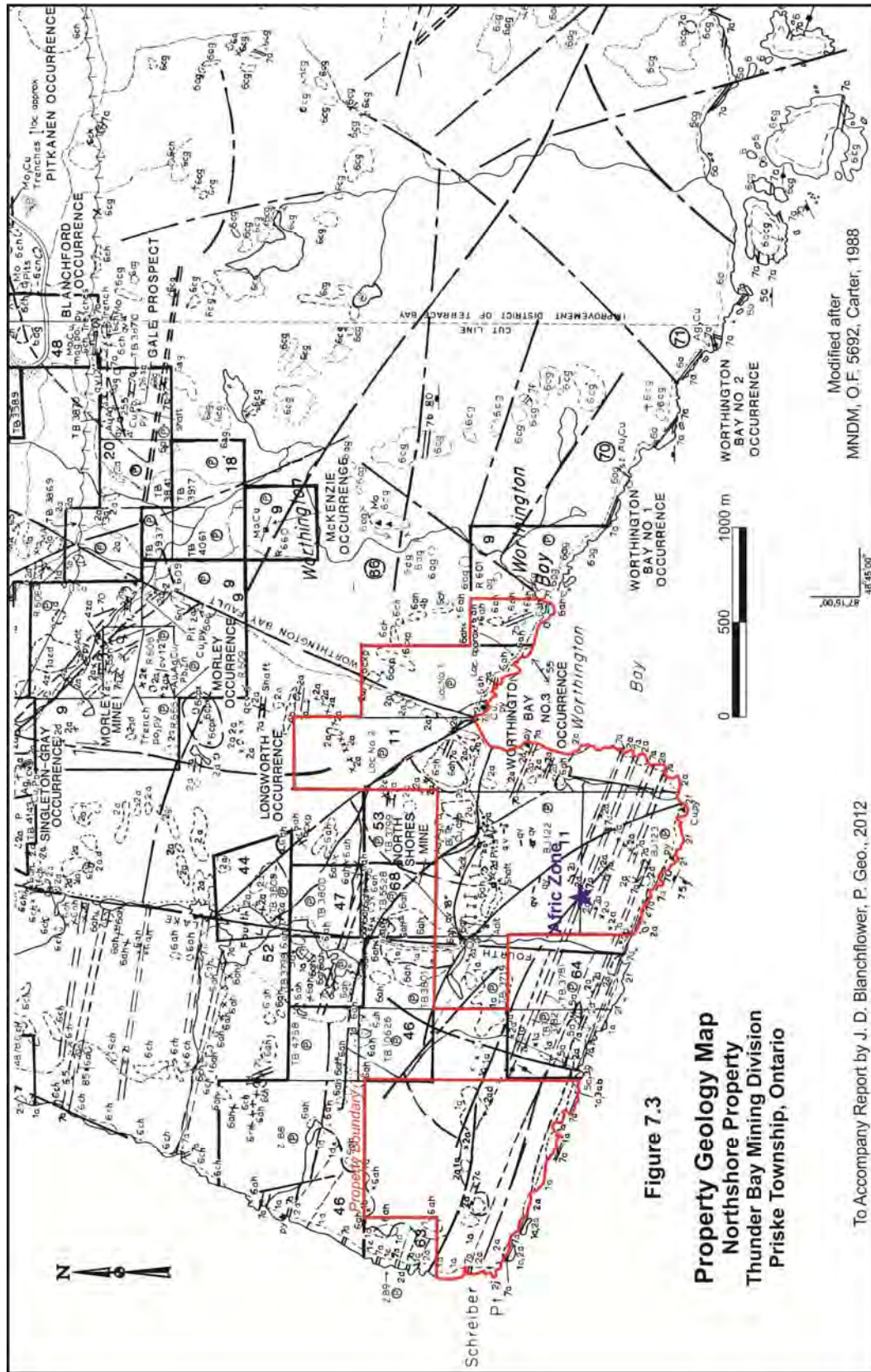
They have been altered to greenschist facies, vary in thickness up to 3 km, and are almost entirely aphanitic structure-less rocks without mafic interlayers. Massive, aphanitic to fine-grained andesitic and dacitic rocks are believed to be flows because of the absence of fragmental textures seen on outcrops. No flow structures were observed by Carter (1988) on any of the outcrops.

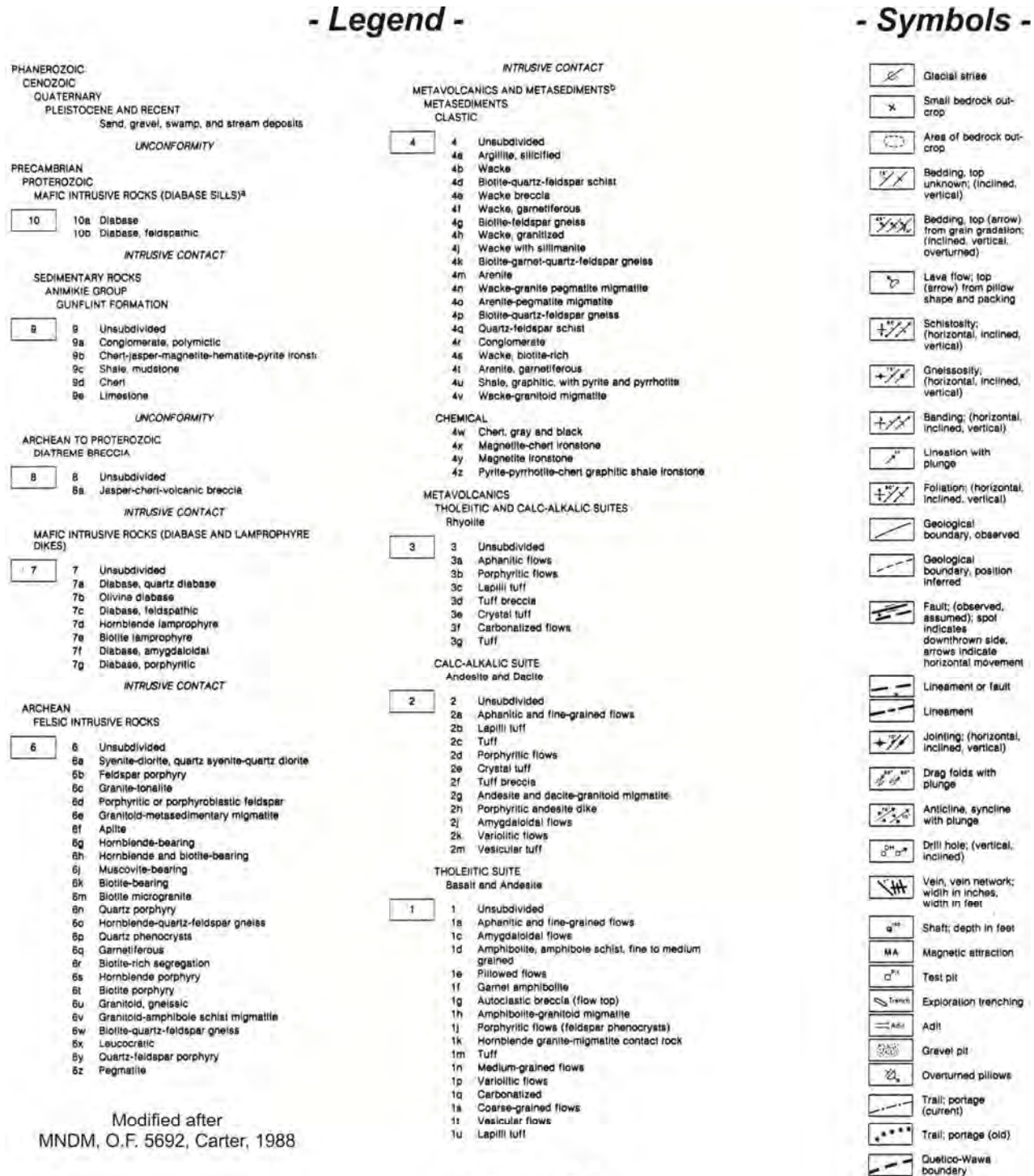
According to Carter (1988), megascopically aphyric, megascopically porphyritic and amygdaloidal felsic volcanic rocks may occur locally. The megascopically aphyric rocks have completely sericitized pseudomorphic feldspars. The ferromagnesian phenocrysts are converted to aggregates of chlorite, brown biotite and opaque grains. Where recrystallization has been more pronounced, green pleochroic actinolite needles have developed in the matrix. Megascopically porphyritic rocks are light grey to dark grey on the fresh surface and light grey and buff on the weathered surface. The phenocrysts consist of irregular, subhedral and euhedral quartz, dusty brownish euhedral, subhedral grains and irregular areas of plagioclase which are sericitized, saussuritized and may contain irregular areas of pale green chlorite and carbonate, and euhedral, subhedral and irregular clotty areas of ferromagnesian minerals now consisting of green pleochroic actinolite. The amygdaloidal felsic rocks are uncommon but similar in appearance and weathering characteristics to the megascopically aphanitic and fine grained rocks. They contain amygdules of mosaic quartz and white carbonate.

Carter (1988) describes the Archean-age intermediate to felsic volcanoclastics, equivalent of the intermediate to felsic volcanics described by Drost (1997), as being massive, light grey, fine-grained to aphanitic rocks on the fresh surface. They are reportedly composed of a “*recrystallized granoblastic aggregate of quartz and untwinned dusty brownish plagioclase feldspar some of which is sericitized. Granoblastic grains of green chlorite, brown biotite, colourless muscovite, carbonate, epidote and titanite are present.*”

Lapilli tuffs are reportedly uncommon in the area. They are described by Carter (1988) as being “*grey or pink rocks on the fresh and weathered surfaces with subangular and subrounded lithic fragments. The rocks occur interlayered with the mafic metavolcanics at various horizons in both the lower and upper volcanic sequences; west of Schreiber in the lower sequence and in the eastern half of the upper volcanic sequence. These lapilli tuff units vary in thickness from 60 m to 80 m and are up to 100 m in lateral extent. The absence of bedding structures in these rocks suggests that they are pyroclastic fall-back tuffs.*”

The two main intrusive rocks within the Property and hosts of the Afric Zone mineralization, the syenitic and feldspar (+/- quartz) porphyritic units, are described by Carter as occurring in other parts of his map-area but he did not map them within the Property area.







Carter (1988) mapped and described the diabase dykes that intrude all of the Archean-age volcanic, volcanoclastic and intrusive rocks within the Property as follows.

*“Diabase occurs as dikes varying from about 8 m to about 91 m wide. There are four trends of diabase dikes in the map area: (1) west-northwest to east-west, (2) north-south, (3) north-east, and (4) northwest.*

*The west-northwesterly to east-west dikes are the most numerous and are most common along the southern margin of the map-area intruding both volcanic and granitic rocks. They are not as common in the northern part of the map-area. These are black massive, medium-grained, non-porphyrific rocks with a modal colour index of about 40. They are usually well jointed. The weathered surface of these rocks is reddish brown, the fresh surface is black, and all the specimens examined were moderately magnetic. In thin section these rocks show intergranular ophitic and subophitic textures and comprise plagioclase (labradorite An 56 to An 65) and common clinopyroxene which is usually anhedral, brownish and twinned. The clinopyroxene is commonly marginally altered to greenish brown hornblende, uraltite and yellowish green and green chlorite, and brownish biotite. The plagioclase in places is fresh and in places altered and shows composite twinning comprising Carlsbad, albite-carlsbad and acline A twinning. Chlorite commonly occurs along the cleavages of the feldspar.”*

A 2008 diamond drilling report by LeGrand for American Bonanza does not provide any further detailed information on the geological setting of the east claim holdings. However, 2009 geological mapping and prospecting results reported by LeGrand for the western, non-contiguous 4211126 claim area indicates that this claim is largely underlain by massive, aphanitic, medium to dark green-coloured mafic volcanic rocks commonly hosting trace to very minor pyrite. Along the northern claim border this volcanic unit has been intruded by a diabase dyke, similar in composition to those occurring elsewhere within the eastern claim holdings. On the southern claim boundary, along the shore of Lake Superior, there are pinkish, massive, fine-grained barren dykes cutting the mafic volcanic rocks.

Figure 7.3 illustrates the reported geological setting of the Property as reported by Carter (1988).

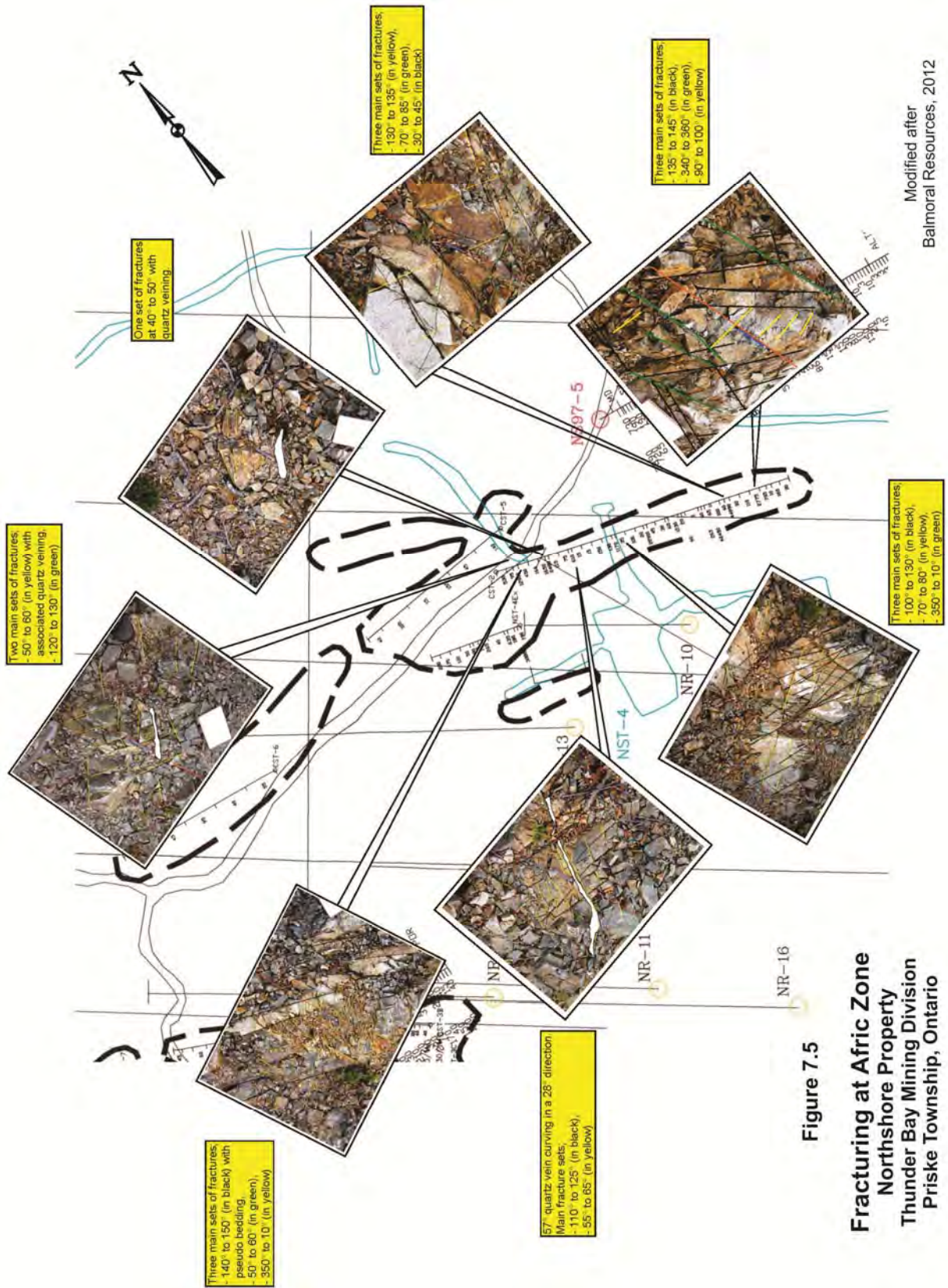
## 7.2.2 Structure

There is very little information on the detailed structural setting of the Property other than that reported by Carter (1988). The rocks underlying the claim holdings were reportedly affected by at least one major episode of deformation which folded the supracrustal rocks along east-southeasterly axes, and imposed a pervasive regional foliation that generally parallels the trend of stratigraphy (see Figure 7.2).

Folding is about an east-southeasterly trending axis. Along the southern limb of this fold axis the rocks trend southwestwards, and on the northern limb they trend northeastwards. Based on these trends and facing data Carter (1988) interpreted the syncline to plunge east-southeastwards.

Lineaments with northwesterly trends are most strongly developed, with northeasterly trends less so, and northern trends least of all (Carter, 1988). These trend directions are followed by vein structures, and by streams and lakes. The Worthington Bay fault, within the LOC No. 2 mining claim, is one of the major northeasterly trending faults responsible for lineations within the Property.

Figure 7.5 of this report illustrates the complex fracturing of the intrusive host rocks within the Afric Zone.



Modified after  
Balmoral Resources, 2012

**Figure 7.5**  
**Fracturing at Afric Zone**  
**Northshore Property**  
**Thunder Bay Mining Division**  
**Priske Township, Ontario**

According to Carter (1988), "Along the Schreiber Point and Worthington Bay Faults displacement is right lateral and left lateral respectively. On the Syenite Lake Fault a vertical component of movement is considered by the author to have been very important as a pronounced fault scarp is readily discernible in the field trending parallel to much of the western shore of the lake. Along the west shore of Schreiber Peninsula a fault scarp is apparent along the Schreiber Point Fault with down throw apparently to the west. If the Syenite Lake Fault and the Schreiber Point Fault are the same, there was probably a scissor movement on this fault with the east side down at the northeastern end of this combined fault, and the west side up at the southwestern end. This would help to explain the occurrence of the Gwynne Mountain granitic wedge. Similarly an important vertical component of movement is believed to have occurred with the east side down on the Worthington Bay Fault as a marked but less spectacular fault scarp occurs along the west side of this fault in the Worthington Bay area."

### 7.2.3 Alteration

There is no detailed information in the assessment reports regarding the alteration of the host and country rocks within the Property. According to Carter (1988), the Archean-age volcanic and volcanoclastic rocks have undergone regional greenschist alteration resulting in the ubiquitous sericitization and saussuritization of the feldspars, and alteration of the mafic minerals to epidote, chlorite, carbonate, quartz and magnetite.

The syenitic intrusive rocks within the Afric Zone display weak ankeritic to hematitic alteration, pyritization and sericitization of the feldspar phenocrysts. There may be secondary albitization, biotitization and potassic alteration but such determination would require a petrographic examination.

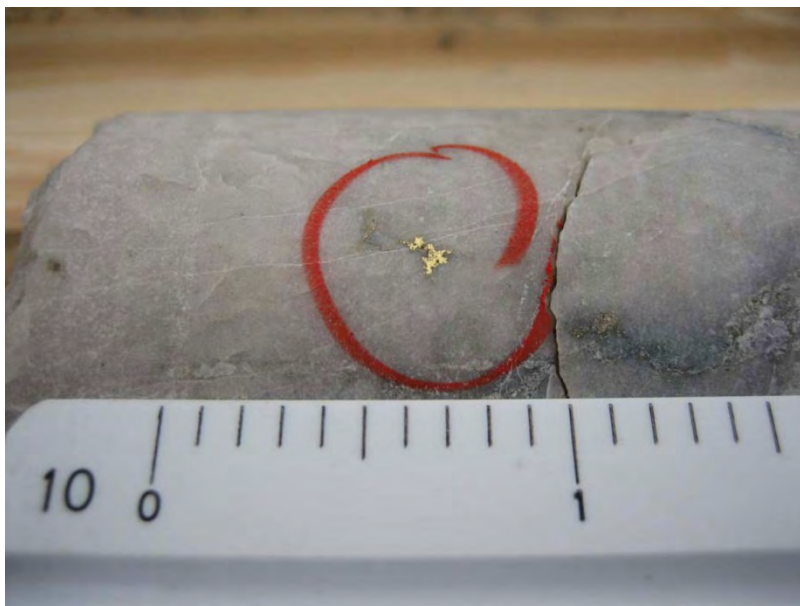


**Photograph No. 7.1: Sericitized, pyritic feldspar porphyry intrusive intersected by DDH 11-01**

### 7.3 Mineralization

Gold mineralization on the Property occurs in a variety of modes, namely: hosted by well-defined, narrow quartz-carbonate veins (i.e. Audney and Caly veins), quartz-carbonate ( $\pm$  tourmaline) vein stockworks, and associated with base-metal sulphide mineralization. A description of each mode of gold mineralization follows.

**Gold mineralization hosted by quartz and quartz-carbonate veining** – This type of multi-phase quartz and quartz-carbonate veining occurs along several prominent structural trends throughout the property. The Audney, Caly and Caly North quartz-carbonate veins within the Afric Zone host locally coarse, high-grade gold mineralization. These vein structures strike east-northeasterly, vary in true thickness from 5 cm to 60 cm, and have been traced by drilling to a vertical depth of at least 125 m. They commonly have poorly defined selvages with narrower subparallel veins, veinlets and infilled fractures hosting native gold, electrum and other gold-bearing mineralization. They may also host trace to minor amounts of pyrite with lesser tourmaline and chalcopyrite. The east-northeasterly to northeasterly trending vein structures appear to be structurally related to conjugate, dilational fracturing associated with northwesterly trending extensional fracturing and north-northeasterly strike-slip displacements along the Worthington Bay and Schreiber Point faults (see Figure 7.2).



**Photograph No. 7.2: Visible gold in Audney quartz-carbonate vein**  
(photograph from Balmoral Resources' website, 2012)

There are numerous narrow quartz and quartz-carbonate vein and veinlets throughout the Afric Zone subparalleling the better defined Audney and Caly vein structures. These narrow veins may occur individually or collectively as vein stockworks often hosting considerable gold mineralization as native gold, electrum and gold-bearing sulphide mineralization.

The high-grade gold-bearing vein at the historic Northshore mine which strikes approximately east-west, paralleling the Afric Zone, may also be a similar quartz-carbonate dilational vein structurally related to extensional shearing between the Worthington Bay and Schreiber Point faults. However, the old shaft exposing the vein is completely flooded and drilling by Cyprus Canada failed to intersect the vein structure.

**Gold mineralization associated with altered and pyritized intrusive rocks** – Within the better-explored Afric Zone gold mineralization is associated with pyritized feldspar ( $\pm$  quartz) porphyritic and syenitic intrusive rocks that also host the high-grade quartz and quartz-carbonate vein structures. Gold mineralization appears to be genetically associated with the hydrothermal alteration of the host intrusive rocks that produced finely-disseminated to blebby pyrite and extensive zones with pervasive ankerite (iron-carbonate) alteration

associated with variable sericitization and potassic alteration, especially in close proximity to the syenitic intrusion. Gold-bearing pyrite mineralization seems to be more concentrated at or near the loci of northeasterly and northwesterly trending fracturing.

**Gold associated with base-metal sulphide mineralization** – Gold mineralization also occurs associated with several pyrite, chalcopyrite and/or arsenopyrite-bearing shear zones and veins that may also carry locally elevated silver values. The chalcopyrite and sphalerite-bearing shear zone at the Worthington Bay No. 3 showing, situated within patented claim LOC No. 1 (see Figure 7.3), is an example of this type of mineralization. Past operators have suggested that this style of mineralization may be genetically related to volcanogenic massive sulphide mineralization known elsewhere in the Archean-age sequence such as at the former producing Winston Lake Zn-Cu-Ag-Au system situated north of Schreiber (Balmoral, 2012).



**Photograph No. 7.3: Audney gold-bearing quartz-carbonate vein at verification sample site G094422**

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## 8 DEPOSIT TYPES

Gold-bearing vein mineralization on the Northshore property is typical of an Archean mesothermal gold deposit.

According to Ash and Alldrick (1996), mesothermal gold deposits are characterized by gold-bearing quartz veins and veinlets with minor sulphides crosscutting a wide variety of host rocks, often localized along major transcrustal structural breaks within stable cratonic terranes. The vein deposits occur within fault and joint systems produced by regional compression or transpression (terrane collision), including major listric reverse faults, second and third-order shear splays. Gold-bearing mineralization is deposited at crustal levels within and near the brittle-ductile transition zone at depths of 6 to 12 km, pressures between 1 to 3 kilobars and temperatures from 200° to 400° C. Deposits may have a vertical extent of up to 2 km, and lack pronounced zoning.

Mesothermal vein deposits are usually of greenschist metamorphic facies grade and hosted by a variety of lithologies ranging from virtually undeformed to totally schistose granite-greenstone belts - mafic, ultramafic (komatiitic) and felsic volcanics, intermediate and felsic intrusive rocks, greywacke and shale. Tabular fissure veins form in more competent host lithologies while veinlets and stringers form stockworks in less competent lithologies. Lower grade bulk tonnage styles of mineralization may develop marginal to veins with gold associated with disseminated sulphides, or as broad areas of fracturing with gold and sulphides associated with quartz veinlet networks. Veins usually have sharp contacts with wallrocks and exhibit a variety of textures that may be modified or destroyed by subsequent deformation.

The economic vein mineralogy includes: native gold, pyrite, arsenopyrite, galena, sphalerite, chalcocopyrite, pyrrotite, tellurides, scheelite, bismuth, cosalite, tetrahedrite, stibnite, molybdenite, gersdorffite (NiAsS), bismuthinite ( $\text{Bi}_2\text{S}_2$ ), and/or tetradymite ( $\text{Bi}_2\text{Te}_2\text{S}$ ). Gangue minerals commonly include: quartz, carbonates (ferroan-dolomite, ankerite ferroan magnesite, calcite and siderite), albite, mariposite (fuchsite), sericite, muscovite, chlorite, tourmaline, and/or graphite.

Silicification, pyritization and potassium metasomatism generally occur adjacent to veins (usually within a metre) within broader zones of carbonate alteration, with or without ferroan dolomite veinlets, extending up to tens of metres from the veins. The type of carbonate alteration reflects the ferromagnesian content of the primary host lithology; ultramafics rocks – talc and Fe-magnesite; mafic volcanic rocks – ankerite and chlorite; sediments - graphite and pyrite; felsic to intermediate intrusions - sericite, albite, calcite, siderite and pyrite. Quartz-carbonate altered rock (listwanite) and pyrite are often the most prominent alteration minerals in the wallrock. Fuchsite, sericite, tourmaline and scheelite are common where veins are associated with felsic to intermediate intrusions.

Gold-bearing quartz veins are often found within zones of intense and pervasive carbonate alteration along second order or later faults marginal to transcrustal breaks. They are commonly closely associated with, late syncollisional, structurally controlled intermediate to felsic magmatism. Gold-bearing veins are more commonly economic where hosted by relatively large, competent units, such as intrusions or blocks of obducted oceanic crust. Veins are usually at a high angle to the primary collisional fault zone with steep, transcrustal breaks often hosting the best deposits in greenstone terranes.

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## 9 EXPLORATION

The following descriptions of past exploration campaigns were documented in the reports by Carter (1988) in MNM Open File 5692, Drost (1997) for Cyprus Canada and LeGrand (2008) for American Bonanza.

### 9.1 Pre-1988 Exploration Work

There are no descriptions of any exploration work during the 1898 to 1937 period when McKellar-Longworth and later Northshore Gold Mines operated the Northshore property. According to Carter (1988), McKellar-Longworth discovered 14 gold-bearing veins on the Property, presumably by prospecting, and Northshore Gold Mines developed the No. 1 vein. During their 1935 to 1937 operatorship, Northshore Gold Mines mined 3,808 tons of vein material that yielded 2,441 ounces of gold and 226 ounces of silver, averaging 0.64 ounces of gold per ton of milled ore (Carter, 1988).

Drost (1997) reported that Northshore Gold Mines Ltd. drilled at least 5 holes along the old Northshore Zone during their 1935 to 1937 tenure but detailed descriptions of these drill holes are not documented in any available reports. Their traces are shown on Figure 10.1 of this report, after drill hole plans by GTA (2012).

The Worthington Bay No. 3 base-metal showing within unpatented mining claim 4211127, on the eastern side of Worthington Bay (see Figure 7.3) was apparently discovered during the early exploration of the Northshore area. The following text is quoted from the geological report by Carter (1988, page 137).

*"On the western shore of Worthington Bay near its northwestern corner, a shear-zone 5 m wide striking N 70° W and dipping 15' SE was observed by the field party cutting grey aphanitic intermediate metavolcanics in a narrow indentation on the shoreline. The zone is mineralized with 30% disseminated pyrite and minor chalcopyrite. Malachite staining can also be observed. A grab sample taken during the survey and analyzed by the Geoscience Laboratories, Ontario Geological Survey, showed 33 ppm copper and 24 ppm cobalt. This occurrence is believed to be the deposit examined by M.W. Bartley and Associates Limited in 1969 and which was described by him as follows:*

*"Mr. C. S. Downey of Schreiber, Ontario discovered a narrow occurrence of argentiferous galena and sphalerite in a yellowish rhyolitic formation at the water's edge of Worthington Bay. The yellowish rhyolite is distinctive and appears to be the only host for the sulphide mineralization. Whether it is a dike or flow within a brecciated rhyolite complex is not known.*

*"Where exposed, the sulphide mineralization has a maximum width of ten inches and is composed of very narrow stringers of massive sulphides separated by apparently barren rock. The mineralization has not been traced along strike successfully.*

*"Five shallow diamond drill holes were sunk on the occurrence to determine continuity and dimensions. Because of extreme brecciation core recovery was less than 60%. The only intersection of massive sulphides occurs near the collar of drill hole No. 1. The sections where core was not recovered may represent mineralized zones but this is conjectural.*

*"Assays of sludge samples and some core sections returned low values, well below ore grade. The unsampled core, with the exception of the narrow section in Hole No. 1, is characteristically barren. Sporadic disseminations of fine sulphide mineralization were noted in the remaining core but the quantity is insufficient to be classed as ore material" (Resident Geologist's Files, Ontario Ministry of*

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*Northern Development and Mines, Thunder Bay). These drill holes were not located during the current survey, and no property map of the deposit was available, but the location of occurrence is shown on a geological sketch map of part of the Schreiber area by Hopkins (1923, p.106).*

In 1960 the original Northshore block of five contiguous patented claims was purchased by Trio Mining Exploration Limited which held it in good standing until December 31, 1979 (Carter, 1988). Autotrac Limited acquired all of the Northshore patented and unpatented mining claims in 1980. No exploration work has been reported for the period of 1960 to 1988.

## **9.2 1988-1992 Exploration Work by Noranda Exploration Company Ltd. and Hemlo Gold Inc.**

During their 1988 to 1992 tenure, Noranda Exploration Company Ltd. ('Noranda'), later becoming Hemlo Gold Inc. ('Hemlo'), explored the subject claims, which they called the 'Northshore Property', and the immediately adjacent properties, called the 'Skalesky' and 'Hayes Lake',. The Skalesky property was located immediately north of five patented claims within the Property, and the Hayes Lake property covered the intervening area between the current western unpatented claim 4211126 and the patented claims TB3719, BJ122 and BJ123.

Noranda first established a cut and picketed survey grid over most of the area now covered by the Property with a northeasterly oriented baseline and northwest-southeast grid lines spaced 50 to 100 feet apart. They also established a cut and picketed survey grid over the adjacent Skalesky property to the north with grid lines oriented north-south (see Figure 9.1). Geological and geochemical surveys were then conducted over the survey grid area after which they stripped and sampled several trenches. The results of this work discovered the gold-bearing vein mineralization within the Afric as well as identified five other mineralized trends which they denoted as No. 1, 2, 3, 4 and 5 Zones (Drost, 1997).

During the 1990 and 1991 field seasons, the Noranda/Hemlo drilled twenty 'NR'-series diamond drill holes, totalling 2,494.6 m, mostly to delineate the mineral resources within the Afric Zone. This drilling evaluated the gold-bearing vein structures within the five mineralized trends and provided drilling data for a preliminary resource estimate of the Afric Zone (discussed in 'History' section of this report).

## **9.3 1997 Exploration Work by Cyprus Canada Inc.**

In early 1997 Cyprus Canada Inc. ('Cyprus') optioned the Northshore property from Autotrac Inc. and the adjoining Worthington Bay property from David Christianson. Their primary exploration focus was to assess the potential of the Afric Zone to host a large tonnage, bulk mineable resource in excess of 1 million contained gold ounces, and to explore the larger Worthington Bay property that has received little exploration attention at the time (Drost, 1997).

The 1997 exploration campaign included: establishing several widely-spaced survey grids (see Figure 9.1), prospecting, geological mapping, geophysical (I. P., VLF-EM and magnetics) surveying and geochemical (humus) sampling, trenching and rock geochemical sampling within the Afric Zone and diamond drilling (7 holes totalling 1,131.3 m) directed at extending the Afric Zone westward (Drost, 1997).



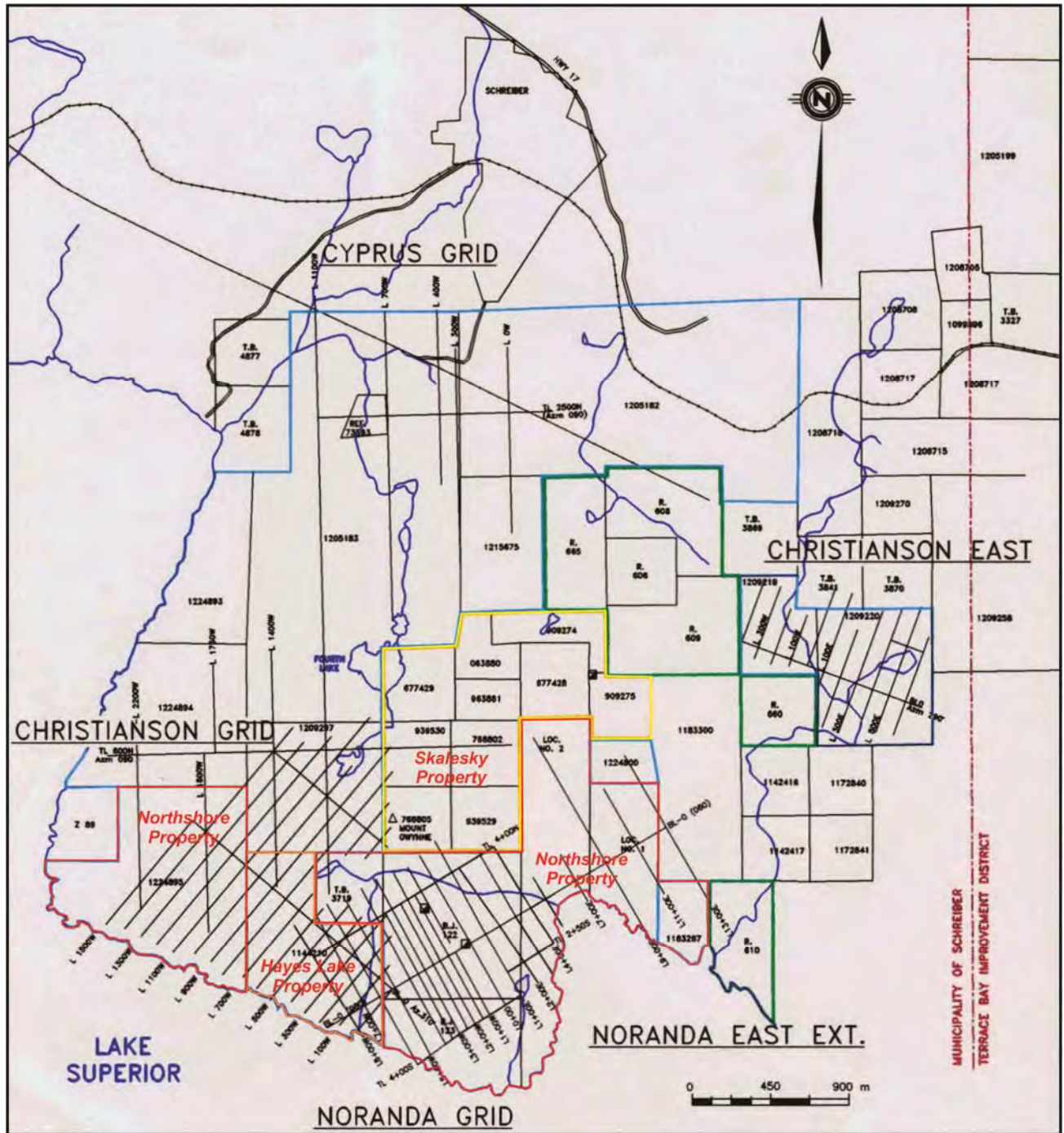


Figure 9.1: Survey Control Grids established by Noranda Exploration/Hemlo Gold and Cyprus Canada (modified after Figure 4 by Drost, 1997)

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The following text describing the 1997 exploration program by Cyprus is quoted from the report by Drost (1997).

#### **“Survey Grids**

*A total of three main chain saw cut and chained survey grids are present on the Northshore project properties. These include a pre-existing survey grid each on the Autotrac Inc. (**Noranda Grid**) and Christianson (**Christianson Grid**) claim groups and a third wide-spaced grid (300-400m line spacing) cut over the balance of the Christianson Grid by Cyprus Canada, 1997 (**Cyprus Grid**). In addition, the original Noranda baseline and grid was extended to the east by 700m on the Autotrac claim group. This portion of the Noranda grid is known as the **Noranda East Extension**. An additional small grid on claims 1209219 and 1209220 is called the **Christianson East Grid**.*

#### **Geological Mapping and Prospecting**

*1:2500 scale geological mapping, prospecting and rock sampling was carried out on grid lines and access roads to assess the lithological, alteration, structural, veining and sulphide mineralization characteristics of the country rocks on the Northshore Project claims.*

*The primary focus of the grid mapping and prospecting program was to screen and assess the potential for the occurrence of bulk mineable Afric Zone-style or lode gold-style mineralization in other areas of the property besides the main Noranda grid. In addition to gold analyses, multi-element ICP scan for base metals and pathfinder elements was conducted on all 464 rock samples taken. The mapping and prospecting program was initially guided in part by the existing integrated database generated by Noranda/Hemlo Gold and involved remapping within the immediate confines of the pre-existing Noranda grid. New areas of interest for geological follow-up on the Christiansen, Cyprus and Noranda East Extension grids were in part generated by induced polarization geophysics and humus sampling carried out by Cyprus Canada Inc. in 1997.*

#### **Rock Sample Results**

*A total of 464 rock samples were taken during mapping of the Northshore Project claims. Several new pyritic and weakly auriferous zones were identified on the periphery of the main Noranda grid and Noranda East Extension grid. These include:*

- 1. Lake Superior Shoreline occurrences @ L4+25E, 3+00S (Na.G.) and on the west shore and southern tip of the Worthington Bay shoreline area (no grid reference). These occur as significant pyrite accumulations with massive pods and pyrite stringers/veinlets in fuchsitic and sericitic felsic to intermediate metavolcanics. They may represent barren extensions of Afric Zone mineralization.*
- 2. Noranda East Extension grid @ L13+00E, 3+00S (1,530 ppb Au). Occur as weak (1-2%) pyrite accumulations in massive to weakly foliated hornblende-phyrlic syenite with quartz stringer veining.*
- 3. A wide (35m) pyritic breccia zone @ L5+75E, BL (Na.Ext.) with low gold values and along strike from narrow pyritic galena-rich veining in fuchsitic, brecciated and sheared sericitic felsic volcanics @ L5+50E on Worthington Bay Shoreline area. These assayed high in silver and base metal values with low gold values, but were of limited lateral extent.*
- 4. Hematitic sericitic and pyritic felsic - intermediate tuffaceous metavolcanics to feldspar porphyry @ L7+00W, 0+75S (Na.G.) and L5+30W, 1+80S (Na.G.) exhibited elevated gold values to 500 ppb Au.*
- 5. A high value of 15.7 gpt Au (494245) in a grab sample was obtained from a narrow pyritic quartz stringer in sericitic felsic volcanic @ L6+40W, 1+90S (Na.G.) (a previous Noranda/Hemlo Gold occurrence). Rock sample assay results in the portions of the Northshore Project claims outside the main Noranda grid area and east extension, yielded generally low gold values.*

**Geochemistry Survey - Humus**

In order to screen large-scale potential gold target areas, a total of 773 humus samples were collected at 25m sample intervals on wide-spaced (200m - 400m) survey lines over the Northshore Project claims.

Statistical background humus values on the Northshore Project claims were below the analytical detection limit of 1 ppb Au. Several spot anomalies exhibiting up to 360 ppb Au were identified and contoured.

Although follow-up prospecting and rock sampling of these areas failed to explain humus gold anomalies in rock, the highest humus anomaly (360 ppb Au) was located at a weakly pyritic north-south contact between Northshore syenite and mafic volcanic rocks. This particular anomaly was drilled by DDH 5010-97-3 with negative results.

**Geophysical Survey**

Geophysical surveying provided a basis for geological mapping and prospecting activities on the Northshore Project. A phase-domain induced polarization survey and a combined magnetic/VLF-EM survey was carried out on the Northshore Project claims between July 2 to 18, 1997. A total of 18.9 line-km of IP survey and 19.1 line-km of magnetic and VLF-EM survey were executed on the properties.

The surveys were executed along wide-spaced selected lines of all four (4) grids on the Northshore Project claims at 25m station spacing. The survey was conducted by Val D'or Sagax Inc. geophysical contractors (Val D'or Sagax Inc., September 1997).

**Power Stripping, Washing and Sampling**

A series of selected outcrop areas were power stripped, washed, mapped and rock sampled. A total of 513 rock samples were taken. The two-fold focus of the power stripping program was to expose and sample Afric Zone mineralization on surface in the area of previous drilling by Noranda/Hemlo Gold Inc. and to extend the area of known Afric Zone mineralization to the west and east.

In addition, two old Noranda trenches (NST-9 and NST 6, 6A, 6B) were resampled by Cyprus during the present program.

**Diamond Drilling**

Diamond drilling was performed using a Hydracore drill rig during the period August 8 to September 5, 1997. Diamond drilling operations were carried out by Klucane Drilling of Whitehorse, Yukon. A total of 1,131.3m of BTW ('B-Thinwall') diamond drilling in seven holes was conducted by Cyprus during the 1997 program. A total of 571 rock samples were derived from the drilling program. All whole unsampled and split sampled core is stored on racks at the Northshore property at the lower beach area.

Two holes 5010-97-5 and 5010-97-7, obtained elevated gold values in the Afric Zone mineralization to the east and west respectively of the main Noranda drill program."

According to Drost (1997), the results of the 1997 exploration work indicated the following.

- "The Afric Zone is characterized by an alteration and mineralization assemblage as follows: pervasive Fe-carbonate, sericite, potassium and one to two percent pyrite with a local, confined silicification, chloritization and an increase in pyrite.
- Afric Zone style mineralization (i.e. high tonnage potential) is restricted to the syenite body, mostly within feldspar to quartz feldspar porphyritic phase/alteration.

- *Within the Afric Zone background gold is in the 50 to 300 ppb range, local increases to 2000 ppb are common with increased pyrite and silica; within quartz veining, visible gold and significantly higher assays occur. A fair density of these quartz veins is necessary to make an economic grade x width.*
- *The overall orientation of the Afric Zone is azimuth 110° to 130°; the enclosed quartz veins have an orientation of azimuth 030° to 060° and dip steeply west.*
- *The quartz veins have limited dimensions as they are confined to the Afric Zone and don't extend into the surrounding host, lengths of metres with widths of one to five centimetres. A few larger veins, 0.5 X 30 to 75 metres, have been mapped on surface. These systems have strong pyritic, silicified halos with vein stockworks and visible gold; multi-ounce assays are common.*
- *Outcrop exposure on the strike extents of the Afric Zone exceeds 50 percent, failure to locate the alteration zone to the northwest in both drilling and prospecting severely limits the tonnage potential in that direction.*
- *The Afric Zone has been traced in drilling and outcrop for a strike length of 400 metres, widths range from 20 to 60 metres and grades range from 300 ppb to 3.5 g/t over these widths.*
- *9 holes have intersected the Afric Zone. The average of the nine holes is 1.35 g/t over 44.6 metres.*
- *The surface expression of the zone to the southeast is quite weak, with the gold values falling off at the surface, however the alteration appears to continue.*
- *Limited data to date suggests that the zone plunges shallowly to the southeast.*
- *The potential of the Afric Zone to host a >1 million ounce gold deposit that would be amenable to open pit mining is limited by the proximity of Lake Superior to the southeast, and lack of favourable results to the northwest.*
- *The property contains numerous narrow, high-grade zones that have not been fully evaluated nor has the potential of the Afric Zone to host a high-grade underground type target been evaluated."*

Based upon their 1997 exploration results Cyprus concluded that the property had limited potential for hosting a large tonnage, open pit gold deposit but Drost (1977) did state that there were numerous showings within the Northshore property with "high-grade indications". He described seven of these poorly-explored target zones as follows and Figure 9.2 of this report shows the locations of these zones.

**No. 3 Zone** - *This zone was stripped and sampled and returned 19.9 g/t (Au) over 5.0 metres on surface. Hemlo drilled 1 hole, Nr-4, beneath the surface showing which assayed 1.8 (g/t Au) over 6.1 m in a larger zone of alteration and mineralization. This zone has not been followed up to the east or west and is open in both directions. A grab sample 300 metres to the west assayed 16.8 g/t (Au).*

**Afric Zone** - *This zone was discovered by Noranda and has been stripped, sampled and drilled in the main discovery zone for a strike length of 400 metres. As described above, the Cyprus program to extend the zone to the west was unsuccessful; however the Cyprus hole to the east was successful in confirming the orientation of the zone and extending the mineralization to the east. Nine holes that have intercepted the zone have averaged 1.35 g/t (Au) over an average width of 44.6 metres. The zone remains open to the east and down plunge. Potential exists for an additional 550 metres of strike length before reaching Lake Superior. The Afric zone contains high-grade quartz veins cutting*

across the alteration and mineralization, these veins have not been intersected in most of the drill holes due to their orientation and have not been evaluated for their high-grade low tonnage potential. These veins were stripped during the Cyprus exploration program.

**No. 2 Zone** - This zone splays off the Afric Zone and is seen in trenches and drill hole Nr-5, which intersected 1.5 g/t (Au) over 19.8 metres. No attempt has been made to extend this zone to the east, although a road and the end of a trench 120 metres to the east did not appear to locate the zone.

**No. 5 Zone** - This zone crosscuts the Afric Zone where the Afric has the best grade X width values. The zone is seen in a number of trenches and 2 drill holes, Nr-18, 9, over a strike length of 400 metres and is open in both directions. Trenching returned values as high as 137 g/t (Au) over 1 metre. Drilling failed to confirm this narrow high grade but did return favourable values, including 6.0 g/t (Au) over 4.1 metres in hole 9. An ancillary zone splays off the 5 Zone parallel to the Afric, 175 metres north of the Afric. Neither of these zones has received extensive exploration and both are open in all directions, with anomalous grab samples indicating the potential for extending the mineralization.

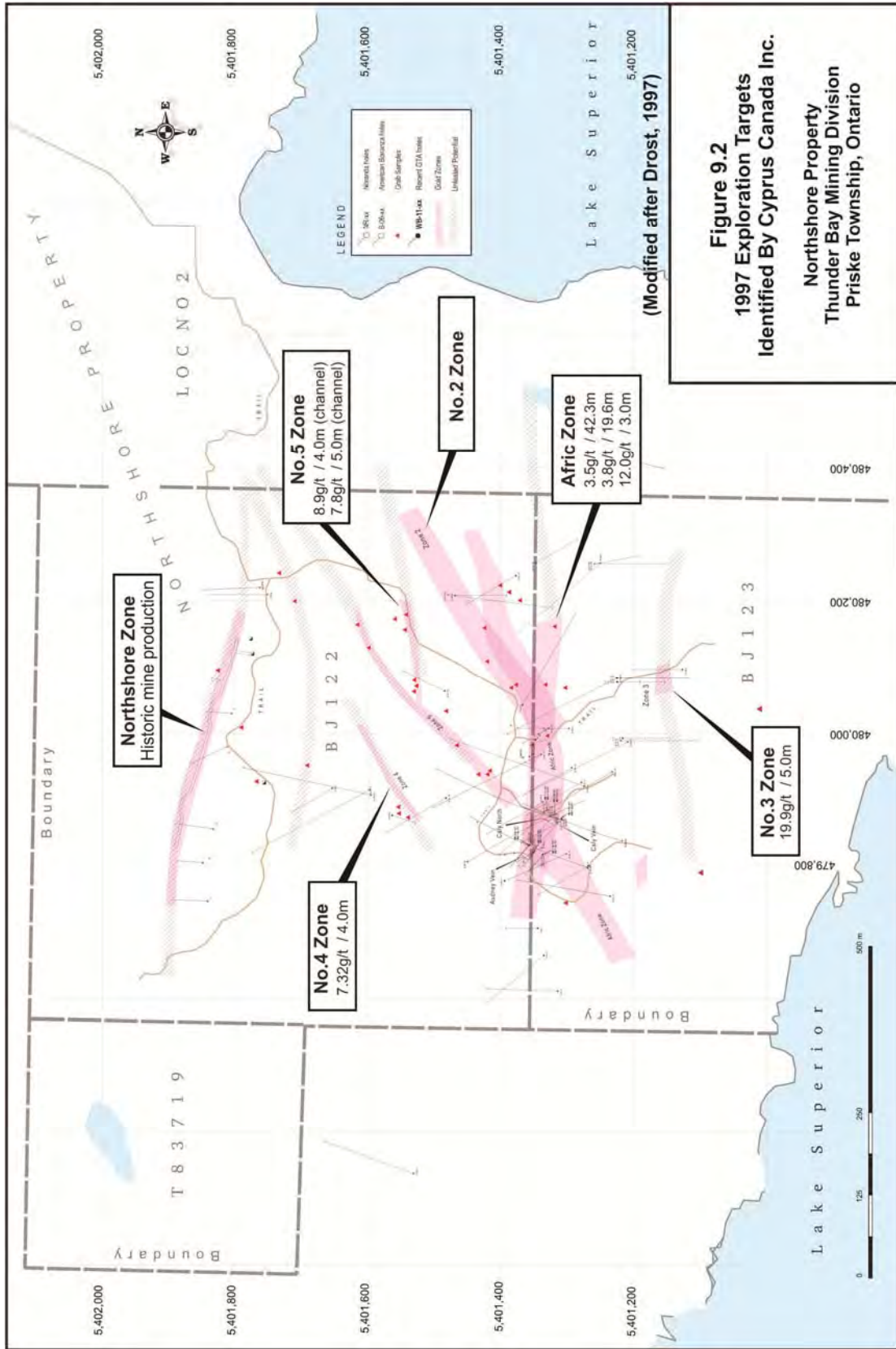
**No. 4 Zone** - This zone is parallel to the 5 Zone and was discovered by Hemlo while opening up an historic trench. Sampling returned values to 7.5 g/t (Au) over 5 metres. Drilling failed to substantiate the surface sampling. The orientation of the zone is unknown and the zone remains unexplored for either orientation or extension.

**Northshore Zone** - This is the original discovery vein on the property and has not been explored since the 1930's. Cyprus attempted 1 hole, 97-6, on the zone, but the hole intersected diabase dike where the zone was expected.

**Others** - Nr-7 intersected a high grade intercept, 53.13 g/t (Au) over 0.44 metres, that was not followed up, either on surface or with additional drilling. If this zone is parallel to the Afric and Northshore it would line up with anomalous grab samples to the east. The potential of this zone is completely unexplored. Numerous other grab samples from slightly anomalous to high grade are scattered around the property and remain underexplored, having been neither trenched/stripped or drilled.

#### 9.4 2005-2008 Exploration Work by American Bonanza Gold Corp.

American Bonanza Gold Corp. ('American Bonanza') drilled eleven diamond drill holes, totalling 4,530 m, in 2006. These holes were collared to test the gold-bearing mineralization of the Afric Zone. Most of the holes were oriented at azimuths of 012° to 019°; oriented to intersect the reported 110° to 130° trend of the Afric Zone. The drilling results confirmed the location and tenor of known mineralized zones which were identified and tested by Cyprus. Also, the overburden was found to range from 2 to 3 m thick indicating that trenching should be considered to expose the mineralization. LeGrand (2008) reported that several 2006 drill holes appeared to have been terminated short of their targeted gold-bearing mineralization. Detailed geological mapping and soil geochemical sampling were recommended for the area covered by mining claim 4211126 and the western extension of the Afric Zone.



During late November to early December 2007 American Bonanza excavated 6 trenches on the No. 3 Zone situated south of the Afric Zone, and stripped overburden on the No. 5 Zone situated northeast of the Afric Zone (see Figure 9.2). Heavy snow falls during this work period reportedly resulted in an early termination of the trenching work before they could be mapped and sampled. Follow-up mapping and sampling work was proposed for the 2008 field season to determine the orientations and inclinations of the gold-bearing mineralization within the No. 3 Zone, but no such follow-up work was reported later by LeGrand (2008).

American Bonanza subsequently drilled nine diamond drill holes, totalling 1,367 m, between December 2007 and January 2008. Most of this drilling was targeted at evaluating the No. 3 Zone because previous surface sampling had returned significant gold mineralization from old trenches and only one Noranda drill hole (NR-4) had tested the zone without success. The No. 3 Zone reportedly hosts significant oxidized pyrite disseminations and a zone of silicified stockwork with fine-grained tourmaline (LeGrand, 2008).

The results of the 2007-2008 diamond drilling reportedly did not intersect significant gold values (LeGrand, 2008). However, the last drill hole of the program (DDH 07-09) which was collared to test the No. 2 Zone did intersect a narrow quartz vein paralleling the drill hole that returned 24.75 gpt gold over a 3 m intercept length (LeGrand, 2008). It was recommended that detailed geological mapping be carried out on the excavated trenches and over the area covered by mining claim 4211126, plus further drilling on the No. 2, 5, 4 and Northshore zones (see Figure 9.2).

Between September 21 and 23, 2008 American Bonanza prospected and sampled the extreme northeastern and eastern portions of the western unpatented claim 4211126 following the old Cyprus grid baseline. One day was also spent prospecting and sampling the country rocks exposed along the shoreline of Lake Superior, bounding the southern limit of the mining claim. Mafic volcanic rocks reportedly underlie much of the prospected area, cut locally by a diabase dyke along the northern property boundary and felsic dykes along the Lake Superior shoreline. No significant gold values were discovered.

No further exploration work has been reported until the acquisition of the Property by GTA in July 2011.

## **9.5 2011 Exploration Work by GTA Resources and Mining Inc.**

The 2011 exploration program of GTA included surveying, mapping and sampling existing trenches within the Afric Zone, and evaluating both the lode gold potential of the higher grade quartz-carbonate veins, such as Audney and Caly vein systems, and the well-fractures, altered and pyritized intrusive rocks hosting the quartz and quartz-carbonate vein and stockwork structures. Twelve NQ-size diamond drill holes, totalling 1,038.0 m, were collared to begin assessing the central, trenched portion of the Afric Zone.

Seventy-three chip and channel samples were collected in late September 2011 along the exposed lengths of the Audney, Caly and Caly North veins. According to Duess (2011), the vein samples were collected across the true widths of the Audney, Caly and Caly North veins, placed in 6-mil plastic bags which were properly labelled and sealed after a unique sample assay tag had been placed in each bag. The samples were described in detail on site and then transported to the GTA field office in Schreiber for storage until their shipping via Greyhound Bus Parcel Express to the sample preparation and analytical facilities of Accurassay Laboratories in Thunder Bay, Ontario. There they were prepared and analysed for their gold content.

The results of the 2011 surface rock sampling work indicated:

1. the higher grade quartz and quartz-carbonate veins, such as the Audney, Caly and Caly North veins, trend east-northeasterly across the previously reported trend of the Afric Zone;
2. many of the previous drill holes were collared and oriented to intersect the general west-northwesterly trend of the Afric Zone and, thus, were commonly drilled sub-parallel or parallel to the higher grade lode vein structures, and;
3. there are multiple narrow, gold-bearing veins and veinlets hosted by the well-altered, fractured and pyritized intrusive rocks within the Afric Zone that were not tested by any previous drilling.

The locations and analytical results of the 2011 surface sampling along the Audney, Caly and Caly North veins within the Afric Zone are shown on Figures 12.1 and 12.2 of this report.

Detailed descriptions of the Cyprus and American Bonanza drilling programs plus 2011 diamond drilling by GTA are documented in the following 'Drilling' section of this report.



**Photograph No. 9.1: Robert Dues, V. P. Exploration, examining a rock sample from the Audney vein**



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## 10 DRILLING

Exploration drilling on or in the vicinity of the Property reportedly dates back to the mid-1930's during the exploration and development of the Northshore mine. Since then there have been at least four more drilling campaigns, including the present 2011 drilling program by GTA, mostly directed at evaluating Afric Zone gold mineralization.

Figure 10.1 of this report shows the locations of the drill holes relative to the Northshore mine workings and the five mineralized zones previously identified by Noranda and Cyprus. The locations and drill traces of the pre-2011 are based upon historical assessment report and were provided to the author by GTA. The pre-2011 drilling information has not been verified in the field by the author but it is considered accurate for the purposes of this report.

### 10.1 Pre-1988 Drilling Program

There is very little available information regarding the 1930's drill testing of the Northshore Zone. GTA (2012b) has compiled the locations and traces of this historical drilling along this zone from old reports (see Figure 10.1).

### 10.2 1988 to 1992 Noranda Exploration Drilling Programs

During the 1990 and 1991 field seasons, Noranda/Hemlo drilled twenty 'NR'-series diamond drill holes, totalling 2,494.6 m, mostly to delineate the mineral resources within the Afric Zone (see Figure 10.1). This drilling also evaluated the gold-bearing vein structures within five mineralized trends and provided a drilling assay data for a preliminary resource estimate for the Afric Zone (see 'History' section of this report).

Drost (1997) tabulated the 1990-91 diamond drilling results reported by Noranda. Table 10.1 of this report is a summary of those results, modified after Table 1 in the 1997 Cyprus Canada Inc. assessment report. The author could not verify these results because the drill core has been vandalized and the original Noranda assessment report is not currently available.

### 10.3 1997 Cyprus Canada Drilling Program

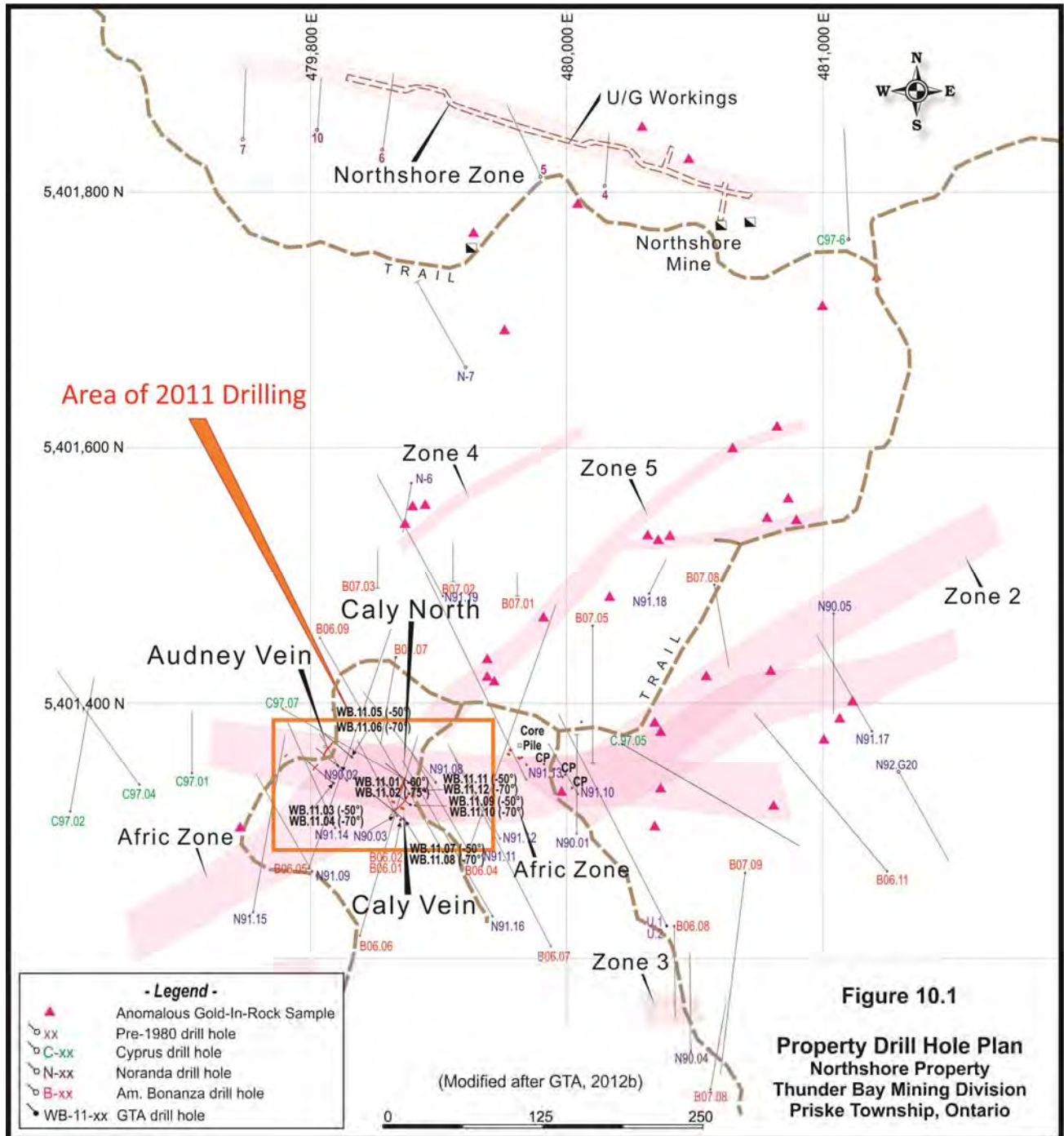
Between August 8 to early September 5, 1997, Cyprus Canada Inc. conducted a 7-hole diamond drilling program to test for the eastern and western extensions of the Afric Zone and the eastern extension of the Northshore vein (see Figure 10.1). According to Drost (1997), the primary target for this drilling was to identify a "*potential bulk tonnage, low grade gold target containing an initial drill-indicated resource of two million tons grading 2.2 g Au/ton*". A total of 1,131.3 metres of BTW ('B-Thinwall)-size core drilling was completed and 571 core samples were collected from the logged and split drill core.

The drilling results reportedly did not fulfill Cyprus's goal of a large tonnage, low grade gold deposit and they later terminated their property option. However, the results for the Afric Zone did identify a number of higher grade, narrow gold-bearing veins which Drost (1997) considered significant and under explored.

According to Drost (1997), the results of the 1997 diamond drilling within the Afric Zone were as follows.

- *"9 holes have intersected the Afric Zone. The average of the nine holes is 1.35 g/t (Au) over 44.6 metres;*

- The surface expression of the zone to the southeast is quite weak, with the gold values falling off at the surface, however the alteration appears to continue. Limited data to date suggests that the zone plunges shallowly to the southeast.
- The property contains numerous narrow, high-grade zones that have not been fully evaluated nor has the potential of the Afric Zone to host a high-grade underground type target been evaluated.”



**Table 10.1: Noranda Exploration 1990-91 Diamond Drilling Results (After Drost, 1997)**

DDH No.	Location	Target	Results	Assays
<b>Afric Zone</b>				
Nr91-14	410W/30S	West extension at depth	Dyked out before target	2.39 gpt Au / 3.0 m
Nr90-2, 3	375W	2 hole fence across zone	Both holes collar in zone, 3 exits zone at 57.9m	Nr90-2: 1.5 gpt Au / 44.8 m; Nr903: 2.1 gpt Au / 44.2m incl 3.9 gpt Au / 19.8 m
Nr91-8	340W/50S		Collars into zone	3.4 gpt Au / 42.1 m incl 4.5 gpt Au / 28.4 m
Nr91-16	340W/146S	Under hole 8, 11	Weak mineralization, alteration - Under the zone	180 ppb Au / 33 m
Nr91-11	335W/99S	Under hole 8	Wide zone of alteration, mineralization	1.3 gpt Au / 64 m incl 2.1 gpt Au / 16.5 m
Nr91-12	303W/100S	East of main mineralization	Dyked out	2.0 gpt Au / 17 m
Nr91-13	261W/72S	East ext'n of Afric & No.5 zones		Afric = 298 ppb Au / 74.5 m; 5 zone= 4.8 gp tAu / 6 m
Nr90-1	250W/125S	Beneath trench with 3.6 gpt / 31 m	Weak mineralization, little qz veining	241 ppb Au / 59.4 m incl 1.4 gpt Au / 3.8 m
Nr91-10	235W/105S	Beneath trench confirm negative results of 91-1	Similar to 91-1	624 ppb Au / 55 m incl 1.3 gpt Au / 6.5 m
<b>No. 5 Zone</b>				
Nr91-18	100W/00	Beneath trenched zone w/ 7.8 gpt / 5m	Entire hole altered feldspar porphyry	4.9 gpt Au / 1.4 m
Nr91-9	445W/50S	Noranda interpretation of Afric zone extension?	South of Afric, altered feldspar porphyry	0.78 gpt Au / 27.5 m and 2.4 gpt Au / 11.6m incl 6.0 gpt Au / 4.1 m
<b>No. 4 Zone</b>				
Nr90-6	230W/173N	Beneath trenched zone 7.5 gpt / 4 m	No zone intercepted	341 ppb Au / 10.7 m
Nr91-19	250W/90N	Beneath trenched zone as above	Altered feldspar and qz- feldspar porphyry	1.2 gpt Au / 4.5 m, 1.1 gpt Au / 3 m, 1.1 gpt Au / 1.5 m
<b>No. 3 Zone</b>				
Nr90-4	262W/325S	Beneath trenched zone 19.9 gpt Au / 5 m	Altered feldspar and qz- feldspar porphyry	1.8 gpt Au / 6.1 m
<b>No. 2 Zone</b>				
Nr90-5	75W/45S	Beneath trenched zone w/ 1.5 gpt Au / 19.8 m	Silicified feldspar porphyry	1.5 gpt Au / 19.8 m cut
<b>Other</b>				
Nr-90-7	140W/230N	Beneath old trenches with very little work	Py-infilled fractures in syenite	53.1 gpt Au / 0.5 m
Nr91-9	445W/50S	Afric zone extension?	South of Afric zone	0.78 gpt Au / 27.5 m and 2.4 gpt Au / 11.6 m incl 6.0 gpt Au / 4.1 m
Nr91-15	500W/50S	Afric zone extension?	South of Afric zone	124 ppb Au / 22.5 m
Nr91-17	00/180S	East Afric, beneath trench	North of Afric zone	342 ppb Au / 45 m
Nr91-20	00/205S	Old quartz stockwork zone	Altered porphyry, qz stockwork zone	No significant assays

The one Cyprus diamond drill hole (97-6) that was collared on the eastern end of the east-west trending Northshore Zone reportedly did not intersect any significant mineralization (Drost, 1997). This hole did intersect fractured and altered syenite that had been intruded by a barren diabase dyke.

The following Table 10.2 of this report is a summary of the 1997 diamond drilling results, modified after Table 3 in the 1997 Cyprus Canada Inc. assessment report by A. P. Drost. The author has not been able verify these reported results but has no reason to consider them erroneous or misleading given that they were reported for assessment credit by a major company.

**Table 10.2: Cyprus Canada 1997 Diamond Drilling Results (After Drost, 1997)**

DDH No.	Length (m)	Azimuth/Dip	Target	Results	Assays
97-1	68	360/-45	West extension of Afric Zone	Diabase dyke	No significant values ('NSV')
97-2	150.3	010/-45	West extension of Afric Zone	70.1 - 80.7 m alt'd QFP and syenite, weakly mineralized, tr qz veining	NSV; max of 410 ppb Au
97-3	200.7	020/-45	Humus anomaly	No Afric style alteration or mineralization intersected anomaly unexplained	NSV
97-4	170.1	320/-50	West extension of Afric Zone	0.5 - 75.5 m altered QFP and syenite 36 - 86 m qz stringer zone	NSV; max of 605 ppb Au
97-5	226.5	120/-45	East extension of Afric Zone	26.0- 28.5 m alt'd & mineralized shear zone; 21 - 71.9 m chloritized feldspar porphyry	7.9 - 56.6 m - 1.6 gpt Au / 48.7 m; 22.2 - 40.5 m - 3.1 gpt Au / 18.3 m
97-6	125.8	360/-45	Northshore Zone	Syenite; 62.3 - 90 m diabase dyke - qz vein target area	NSV
97-7	189.9	120/-45	West extension of Afric Zone, plunge of alteration, perpendicular to qz veining	0.5-129.7 m chloritized porphyry; 129.7-161.8 altered porphyry; 161.8-177.6 m chloritized porphyry; 177.6-189.9 m sericite altered porphyry	0.7 gpt Au / 111.3 m (45 - 156.3 m); 1.0 gpt Au / 35.1 m (45-80.1 m)
<b>Total Drilling</b>	<b>1,131.3</b>	<b>metres</b>			

**Note: All intercept lengths are drill core lengths in Tables 10.1, 10.2, 10.3 and 10.4, NOT true widths.**

**Table 10.3: American Bonanza 2006-08 Diamond Drilling Results (After LeGrand, 2008)**

DDH No.	Length (m)	Azimuth/Dip	Target	Results	Assays
NS-06-01	320.0	015/-50	Afric zone	Visible gold in several qz veins.	14.26 gpt Au / 19.0-21.0 m
NS-06-02	173.0	017/-70	Afric zone	Same veins w/ vg intersected downdip as in 06-01.	2.46 gpt Au / 87.0-91.0 m; 2.90 gpt Au / 107.0-110.76
NS-06-03	299.0	012/-49	Between No. 4 and Northshore zones	Visible gold in qz veins at 221.04-221.14 m, 236.38-236.43 m and then diabase.	2.80 gpt Au / 207.07-208.55 m; 7.76 gpt Au / 271.22-274.0 m
NS-06-04	332.0	019.5/-50	Directed at No. 2 and 5 zones	No. 2 zone w/ visible gold at 155-177 but no No. 5 zone	3.31 gpt Au / 177.11-177.61 m
NS-06-05	308.0	019/-50	Afric zone	Several gold-bearing qz veins hosted by altered and pyritized feldspar porphyry	1.03 gpt Au / 28.76-32.0 m; 1.81 gpt Au / 35.0-38.0 m; 3.27 gpt Au / 170.0-172.0 m.
NS-06-06	254.0	016/-50	Afric zone	Altered feldspar porphyry cuts by several diabase dykes	3.30 gpt Au / 30.0-31.0 m
NS-06-07	248.0	333/-48.5	Afric zone	Hole stopped too short. Diabase dyke 186.7-248 m.	1.41 gpt Au / 55.0-56.0 m; 1.05 gpt Au / 118.0-120.0 m
NS-06-08	272.0	333/-47	Afric zone	Hole stopped too short. Hole in feldspar porphyry with visible gold in qz veins.	30.2 gpt Au / 190.3-190.47 m; 12.71 gpt Au / 270.0-271.3 m
NS-06-09	407.0	150/-60	Afric zone	Altered feldspar porphyry cuts by several diabase dykes	1.4 gpt Au / 111.5-115.0; 1.04 gpt Au / 140.0-144.0
NS-06-10	299.0	332/-48	Afric zone	Cut same gold-bearing veins as in NS-06-03	4.05 gpt Au / 152.0-153.0; 1.80 gpt Au / 221.0-223.0
NS-06-11	251.0	320/-50	No. 3 zone	Stopped short of target zone	NSV
NS-07-01	164.0	180/-45	No. 3 zone	Altered qz-feldspar porphyry w/ py-tourmaline stockworks	2.02 gpt Au / 16.0-23.0 m
NS-07-02	209.0	180/-60	No. 3 zone	Faulted and pyritized feldspar porphyry w/ qz stockwork	NSV
NS-07-03	155.0	180/-45	No. 3 zone	Qz-py-tourmaline stockwork at 59-65 m in feldspar porphyry	1.13 gpt Au / 57.0-59.0 m
NS-07-04	140.0	180/-60	No. 3 zone	Cut faulted, seritized feldspar porphyry w/ tourmaline breccia	29.7 gpt Au / 32.0-33.0; 2.70 gpt Au / 72.0-73.0 m
NS-07-05	152.0	180/-45	No. 3 zone	Tourmaline-py stockwork 5-30 m w/ py-rich section to 64 m	NSV
NS-07-06	130.0	180/-60	No. 3 zone	Same rock as NS-07-05	0.59 gpt Au / 85.0-92.0 m
NS-07-07	98.0	190/-45	No. 3 zone	Altered feldspar porphyry w/ breccia zone at 30-41 m	NSV
NS-07-08	95.0	010/-45	No. 3 zone	Same rock as NS-07-07 with qz-py rich sections	NSV
NS-07-09	224.0	187/-45	No. 2 zone	Massive syenite w/ qz vein 21-29 m and py zone at 215 m	24.75 gpt Au / 26.0-29.0 m; 5.89 gpt Au / 215.0-216.0 m

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## 10.4 2006 to 2008 American Bonanza Drilling Programs

American Bonanza carried out two diamond drilling campaigns during their tenure. They drilled eleven diamond drill holes, totalling 4,530 m, in 2006 and then nine diamond drill holes, totalling 1,367 m, between December 2007 and January 2008. A total of 2,826 drill core samples were analysed during these two drilling programs (LeGrand, 2008).

The purpose of the 2006 drilling program was to evaluate the gold-bearing mineralization of the Afric Zone. Most of the holes were oriented at azimuths of 012° to 019° to intersect the reported 110° to 130° trend of the zone. According to LeGrand (2008), drilling results confirmed the location and tenor of the five known gold-bearing mineral zones but several drill holes were apparently terminated short of their targeted gold-bearing mineralization.

The 2007-08 drilling program focused on testing the No. 3 Zone that is situated south of the Afric Zone. Previous surface sampling had returned significant gold mineralization from old trenches and one Noranda drill hole (NR-4) had tested the zone without success. The No. 3 Zone reportedly hosts significant oxidized pyrite disseminations and a zone of silicified stockwork with fine-grained tourmaline (Le grand, 2008).

The 2007-08 diamond drilling results did not discover any significant gold mineralization. However, the last drill hole of the program (DDH 07-09), which was collared to test the northern No. 2 Zone, did intersect a narrow quartz vein paralleling the drill hole which returned 24.75 gpt gold over the 3 m interval (LeGrand, 2008). LeGrand (2008) recommended further drilling on the No. 2, 5, 4 and Northshore zones in the exploration report prepared for American Bonanza and filed for assessment credit.

Table 10.3 summarizes the significant mineralized intercepts reported by LeGrand (2008). The author has not been able verify these reported results but has no reason to consider them erroneous or misleading given that they were reported and accepted for assessment credit.

## 10.5 2011 GTA Resources and Mining Drilling Program

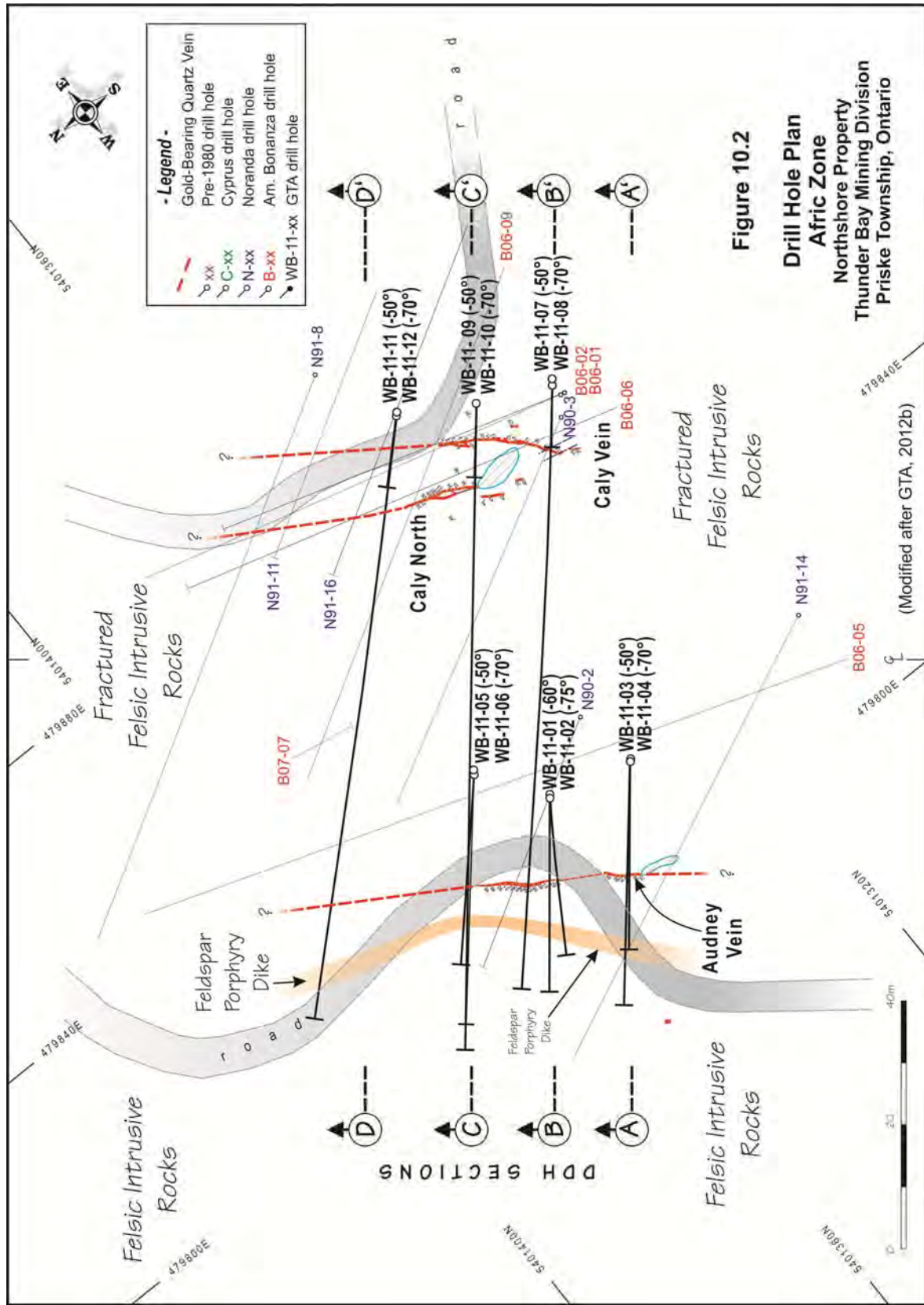
GTA completed twelve NQ-size diamond drill holes, totalling 1,038.0 m, from October 17 to 30, 2011. The 2011 diamond drilling program focused on evaluating the Audney, Caly and Caly North vein structures within the Afric Zone where surface rock samples had returned significant to high gold values.

The drilling program was designed and supervised by Mr. Robert Duess, GTA's V.P. of Exploration. Cobra Drilling Ltd. of Thunder Bay, Ontario was contracted to provide an Atlas Copco P4 Hydraulic drilling rig, support equipment and field personnel to complete the drilling contract. Mr. Duess logged the drill core and supervised the sample collection. This work was carried out at GTA's field office/warehouse in Schreiber where the diamond drill core and sample rejects are currently being stored.

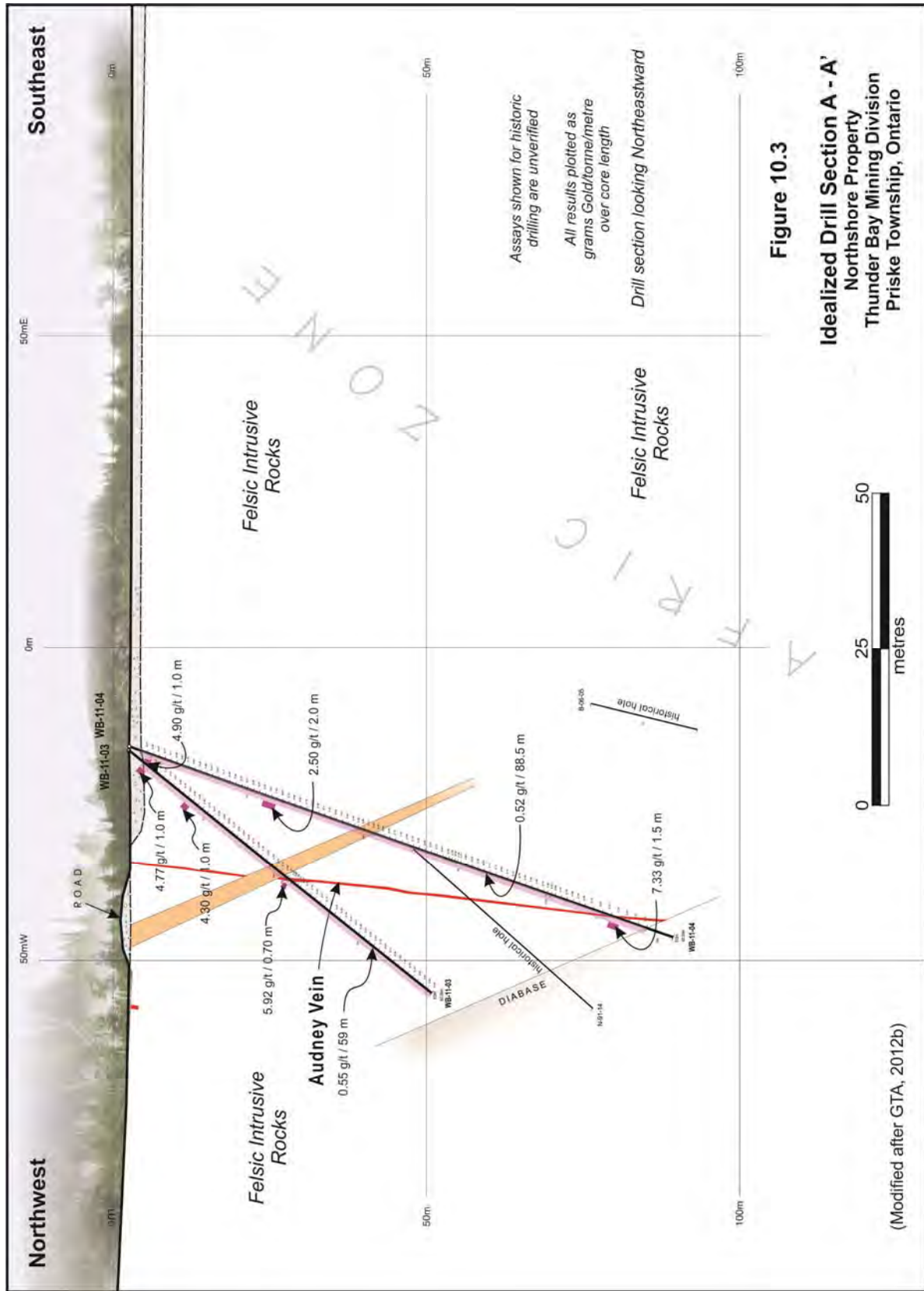
Table 10.4 summarizes the significant mineralized intercepts identified during the 2011 drilling program and reported by GTA in a February 14, 2012 press release. Figure 10.2 illustrates the locations and orientations of the 2011 drill holes within the Afric Zone, and Figures 10.3 to 10.6 are four drill cross-sections showing the intersected geology and gold-bearing mineralization. The 2011 drill core handling, sampling, logging and storage procedures, plus the drill core sample preparation, analyses and security are documented in Section 11 of this report.

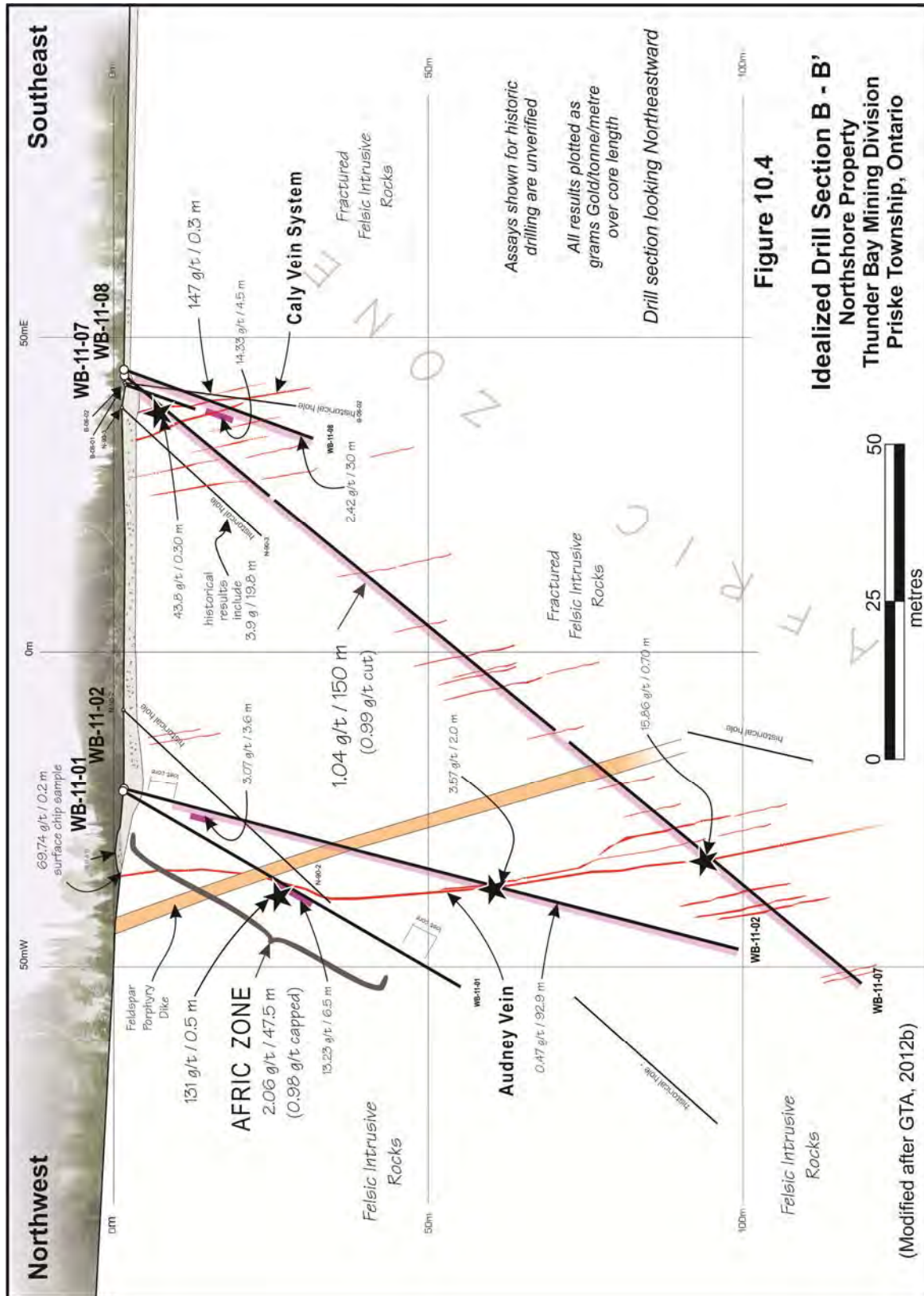
Table 10.4: GTA Resources 2011 Diamond Drilling Results (After GTA, 2012b)

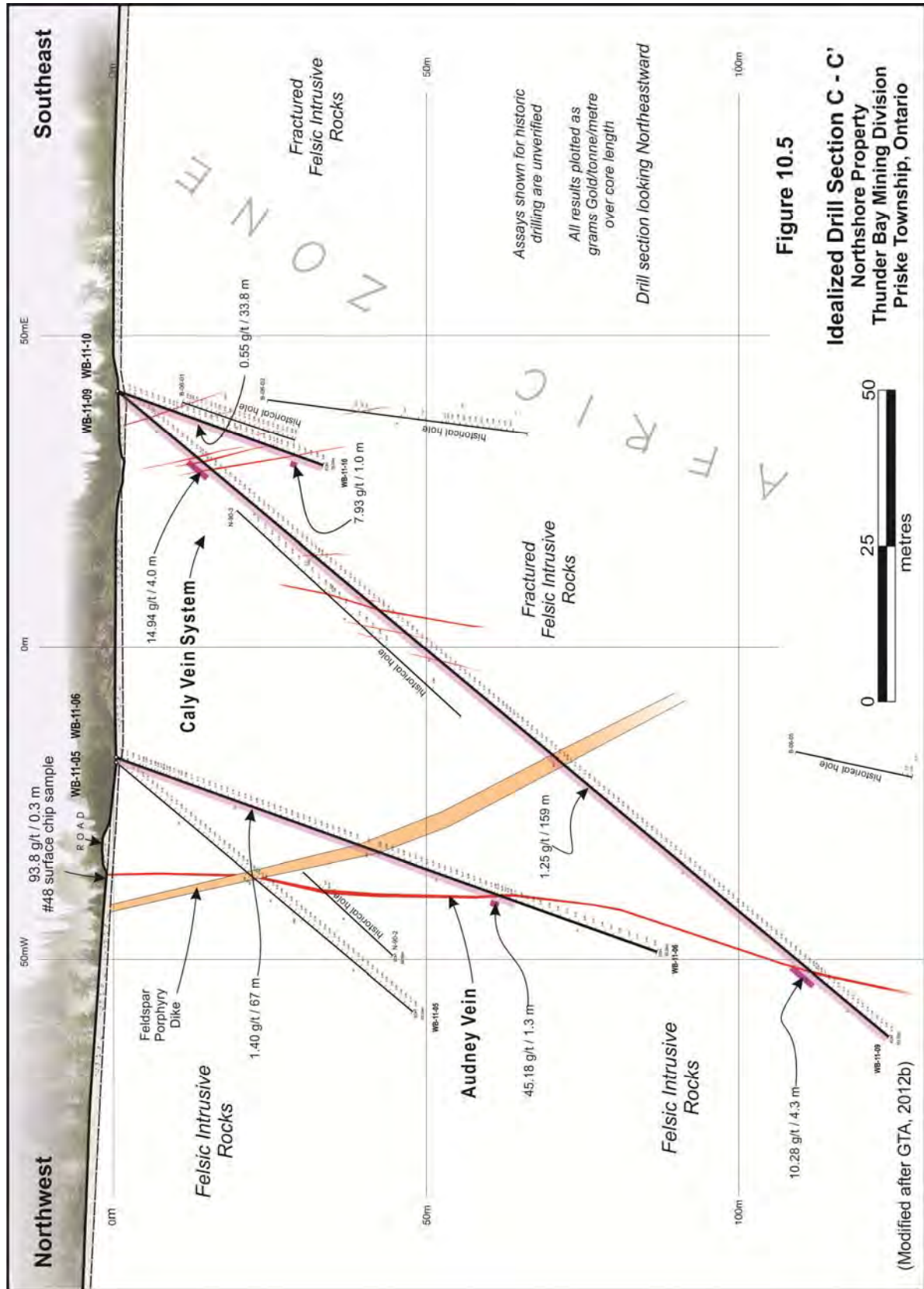
Hole Number	Hole Depth (m)	From (m)	To (m)	Interval * (m)	Gold- Uncapped (g/t)	Gold - Capped ** (g/t)	Zone
WB-11-01 (-70°) including which includes which includes	62.00	3.00	50.50	47.50	2.06	0.98	Afric Audney Vein " "
		28.50	35.00	6.50	13.23		
		28.50	29.80	1.30	60.49		
		29.30	29.80	0.50	131.99		
WB-11-02 (-75°) including which includes and which includes	101.00	8.10	101.00	92.90	0.47	0.47	Afric Audney South " Audney Vein "
		11.40	15.00	3.60	3.07		
		11.40	11.80	0.40	12.31		
		60.00	62.00	2.00	3.57		
WB-11-03 (-51°) including and and	62.00	3.00	62.00	59.00	0.55	0.55	Afric ? Audney South Audney Vein
		3.00	4.00	1.00	4.77		
		12.00	13.00	1.00	4.29		
		32.50	33.20	0.70	5.92		
WB-11-04 (-70°) including and and	87.50	2.00	87.50	85.50	0.52	0.52	Afric ? Audney South Audney Vein
		3.00	4.00	1.00	4.90		
		23.00	25.00	2.00	2.50		
		81.50	83.00	1.50	7.33		
WB-11-05 (-50°)	62.00	2.00	14.00	12.00	1.12	0.29	Afric Audney and Audney South diked out
WB-11-06 (-70°) including and which includes	92.00	1.00	68.00	67.00	1.40	1.08	Afric Audney South Audney "
		7.50	8.50	1.00	18.18		
		64.30	65.60	1.30	45.18		
		64.30	64.80	0.50	71.33		
WB-11-07 (-50°) including and and and and and and and	152.00	2.00	152.00	150.00	1.04	0.99	Caly Vein Caly N Vein ? ? ? Audney South Audney Vein Audney Vein
		7.50	7.80	0.30	43.87		
		11.30	11.80	0.50	6.84		
		70.00	71.00	1.00	6.91		
		81.10	81.60	0.50	16.37		
		83.00	83.50	0.50	8.06		
		113.00	114.00	1.00	22.16		
		120.80	121.50	0.70	15.86		
		129.00	134.00	5.00	3.58		
WB-11-08 (-70°) including which includes	32.00	2.00	32.00	30.00	2.42	1.07	Afric Caly + Caly N Caly Vein Caly N Vein
		14.50	18.20	3.70	17.25		
		14.50	14.80	0.30	147.69		
		17.80	18.20	0.40	40.43		
WB-11-09 (-50°) including which includes and and and which includes	161.00	2.00	161.00	159.00	1.25	1.05	Afric Caly + Caly N Caly Vein ? ? Audney Vein "
		16.00	20.00	4.00	14.94		
		16.50	17.00	0.50	51.25		
		54.00	55.00	1.00	28.64		
		67.00	68.00	1.00	5.81		
		142.00	146.30	4.30	10.28		
WB-11-10 (-70°) including and and	35.00	1.20	35.00	33.80	0.55	0.55	Afric Caly Vein ? ?
		8.90	9.40	0.50	6.03		
		26.00	26.40	0.40	4.11		
		30.00	31.00	1.00	7.93		
WB-11-11 (-50°) including which includes and and and and and and which includes	152.00	2.50	152.00	149.50	3.21	1.20	Afric Caly System ? ? Caly Vein Caly N Vein " ? Audney Vein "
		2.80	36.00	33.20	12.49		
		2.80	4.00	1.20	5.52		
		14.00	15.00	1.00	35.78		
		21.60	22.00	0.40	760.15		
		26.00	34.00	8.00	6.39		
		26.00	29.00	3.00	11.96		
		61.00	62.00	1.00	3.05		
		134.00	136.00	2.00	13.20		
134.70	135.30	0.60	28.76				
WB-11-12 (-70°) including and and	35.00	1.20	35.00	33.80	1.58	1.58	Afric Caly Vein Caly N Vein ?
		20.00	22.00	2.00	13.18		
		26.00	27.00	1.00	3.21		
		33.80	34.40	0.60	7.68		

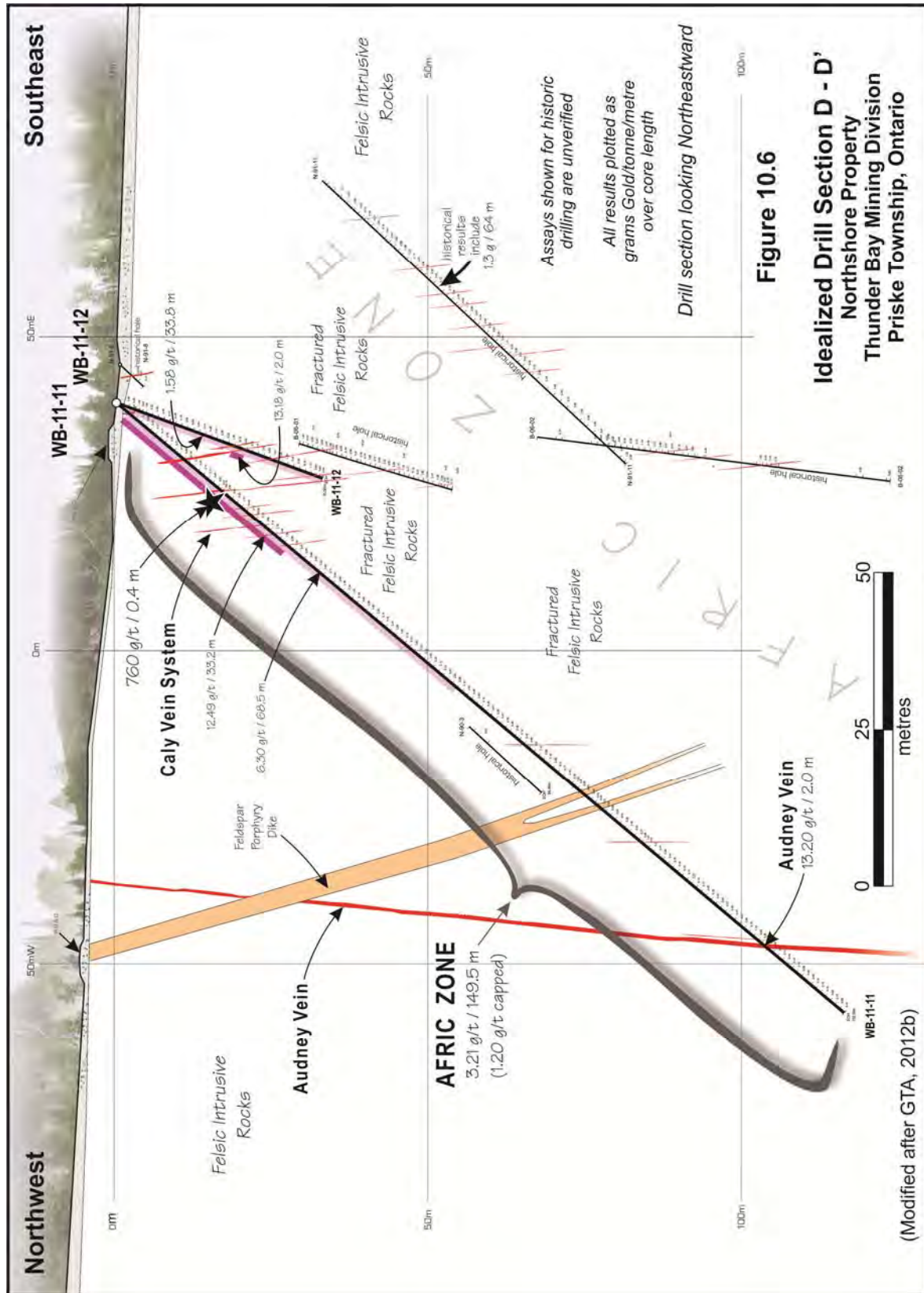












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## 11 SAMPLE PREPARATION, ANALYSES AND SECURITY

Most of the following text applies to the procedures utilized by GTA during their 2011 drilling program, based upon information provided to the author by R. Duess, V. P. Exploration for GTA. No aspect of the sample preparation or analysis was conducted by an employee, officer, director or associate of GTA.

### 11.1 Historical Sampling Procedures

There is no detailed information regarding sample preparation, analyses or security in the private and publicly-available reports documenting pre-1997 grab, chip, channel, or drill core sampling. Such detailed information was usually not required prior to the adoption of NI 43-101 procedures in 2001. Since none of this information is available, the author cannot comment on the validity of historical sampling preparations and securities. It is assumed that the samples were prepared, analysed and secured following industry standards in use prior to the adoption of NI 43-101 procedures in 2001.

The 2007 American Bonanza assessment report does mention the rental of a rock saw for their drill core sampling but not how the drill core was handled or secured prior to analysis. Since this information is not available, the author cannot comment on the validity of American Bonanza's sampling procedures. It is assumed that their sample collection and handling, plus any quality control and quality assurance procedures, were carried out following current industry standards.

### 11.2 2011 Sample Preparation

The 2011 surface sample and diamond drilling program conducted out by GTA utilized handling, logging, sampling, QA/QC, security and storage procedures compliant with current industry-standard practises and within NI 43-101 guidelines.

Surface grab and channel samples were collected by GTA field personnel from exposed mineralized quartz veins, quartz-carbonate stockwork structures and highly altered country rock material. The rock samples were correctly collected and described on site, and placed in a labelled 6-mil plastic sample bags with unique sample tags. The bagged samples were then transported to GTA's field office in Schreiber for storage until their shipping via Greyhound Bus Parcel Express to the sample preparation and analytical facilities of Accurassay Laboratories in Thunder Bay, Ontario where they were prepared and analysed for their gold content.

The 2011 drill core was placed in wooden boxes at each drill site and transported by either the drillers or the supervising geologist to GTA's field office. There the core boxes were opened, the core was gently washed clean of drilling fluids, and the drill core was accurately measured to determine core recoveries. After core recovery measurements and geotechnical logging the drill core was geologically logged for its lithology, structure, alteration and mineralization. These observations were recorded as written notes on pre-prepared log sheets. During the geological logging, the geologist marked the intervals of drill core that should be sampled, respecting lithological contacts and structural features, and the logged drill core was photographed.

The drill core was cut in half lengthwise using a diamond rock saw for those sections deemed worthy of sampling and analysis. One half of the sawn drill core was placed in a 6-mil sample bag and the other half of the drill core was returned to its correct position in the core box. A unique sample assay tag was placed in each core sample bag before the bag was securely sealed. The drill hole number, drilling interval, sample assay tag number were recorded for later transcribing to Chain of Custody documents that accompanied the

samples to the assay laboratory. Quality control standard and blank samples were inserted into the sample sequence at an average rate of 1 standard or 1 blank per 20 drill core samples, representing approximately five percent of the total samples.

After the drill core had been properly logged and sampled the imperial measurements used during drilling were converted to metric units, and the observations recorded in hand-written drill logs were input into a matrix-style spreadsheet for computerization. The core boxes were labelled with an embossed aluminum tag documenting the hole number, box number and drilled interval contained in each box. The core boxes were stored in pre-constructed core racks.

The sealed, documented and bagged drill core samples were placed in larger 'rice' bags which were securely sealed and stored in a locked room within the GTA field office prior to their transportation to the assay laboratory. The drill core samples for drill holes WB-11-01 to -12 were later shipped via Greyhound Bus Parcel Express from Schreiber to the sample preparation and analytical facilities of Accurassay Laboratories in Thunder Bay, Ontario where they were prepared and analysed for their gold content. Sample shipping documents accompanied each drill core sample shipment and any differences between the shipping documents and that received by the laboratory were to be reported immediately to the company. There were, however, no irregularities reported during the entire 2011 drilling campaign.

It is the opinion of the author that GTA's sample handling, storage and shipping procedures were good and compliant with current industry-standards.

### 11.3 2011 Sample Analyses and Assays

At the Accurassay facilities the surface and drill core sample bags were opened, the sample information was recorded into the laboratory database, and the contents were dried in ovens at a low temperature. Dried samples are then weighed prior to being crushed in a jaw crusher to 70 percent less than 8 mesh, and 250 to 500 grams of the crushed material from each sample was split off using a Jones riffle. The remaining 'reject' crushed rock was returned to its original plastic sample bag and packed in containers for return to GTA at periodic intervals. The split sub-sample from each crushed rock sample was then pulverized to 85 percent less than -200 mesh with the + 200 mesh material being re-pulverized and re-screened, and a 30-gram portion was then extracted to use as a sample aliquot. Non-silica based sand is used to clean out the pulverizing dishes between each sample preparation to prevent cross contamination. According to Accurassay, the following procedures were utilized to initially analyse the surface and drill core samples.

*"For the gold analyses, each sample is mixed with a lead-based flux and fused for one hour and fifteen minutes. Each sample has a silver solution added to it prior to fusion which allows each sample to produce a precious metal bead after cupellation. The fusing process results in lead buttons that contains all of the gold from the samples as well as the silver that is added. The buttons are then placed in a cupelling furnace where all of the lead is absorbed by the cupels and a silver bead, which contains any gold is left in each cupel. The cupels are removed from the furnace and allowed to cool. Once the cupels have cooled sufficiently, the silver bead from each is placed in an appropriately labeled test tube and digested using aqua regia. The samples are bulked up to 5 ml with a combination of distilled de-ionized water and a 1% digested lanthanum solution. The samples are allowed to cool and are mixed to ensure proper homogeneity of the solutions. Once the samples have settled, they are analyzed for gold using atomic absorption (air-acetylene flame) or ICP spectroscopy. The atomic absorption or ICP instrument is calibrated for each element using the appropriate ISO 9002 certified standards. The results for the instrumental analysis are checked by the technician and then forwarded to data entry by means of electronic transfer and a certificate is*

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*produced. The Laboratory Manager checks the data and validates the certificates and issues the results in the client requested format.”*

According to Accurassay (2011), any samples that returned gold values exceeding 3 ppm were re-assayed using gravimetric assay methods as follows.

*“For the analysis of higher grade gold samples (having approximately 3 g/t or higher of gold), each sample is mixed with a lead based flux and fused for one hour and fifteen minutes. Each sample has a silver solution added to it prior to fusion which allows each sample to produce a precious metal bead after cupellation. The fusing process results in lead buttons that contains all of the gold from the samples as well as the silver that is added. The buttons are then placed in a cupelling furnace where all of the lead is absorbed by the bone cupels and a silver bead, which contains any gold is left in each cupel. The cupels are removed from the furnace and allowed to cool. Once the cupels have cooled sufficiently, the silver bead from each is placed in an appropriately labeled porcelain cupel and digested using dilute nitric acid to remove the silver. The remaining sponge is rinsed with water and annealed using a torch to produce a gold bead. The gold bead is weighed on a microbalance. The results are checked by the technician and then forwarded to data entry. The Laboratory Manager checks the data, validates it if it is error free and a certificate is produced.*

*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 Accurassay Laboratories and tested by round robin with laboratories across Canada, and ISO certified calibration standards purchased from suppliers. Should any of the standards fall outside the warning limits (+/- 2SD); reassays will be performed on 10% of the samples analyzed in the same batch and the reassay values are compared with the original values. If the values from the reassays match original assays the data is certified, if they do not match the entire batch is reassayed. Should any of the standards fall outside the control limit (+/- 3SD) all assay values are rejected and all of the samples in that batch will be reassayed.”*

According to Accurassay Laboratories' website (<http://www accurassay.com/>), the laboratory is accredited as follows.

*“On February 27th, 2002, the Standards Council of Canada (SCC) accredited Accurassay Laboratories for Gold, Platinum, Palladium, Copper, Nickel, and Cobalt under ISO/IEC Guideline 17025, one of the first laboratories in Canada to be so accredited. Accurassay voluntarily participated in this internationally recognized accreditation program to improve our quality systems and to give our customers the assurance of an independent, third party validation of our abilities.*

*Accreditation covers virtually all aspects of our assay laboratory practices including our standard operating procedures (SOP's), our quality control and quality assurance methods and requires successful participation in the PTP-MAL performance testing program. Successful participation means being able to process submitted certified reference material with proper precision and accuracy on a regular (minimum annually) basis.”*

The sample preparation and analytical procedures utilized by Accurassay Laboratories are contained in Appendix III of this report.

## 11.4 2011 Sample Security

The 2011 surface and drill core samples were stored in a locked holding room prior to their shipment via Greyhound Bus Parcel Express directly to Accurassay Laboratories in Thunder Bay, Ontario. Furthermore, all of the samples were securely sealed and Chain of Custody documents accompanied all shipments. The analytical results from these samples were received by authorized GTA personnel using secure digital transfer transmissions, and these results were restricted to qualified GTA personnel prior to their publication.

Upon completion of the drilling program the diamond drill core and assay sample rejects were catalogued and securely stored in GTA's field office and core storage facility in Schreiber, Ontario.



**Photograph No. 11.1: GTA Resources' Schreiber drill core logging and sampling facilities**



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## 12 DATA VERIFICATION

### 12.1 Historical Data Verification

Most of the historical sampling and drilling data mentioned in this Report was generated and reported upon prior to the adoption of NI 43-101 and, as such, quality assurance and quality control programs were largely the responsibility of the individual operators and not commonly commented on.

It is the opinion of the author that referenced historical exploration works may not have been carried out using current industry-standard quality assurance and quality control procedures but most major and junior mineral exploration companies, such as Noranda Exploration, Cyprus Canada and American Bonanza, did conduct random sample check assaying as a regular part of their various assaying and analytical work.

### 12.2 2011 Quality Assurance and Quality Control Program

GTA established a Quality Assurance and Quality Control ('QA/QC') program utilizing quality control samples to monitor accuracy (i.e. sample standards), contamination (i.e. sample blanks), precision (i.e. duplicates) and other possible sampling errors (i.e. sample mislabelling).

The QA-QC protocol utilized on the project targeted an insertion rate of quality control samples at a rate of 5 percent to the assay laboratory. Thus, a quality control sample was supposed to be inserted randomly within every 20 consecutive samples, alternating between standard, blank or duplicate samples. The standard and blank samples were to be inserted into the sample sequence as the sample shipment was being readied. Any duplicate samples were inserted into the sample sequence at the time of collection. The quality control samples were similarly numbered as the primary samples and were not identified in any other manner.

#### 12.2.1 Standards and Blanks

According to Duess (2011), standard reference material ('SRM') samples were purchased in 60-gram foil packets from Analytical Solutions Ltd., a qualified third-party vendor, and the blank reference material was comprised of barren granitic rock material cropping out near Schreiber and barren diabase dyke material from diamond drill core. The SRM and blank reference samples were supposed to be inserted at a rate of approximately 1 standard for every 20 drill core samples at irregular intervals in the drill core sample sequence. According to Vallat (2012), sixty SRM samples from 13 different SRM batches and 69 blank samples were inserted into the sample analytical sequence with the 922 primary samples for an average insertion rate of 6.5 and 7.5 percent respectively.

Appendix IV of this report contains the QA/QC report titled 'Northshore Project QAQC Report on 2011 Analytical Results' by Caroline Vallat, P. Geo., and dated March 8, 2012. This report documents a detailed study of the 2011 QA/QC procedures and results. The following text is derived directly from this report.

*"Standards have a known expected value and a known standard deviation. In order to define where contamination or poor accuracy is apparent within reported results, the standard results are charted within control charts with defined limits. For the Northshore project results limits of plus and minus three standard deviations from the mean expected result were used.*

*Blanks are expected to return results at or near the lower detection limit for the results being reviewed. Blanks are also plotted within control charts to review the results for potential*

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*contamination or instrument calibration issues. Blanks represent the accuracy of the samples in a similar fashion to standards.*

*Upon completion of the analyses, standard results were reviewed to define where there were any cases of suspected issues with accuracy or contamination. The review revealed that for the 60 standards and 69 blanks, there were a total of six failed blank instances and ten failed standard instances. This amounts to 8.69 percent of the blank instances and 16.7 percent of the standard instances having failed the initial QA-QC review. Wherever, a standard or blank instance failure occurred within a certificate, reruns were performed on the failed instance as well as on the samples within the vicinity (half way to the next non failing standard or blank instance) of the failed instance. There were 180 samples re-run, and further review of the reported re-run results took place in order to eliminate concern of local issues with accuracy, sample contamination, or instrumentation problems.*

*The standard results have been reviewed in detail, and upon the re-run of results in the vicinity of failed standard instances and the assignment of these results as superseding originals, it can be inferred that there is a reasonable level of accuracy within the primary sample results reported by Accurassay.*

*I recommend that future exploration at the Northshore project includes a similar quantity of standard instances but for fewer different standard materials. From this review, the apparent reliability of the standard materials is also inferred. It is my recommendation that standard materials with few failures at low, mid, and high gold concentrations be used in following exploration programs. Specifically, I recommend the use of the standards 17 Pb, 61 Pb and 62 Pb.”*

The author concurs with the conclusions and recommendations of Vallat (2012). In addition, future blank material should be similar in composition to the host rock, crushed to -3/4 to -1/2 inch, and it should be thoroughly analysed and certified barren. Similar, coarse-crushed blank material is necessary to fully duplicate the crushing and pulverizing process of the assay samples and identify if there is contamination in the preparation stage. Finely-ground blank material will drop between the crusher plates and not collect any possible contamination from the plates.

### **12.2.2 Field Duplicates**

Forty-nine core intervals were quartered and submitted for duplicate analyses within the primary sample batches for an insertion rate of 5.3 percent. The following text is derived directly from the report by Vallat (2012),

*“Field duplicate sampling involves the splitting of sample material into a primary and secondary (or duplicate) sample. The splits are submitted to the lab separately with unique sample identification codes. This results in a representation of reproducibility or inferred precision that is blind to the sample preparation lab.*

*Duplicate sampling is a measure of all levels of error pertaining to the sampling and analysis of geological data. Relevant error includes sample splitting error, sample size reduction at the preparation laboratory, analytical error, and possible sample over-selection. Duplicate samples are compared directly to the primary sample using analytical tests as well as scatter charts. Duplicate samples are also plotted on Thompson-Howarth charts showing a statistical representation of the precision level of the data set.*

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*The field duplicate pairs have been found to show a lack of repeatability. The scatter plots shows that there is no particular bias towards one or the other sample type being of higher or lower concentration. However, the precision is poor.*

*In my opinion this is very likely due to the nature of the mineralization at the Northshore project, where the drill core halves are actually of varying concentrations, likely due to coarse mineralization locally and a resultant nugget effect. It will be beneficial to the project to analyze the degree of coarse mineralization using screen fire assay techniques. The preparation of the duplicate samples might then be addressed, in order to maintain a “blind to the lab” representation of the repeatability within the reported results.”*

It is the author's opinion that such a 'nugget' effect is quite common with this type of mesothermal vein mineralization and the discrepancies between original and duplicate sample analyses does not indicate a specific problem with either of the assay laboratories' analytical procedures. Both assay laboratories regularly conducted internal sample duplication as part of their own QA/QC procedures but their samples are duplicates from the same sample pulp unlike quarter-cuts from the same sample interval. It is recommended that future duplicate sampling be conducted more frequently.

### **12.2.3 Check-Assay Samples**

According to Vallat (2012), sixty-nine representative drill core samples were selected for secondary check-assaying at SGS Canada Inc., Mineral Services in Toronto, Ontario using similar analytical or assaying techniques as those utilized originally at Accurassay Laboratories. The sample pulps for these samples were shipped directly from Accurassay Laboratories to SGS Canada.

SGS Canada reported an average gold value of 0.733 ppm for the check-assay samples versus an average original gold value of 0.849 ppm reported by Accurassay. The difference of the mean gold values is -0.11 ppm gold, but if a few anomalous results are excluded the average difference is only 0.034 ppm gold (Vallat, 2012). According to Vallat (2012), “Overall, it can be inferred through a review of the check sample results that there is no significant bias in the results reported by Accurassay”.

It is the opinion of the author that the GTA's 2011 QA/QC procedures were adequate but future QA/QC procedures should be continually monitored and reviewed throughout the entire sampling and analytical phases.

### **12.2.4 Accurassay Laboratories' QA/QC Procedures**

In addition to the QA/QC procedures undertaken by GTA, Accurassay Laboratories also employs an internal quality control system that tracks certified reference materials and in-house quality assurance standards. According to Accurassay Laboratories' website (<http://www accurassay.com/>), “Accurassay Laboratories uses a combination of reference materials, including reference materials purchased from CANMET, standards created in-house by Accurassay Laboratories and tested by round robin with laboratories across Canada, and ISO certified calibration standards purchased from suppliers. Should any of the standards fall outside the warning limits (+/- 2SD); re-assays will be performed on 10% of the samples analyzed in the same batch and the re-assay values are compared with the original values. If the values from the re-assays match original assays the data is certified, if they do not match the entire batch is re-assayed. Should any of the standards fall outside the control limit (+/- 3SD) all assay values are rejected and all of the samples in that batch will be re-assayed.”

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## 12.3 Independent Site Visit and Verification Sampling

### 12.3.1 Independent Site Visit

The author visited the Property on November 2, 2011. During the property examination the writer collected six channel samples from the Audney, Caly and Caly North vein structures within the Afric Zone, and four duplicate drill core samples from the 2011 drill cores. The drill core was securely stored indoors at GTA's field office and core storage warehouse in Schreiber (see Photograph No. 11.1).

### 12.3.2 Verification Sampling and Analytical Procedures

The author collected three channel samples from the trenched outcrop of the Audney vein and three channel samples from the trenched outcrop of the Caly and Caly North veins (see Figure 12.1). Due to the relative narrow widths of these mineralized veins, a large 8- to 10-kilogram sample of the entire vein material was collected at each sample site. These samples were placed in 6-mil plastic sample bags, thoroughly described and a unique sample assay tag was placed in each sample bag prior to sealing it. These samples were transported from site by the author, placed in two large, labelled poly bags for shipping and securely stored pending shipment for analysis.

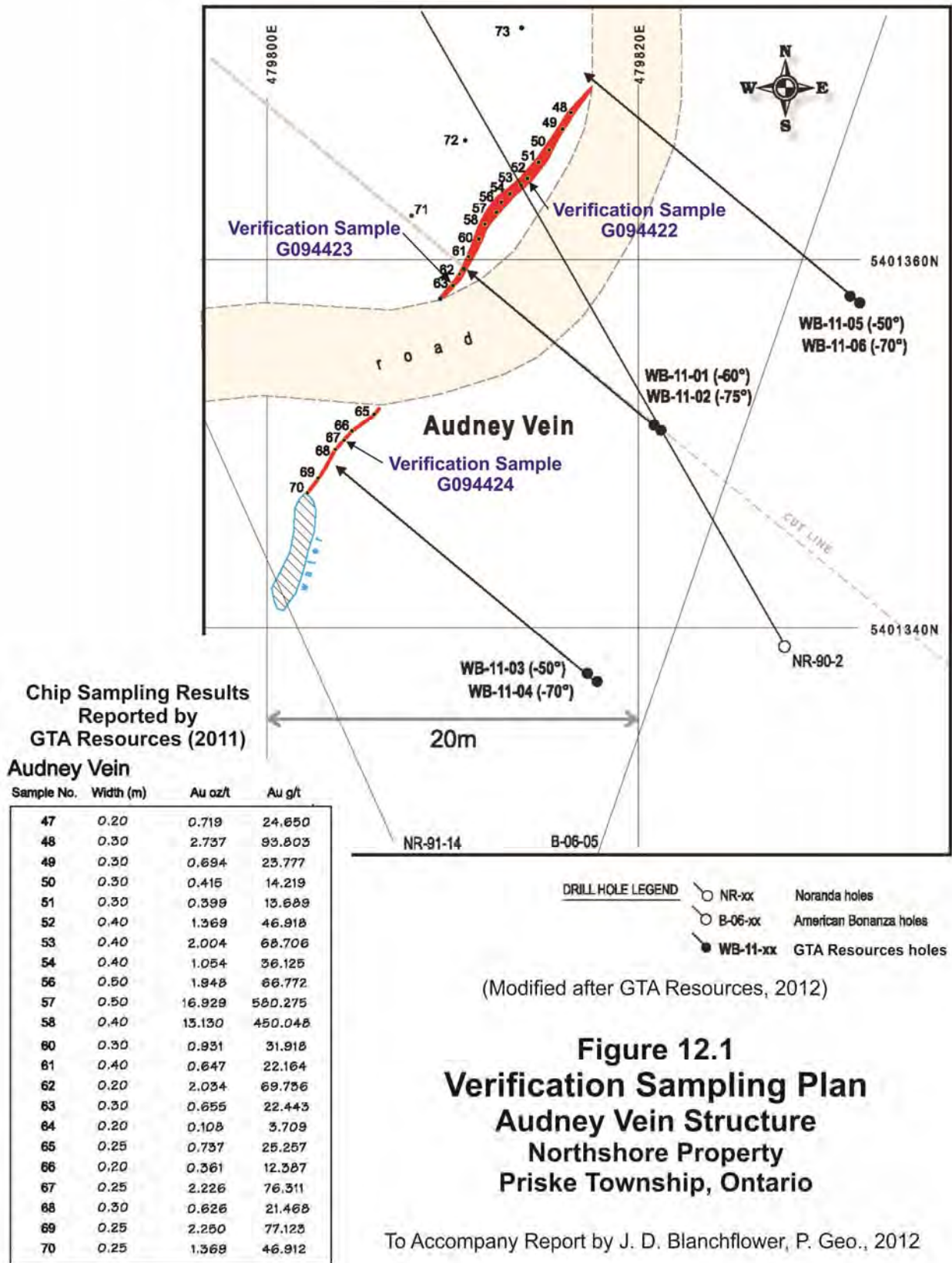
Four drill core verification samples were collected from mineralized intercepts within drill hole WB-11-01 and -08. These samples were sawn lengthwise from halved drill cores that had been previously sampled and analysed. The sawn one-quarter drill cores were placed in 6-mil plastic sample bags, thoroughly described and, like the surface samples, a unique sample assay tag was placed in each sample bag prior to securely sealing it.

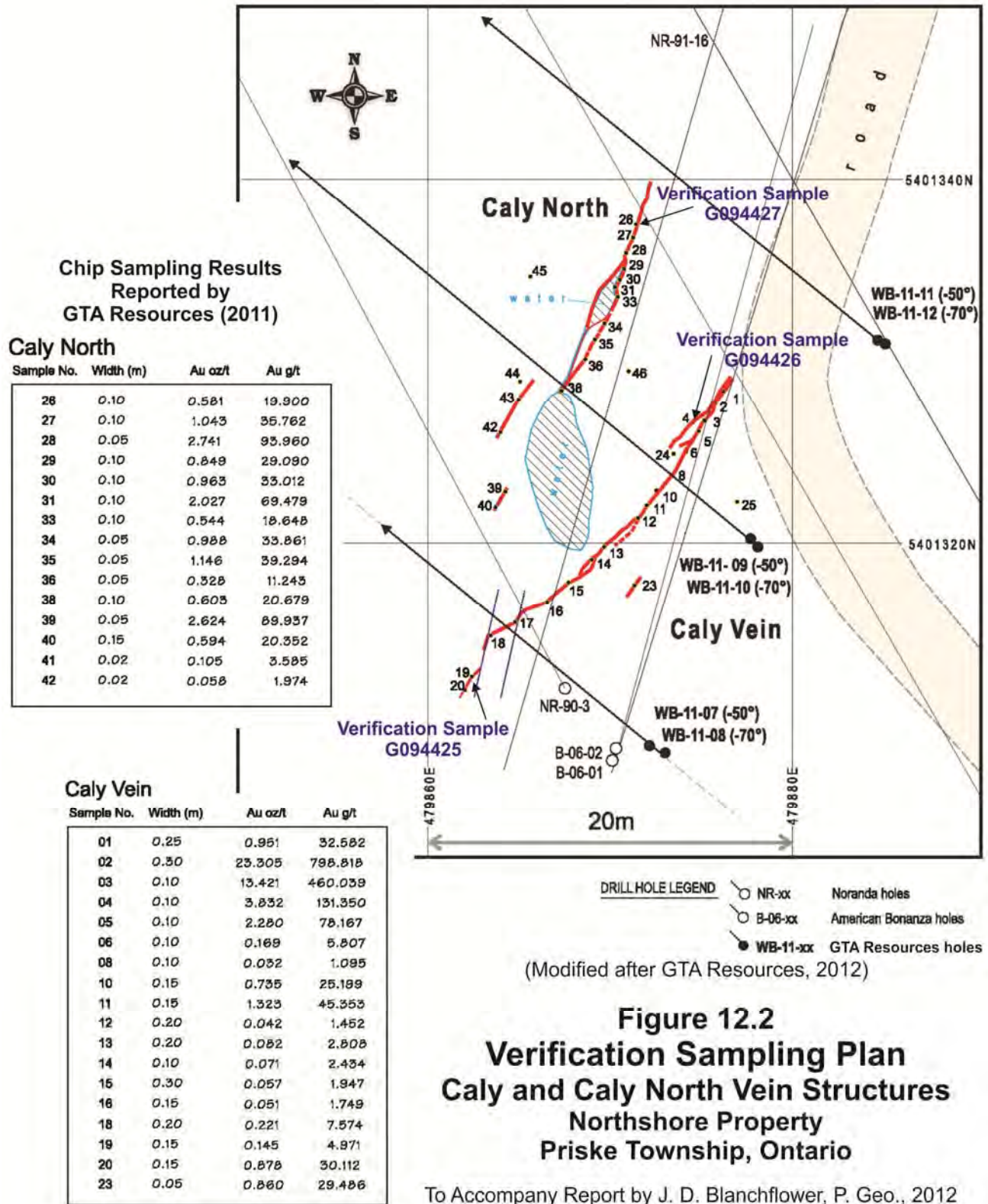
The ten verification samples were delivered by the author to the Greyhound Bus Parcel Express depot in Schreiber for direct shipping to Accurassay Laboratories in Thunder Bay, Ontario where they were prepared and analysed for their gold plus multi-element content. The author instructed Accurassay Laboratories to analyse the verification samples using similar procedures to those utilized for the original drill core analyses so the results might be comparable.

At Accurassay Laboratories the samples were logged into their tracking system, dried, weighed and then prepared using the same procedures as described in Section 11.3 of this report. The ten verification samples were then initially analysed using ICP procedures for gold plus 33 other elements, including: silver, aluminum, arsenic, boron, barium, beryllium, bismuth, calcium, cadmium, cobalt, chrome, copper, iron, potassium, lanthanum, magnesium, manganese, molybdenum, sodium, nickel, phosphorus, lead, antimony, selenium, silica, tin, strontium, thorium, titanium, vanadium tungsten, yttrium, and zinc. See Section 11.3 for a description of the AA/ICP procedures and Appendix V of this report contains the assay certificates and analytical procedures used for the verification sample analyses.

Eight of the verification samples, samples G094422 to G094427, G094429 and G094431, returned over-limit gold values (greater than 3 gpt Au) that required re-assaying. These samples were re-assayed using gravimetric procedures described in Section 11.3 of this report.

The certification and accreditation of Accurassay Laboratories has been documented in Section 11.3 of this report.





### 12.3.3 Verification Sampling Results

The gold values in the verification samples are within reasonable ranges of those reported by GTA for the same surface channel and drill core intervals. Larger differences in gold grades between the two sample sets, and even between the same verification samples analysed initially by a fire assay/atomic absorption method and later by a gravimetric method, are primarily due to a 'nugget effect' with the gold distribution. In addition, the verification drill core sample volumes were half of the original drill core sample volumes, and there were probably slight differences in assay procedures between the two assay laboratories which may also contribute to the differences in gold grades.

The Accurassay Laboratory assay results and procedures are contained in Appendix V of this report. A comparison of the original and verification sample gold grades has been tabulated with the sample descriptions in Table 12.1 of this report.



**Photograph No. 12.1: Audney vein footwall contact in drill hole WB-11-01 at 29.8 m**



**Photograph No. 12.2: View of the Audney vein looking northeastward at verification sample site G094422 (see Figure 12.1).**

**Photograph No. 12.3: View of the Caly North vein looking southwestward from the verification sample site G094427 (see Figure 12.2).**





Table 12.1: Verification Sample Descriptions and Analytical Results

Sample No.	UTM N. (m)	UTM E. (m)	Sample Type	Lgth (in)	Lgth (cm)	Sample Description	Au (ppm)		Au (gpt)		Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)
							FA/JAA	Grav Chk	GTA	GTA				
G094422	5,401,364.4	479,814.1	Chip	10.0	25.4	White quartz vein with local pyrite disseminations and very fine grained visible gold. At GTA sample site 52, Audrey vein	27,583	31,786		3	115	10	138	
G094423	5,401,358.6	479,810.1	Chip	6.0	15.2	White quartz vein with local pyrite disseminations and very fine grained visible gold. At GTA sample site 63, Audrey vein	20,786	25,044		3	9	82	<1	
G094424	5,401,351.6	479,805.8	Chip	6.0	15.2	White quartz vein with local pyrite disseminations and very fine grained visible gold. At GTA sample site 67, Audrey vein	138,294	559,981		53	74	372	<1	
G094425	5,401,312.7	479,862.4	Chip	6.0	15.2	White quartz vein with local fracture filling limonite. At GTA sample site 19, Caley vein	16,293	13,665		<1	10	3	<1	
G094426	5,401,326.6	479,874.5	Chip	6.0	15.2	Caley white quartz vein with local fracture filling limonite and minor galena-sphalerite. At GTA sample site 4, GPS # 13, Caley vein	96,148	342,339		34	35	362	306	
G094427	5,401,338.6	479,871.8	Chip	6.0	15.2	White quartz vein with local fracture filling pyrite, galena, sphalerite and visible gold. At GTA sample site 26, GPS # 14, Caley North vein	13,692	8,536		<1	11	7	<1	
G094428	DDH WB11-01		Core	15.7	40.0	Duplicate sample of #1233032 (28.9-29.3 m) from DDH WB11-01. Silicified felsic intrusive with 2-5% f.g. pyrite between two quartz veins.	2,296		9,516	<1	125	6	<1	
G094429	DDH WB11-01		Core	19.7	50.0	Duplicate sample of #1233034 (29.3-29.8) from DDH WB11-01. Quartz vein with v.f.g. disseminated grey sulphide, ~ 2% pyrite and visible gold.	55,244	56,576	131,992	39	99	38	4518	
G094430	DDH WB11-01		Core	19.7	50.0	Duplicate sample of #1233041 (32.0-32.5 m) from DDH WB11-01. Quartz vein with 2 - 5% pyrite.	1,047		1,872	<1	27	7	45	
G094431	DDH WB11-08		Core	11.8	30.0	Duplicate sample of #1233808 (14.5-14.8) from DDH WB11-08. Quartz vein with 2 - 5% pyrite.	131,946	481,257	147,689	33	1207	250	4332	

### **13 MINERAL PROCESSING and METALLURGICAL TESTING**

No mineral processing or metallurgical testing has been done by GTA, and no such work has been documented in recent exploration and assessment reports on the Property. However, mineral processing was obviously carried out during its early mining history. There is no indication in any of the historical reports that the gold-bearing mineralization presented any specific metallurgical or processing challenges.

### **14 MINERAL RESOURCE ESTIMATES**

There are no current 43-101-compliant Mineral Resource estimates for the subject property.

### **23 ADJACENT PROPERTIES**

There is no noteworthy adjacent property within 6 miles (10 km) that meets the criteria defined in NI 43-101, Section 1.1.

### **24 OTHER RELEVANT DATA and INFORMATION**

To the author's best knowledge, all the relevant data and information have been provided in the preceding text.

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## 25 INTERPRETATION and CONCLUSIONS

The Northshore property has very good exploration potential for discovering both higher grade lode gold mineralization and sizeable, lower grade, bulk tonnage-type gold mineralization.

The Property is underlain by Archean-age metavolcanic and intrusive rocks that are regionally altered to greenschist facies and well-fractured by regional deformation and local strike-slip faulting. The syenitic and feldspar porphyritic intrusive rocks underlying the central portion of the Property are hydrothermally altered, pyritized, and host numerous narrow quartz and quartz-carbonate ( $\pm$  tourmaline) mesothermal veins and vein stockworks with significant to high grade gold mineralization. The intervening altered and pyritized intrusive host rocks also host substantial but lower grade gold values commonly associated with pyrite mineralization.

During their 1988 to 1992 tenure Noranda Exploration identified six or more mineralized zones within the central mining claims, including the east-west trending Afric, Northshore and No. 3 Zones and the east-northeasterly to northeasterly trending No. 2, 4 and 5 Zones. Their diamond drilling, and much of the later drilling by Cyprus Canada and American Bonanza, was oriented to intersect these zones perpendicular to their perceived trends without apparent regard to the attitude of the narrower, higher grade lode gold veins that were exposed by their trenching.

Based upon the results from the Audney, Caly and Caly North vein sampling, GTA designed a tightly-spaced diamond drilling program in 2011 to intersect these veins and the intervening altered, pyritized and mineralized intrusive host rocks. The twelve drill holes intersected the three veins, and drill core samples returned significant to high gold values over a strike length of at least 30 m and downdip for at least 125 metres beneath the surface exposures of these veins.

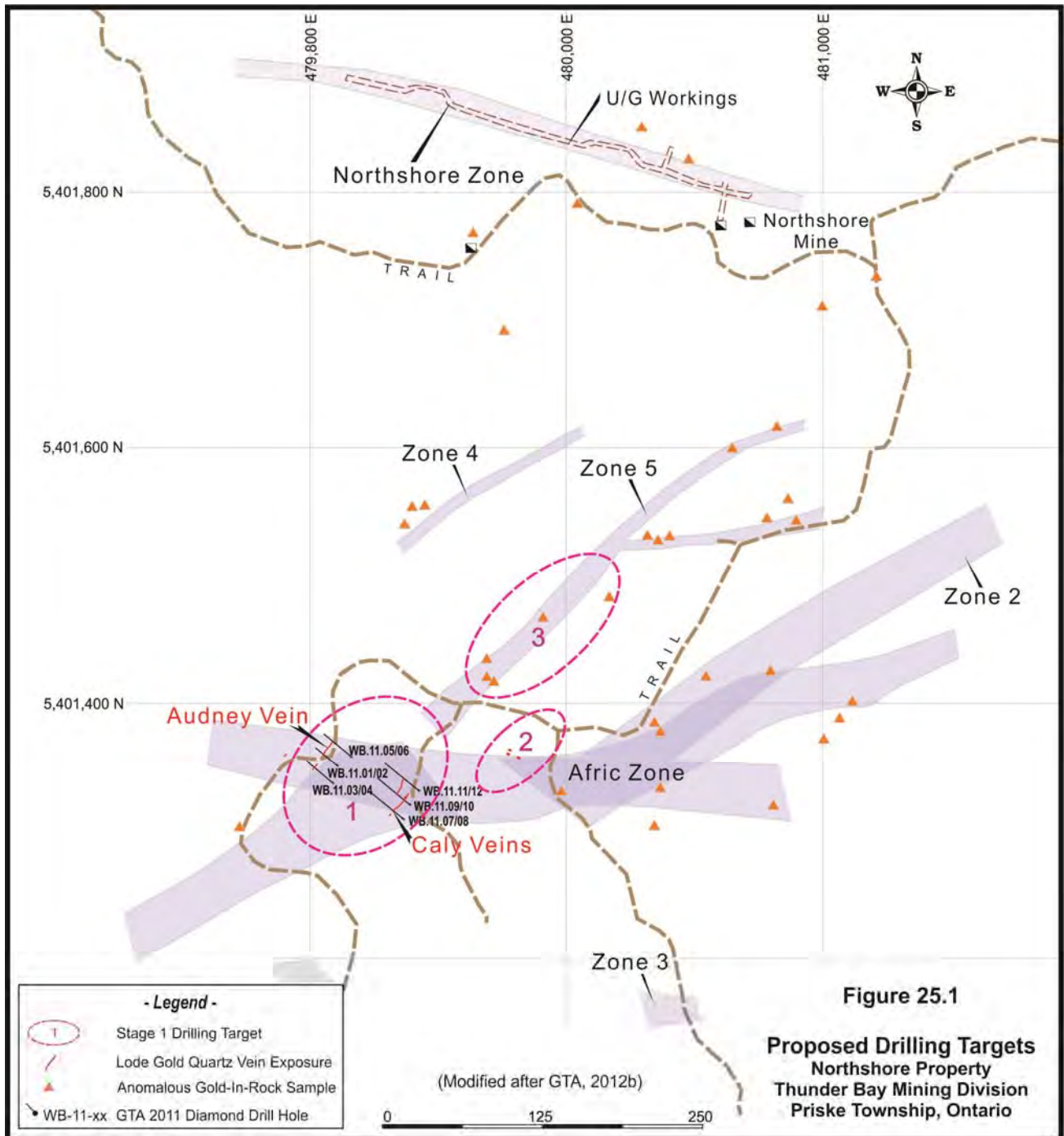
Drill core samples of the three high grade vein structures returned gold values ranging from 2.50 gpt over 2 m to 131.99 gpt over 0.50 m for the Audney vein, and 3.05 gpt over 1 m to 760.15 gpt over 0.40 m for the Caly veins. When the various higher grade vein intercepts are included with the lower grade intervening mineralization it is apparent that the gold mineralization within the Afric Zone extends over relatively long intervals, such as: WB-11-07 with 1.04 gpt gold over 150.0 m (2.00 to 152.0 m), WB-11-09 with 1.25 gpt gold over 159.0 m (2.00 to 161.0 m), and WB-11-11 with 3.21 gpt gold over 149.5 m (2.50 to 152.0 m). These intervals are all drill core lengths, not true widths.

In summary, the Northshore property has a long mining and exploration history dating back to the early 1900's. Most of the early work was concentrated on exploring and developing the Northshore vein structure while recent exploration has mostly focused on investigating the gold mineralization within the Afric zone. It appears from recent exploration results that the lode and bulk-tonnage gold resource potential of the Afric Zone is open in all directions for expansion and the other mineralized zones have only received cursory attention.

It is the author's opinion that there are three obvious drilling target areas for near-term evaluation, including (see Figure 25.1):

- 1) The strike and downdip extensions of the Audney, Caly and Caly North vein structures, including the intervening altered, pyritized and mineralized host rocks, should be fully evaluated. Detailed drilling should be carried out to provide a density of drilling information that could be utilized for later mineral resource estimation;

2) The area immediately east of the central Afric Zone near the old core pile should be drill tested. There are several trenches in this area that are partially sloughed-in but they do expose a number of interesting quartz-carbonate veins that are similar in appearance to the Audney and Caly lode gold structures; and



3) The intervening area between the Afric and No. 5 Zones should be drill tested. Past exploration work discovered several anomalously high gold-in-rock samples situated along this highly prospective northeasterly trend. Such drilling should be directed at intersecting east-northeasterly to northeasterly vein structures, similar in character and orientation to the Audney and Caly vein systems.

Mineral exploration by its nature has attendant risks and uncertainties from the discovery stage through to advanced mine development. For this reason it is incumbent that the Company minimize the uncertainties and financial risks involved in possible advanced exploration drilling by first evaluating the gold resources within the Afric Zone prior to drill testing the several other known gold occurrences on the property. It is the author's opinion that the Northshore property has very good exploration potential for both lode and bulk-tonnage gold mineralization and further work is warranted.

## 26 RECOMMENDATIONS

Given that the Northshore property has very good exploration potential and its continued assessment is justified, a two-phase exploration program is recommended to continue evaluating its potential for both lode and bulk-tonnage gold mineralization. A detailed description of a recommended exploration program follows.

### Phase I

Property-wide prospecting with rock geochemical sampling should be carried out with detailed geological and structural mapping of all known mineralized zones. Whole rock analyses and petrographic studies of the host and country rocks are recommended to positively identify the metallogenic associations of the gold-bearing mineralization. This geological and geochemical work should be conducted concurrently with continued drilling of the depth and strike extensions of the Audney, Caly and Caly North veins (see proposed Target Area 1 on accompanying Figure 25.1). This exploration work does not require government permitting.

### Phase II

Pending a thorough review of the Phase I results, detailed diamond drilling should be carried out on the Afric Zone at a sufficient density to provide the necessary data for three-dimensional modelling of the mineralization. Exploratory diamond drilling should also be conducted east of the 2011 drilling where quartz-carbonate veins are exposed in old trenches ((i.e. Proposed Target 2, Figure 25.1), and between the Afric and No. 5 zones, along the northeasterly trend of the Audney and Caly vein structures (i.e. Proposed Target 3, Figure 25.1). In addition, large samples should be collected from each of the Audney and Caly veins plus another of the intervening pyritized and altered host rocks. These samples should be submitted for preliminary metallurgical testing to determine possible gold recoveries and processing methods. Following the Phase II work, the results should be thoroughly reviewed and a project report prepared documenting this exploration work for corporate and assessment credit purposes.

## 26.1 Proposed Exploration Budget

### Phase I Exploration Budget

Project supervision and reporting by senior geologist/engineer .....	CAD \$ 6,000
Prospecting (2 people for 10 days) with rock geochemical sampling, plus assaying (200 samples @ \$40/sample including shipping and QA/QC inserts) .....	20,000
Trail and survey grid clearing (2 people for 5 days plus expenses) .....	3,500
Geological and structural mapping, review drill core, select petrographic samples plus expenses ....	18,000
Whole rock and petrographic studies.....	2,500
Diamond drilling - 2,500 m @ \$250/m 'all in' drilling expenses (including: drilling expenses, supervision, logging, board and lodging, truck and travel expenses, office/ processing facility utilities and assaying 3,000 samples @ \$40/ sample including QA/QC inserts).....	625,000
Contingency .....	75,000
<b>Total Estimated Phase I Expenditures .....</b>	<b>CAD \$750,000</b>

### Phase II Exploration Budget

Project supervision, reporting and documentation by senior geologist/engineer .....	CAD \$ 30,000
Geological mapping, drill core logging supervision, reporting, plus field expenses.....	80,000
Diamond drilling – 6,000 m @ \$250/m 'all in' drilling expenses (including: drilling expenses, supervision, core logging, board and lodging, truck/travel expenses, office/ processing facility utilities and assaying 7,250 samples @ \$40/ sample including QA/QC inserts).....	1,500,000
Preliminary metallurgical studies (supervised by qualified metallurgist).....	50,000
Three-dimensional modelling, and project documentation .....	30,000
Contingency .....	160,000
<b>Total Estimated Phase II Expenditures .....</b>	<b>CAD \$1,850,000</b>

**Total Estimated Phases I and II Expenditures .....** **CAD \$2,600,000**

---

## 27 REFERENCES

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- 
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- LeGrand, M., 2009: Report on Exploration Campaigns During September 2008, private report prepared for American Bonanza Gold Corp., dated November 2008 and reviewed March 5, 2009, 19 pages and maps, submitted for assessment credit March 18, 2009.
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- Val D'Or Sagax Inc., 1997: Report on Geophysical Work Performed Over the Worthington Property, Priske and Strey Townships, Province of Ontario, private report prepared for Cyprus Canada Inc., September, 1997.



## **APPENDIX I**

### **Mining Claim Documents and Agreements**



2300-1177 West Hastings Street  
Vancouver, BC V6E 2K3  
Tel: 604-638-3664 TF: 1-877-838-3664  
Fax: 604-648-8809  
www.balmoralresources.com  
TSXV: BAR

August 8, 2011

Via email: [tomphe@gmail.com](mailto:tomphe@gmail.com)

Mr. Tom Phelps, President  
Autotrac Limited  
1 Shipyard Lane, Unit 307  
Collingwood, ONT L9Y 0W2

Dear Mr. Phelps

Re: Northshore Property

Further to our conversation we wish to provide formal notification that Balmoral Resources Ltd. has entered into an Option Agreement, and will also execute a Joint Venture Agreement, with GTA Resources and Mining Inc. ("GTA") whereby GTA has been granted, pending regulatory acceptance, the exclusive right to earn up to a 70% undivided interest in the Northshore Property.

Pursuant to clause IX under the terms of the "Exploration License with Option to Purchase" agreement dated October 15, 1999, we request that you please provide written consent, by acknowledging this letter, signing and returning to our offices, for the above mentioned Option Agreement with GTA and, should they vest the option, the eventual transfer of a partial interest in and to the Northshore Property to GTA. Note that under the terms of the GTA Option Agreement GTA has agreed to be bound by the terms and conditions of the "Exploration License with Option to Purchase" agreement dated October 15, 1999.

**BALMORAL RESOURCES LTD.**

  
Darin Wagner, President

Autotrac Limited hereby acknowledges receipt of this letter and does hereby provide its consent for the execution of the Northshore Property Option and Joint Venture Agreements between Balmoral Resources Ltd. and GTA Resources and Mining Inc. and if warranted thereby the transfer of a partial ownership interest in those claims and leases covered by the October 15, 1999 Exploration License with Option to Purchase Agreement to which it is a party from Balmoral to GTA.

On Behalf of AUTOTRAC LIMITED:



Mr. Tom Phelps, President



a division of 1670699 Ontario Inc.

**Suite 100, 105 May Street South  
Thunder Bay, ON P7E 1B1**

**Phone: 807-622-2511**

**Fax: 807-622-7521**

e-mail: [nordicsolutions@tbaytel.net](mailto:nordicsolutions@tbaytel.net)

March 15, 2012

Garry Clark  
Clark Expl. Consulting Inc.  
1000 Alloy Drive  
Thunder Bay, ON

Dear Mr. Clark:

Re: Balmoral Resources Ltd. - Title / Mining PINS

---

Thank you for referring this search to us.

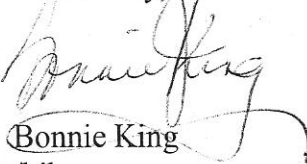
In accordance with your instructions, we obtained PINS for the properties described in your e-mail and submit our report(s) in relation to the properties.

All maps available for the properties are enclosed.

This search was restricted to on-title inquiries, which are summarized, in the reports attached.

We also hope that this search meets with your approval and your needs.

Yours truly,



Bonnie King

/bjk

encl.

TB3719  
PIN: 62458-0003  
PCL 5752 SEC TBF;  
MINING CLAIM TB 3719  
PRISKE;  
SCHREIBER

OWNER:  
BALMORAL RESOURCES LTD.

BJ122)  
BJ123)  
PIN: 62458-0235  
Description:  
PCL 16178  
SEC TBF;  
MINING LOCATION B.J. 122  
PRISKE;  
MINING LOCATION B.J. 123  
PRISKE

T/W ALL THE PLANT, TOOLS, EQUIPMENT, MACHINERY AND ASSETS OF  
ALL KINDS SITUATE OR LOCATED IN, AROUND OR UPON SAID PREMISES  
AND/OR USED IN CONNECTION WITH THE OPERATION OF THE SAME;

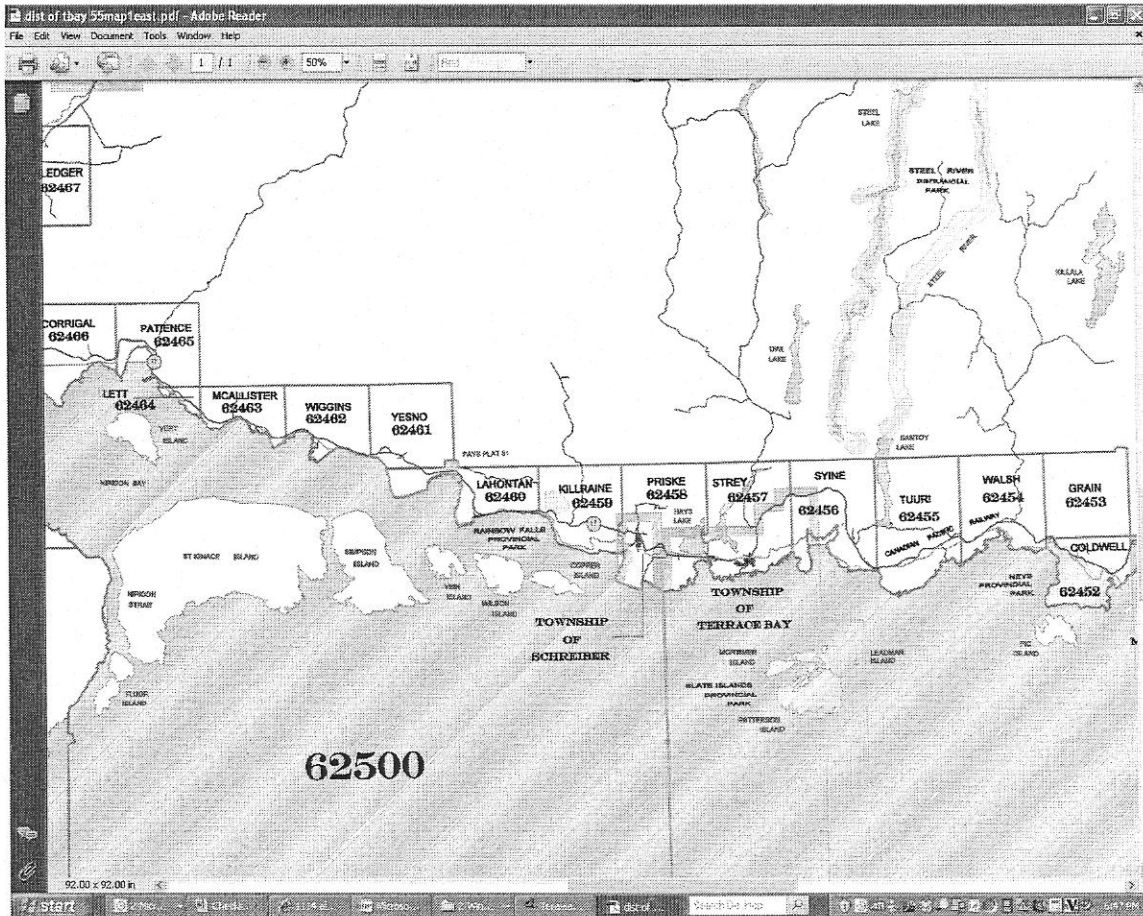
SCHREIBER

Owner:  
BALMORAL RESOURCES LTD.

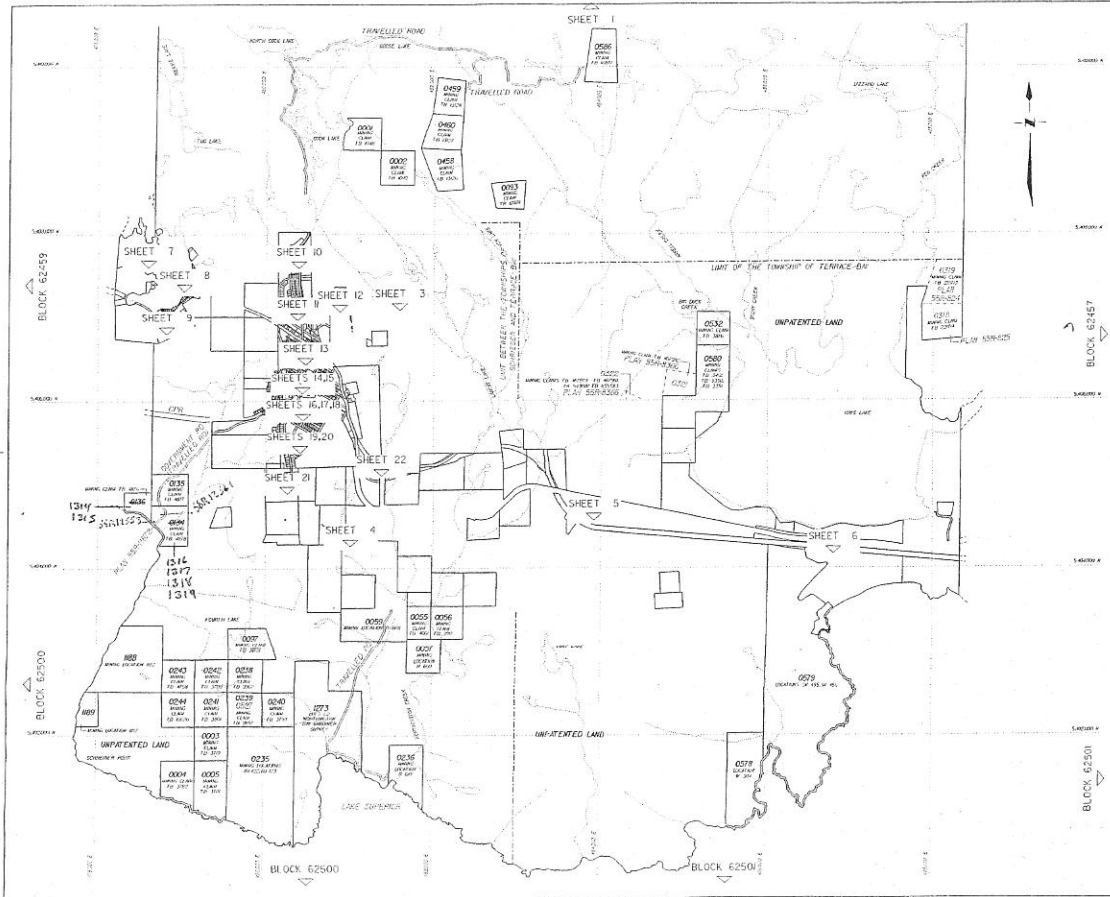
LOC NO. 2)  
LOC NO 1)  
PIN: 62458-1273:  
Description:  
LT 1  
WORTHINGTON BAY  
GARDINER SURVEY 1872  
PRISKE;  
LT 2  
WORTHINGTON BAY  
GARDINER SURVEY 1872  
PRISKE;

SCHREIBER

Owner:  
BALMORAL RESOURCES LTD.








**MINISTRY OF CONSUMER AND BUSINESS SERVICES**  
**ONTARIO**

THIS INDEX MAP SHOWS ALL PROPERTIES EXISTING IN BLOCK 62458 - SHEET 2  
 DT: APRIL 1, 2005

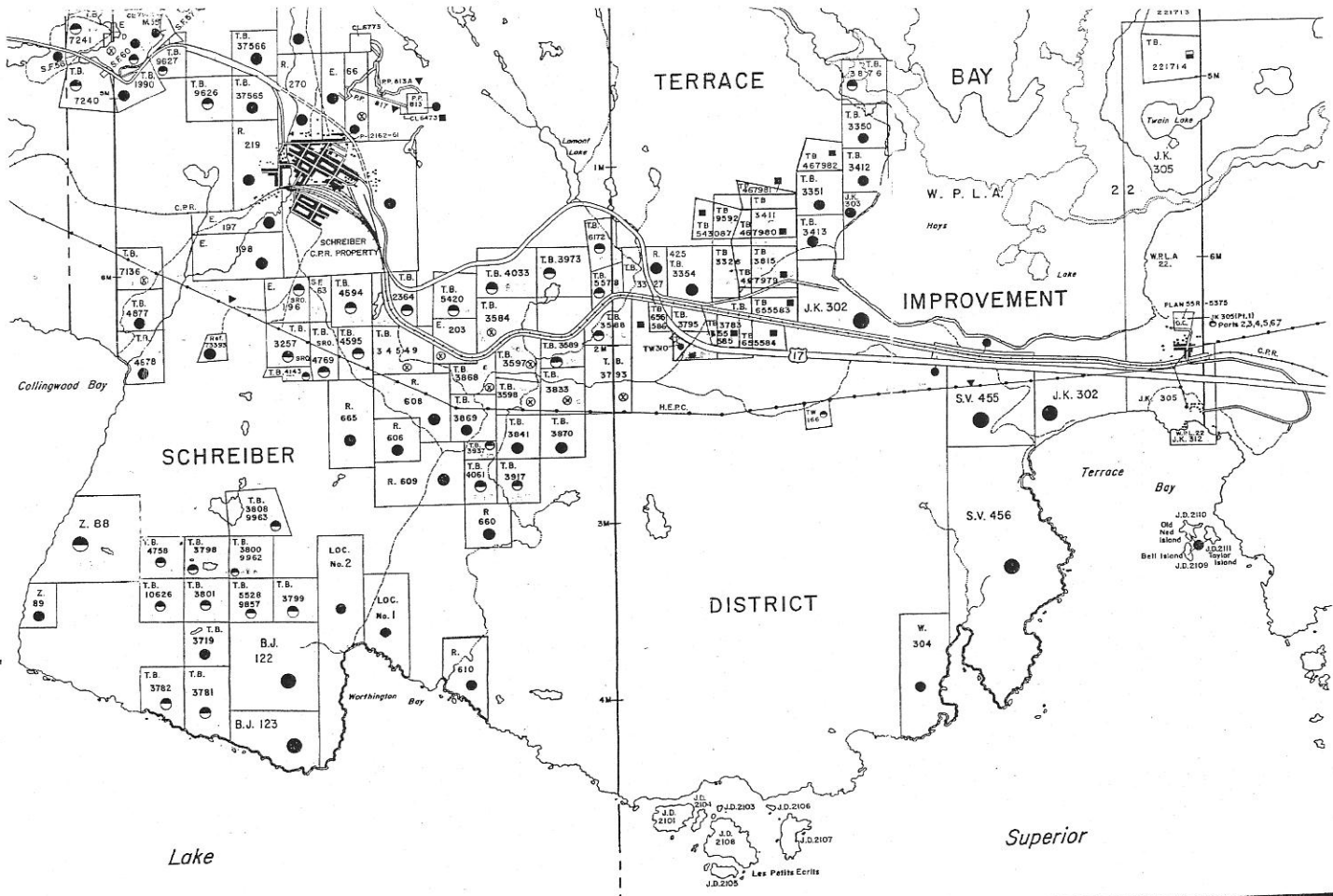
**SCALE**  


**PROPERTY INDEX MAP**  
**BLOCK 62458**  
**THE TOWNSHIPS OF PRISKE, SCHREIBER & TERRACE BAY**  
**DISTRICT OF THUNDER BAY**  
**(OFFICE 55)**

**LEGEND**

FEASIBLE PROPERTY BOUNDARY	---
LEASIBLE PROPERTY BOUNDARY	---
NATURAL RESERVE FOREST BOUNDARY	---
FEASIBLE PROPERTY NUMBER	0001
LEASIBLE PROPERTY NUMBER	0002
NATURAL RESERVE PROPERTY NUMBER	0003
TOWNSHIP FABRIC	---
STRAIGHT/ARC	---
LEGEND	---
VIEW SHED	---
ADJACENT MAP BOUNDARY	---

**NOTES**  
 THIS MAP WAS COMPILED FROM PLANS AND DOCUMENTS REGISTERED IN THE LAND REGISTRY SYSTEM AND HAS BEEN PROVIDED FOR INFORMATION PURPOSES ONLY.  
 THE BOUNDARY OF PROPERTY BOUNDARY IS DETERMINED BY THE MAP DATA NUMBER AND THE PLAN AND BOUNDARY NUMBER APPLICABLE TO EACH ACTUAL PROPERTY.  
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 THE MAP WAS COMPILED FROM PLANS AND DOCUMENTS REGISTERED IN THE LAND REGISTRY SYSTEM AND HAS BEEN PROVIDED FOR INFORMATION PURPOSES ONLY.



STF





a division of 1670699 Ontario Inc.

**SEARCH REPORT**

**PARCEL:** PIN #62458-0235 (LT)

**REGISTERED OWNER:** BALMORAL RESOURCES LTD.

**TITLE ACQUIRED BY:** TY114859 registered on January 26, 2011

**DESCRIPTION:** Parcel 16178 SEC TBF,  
Mining Location B. J. 122  
Priske;  
Mining Location B. J. 123  
Priske together with all the plans, tools,  
Equipment, machinery and assets of all kinds  
situate or located in, around or upon said  
premises and/or used in connection with the  
operation of same;  
Schreiber  
District of Thunder Bay

**NOTE:** SUBJECT TO CROWN GRANT PPA854

**ENCUMBRANCES:** NONE

**EXECUTIONS:**  NOT searched

**NORDIC SOLUTIONS:** DATED: March 15, 2012.  
**PER:**

A handwritten signature in black ink, written over a horizontal line. The signature is cursive and appears to be 'G. J. Priske'.



ServiceOntario

LAND  
REGISTRY  
OFFICE #55

PARCEL REGISTER (ABBREVIATED) FOR PROPERTY IDENTIFIER

PAGE 1 OF 1

PREPARED FOR BKING

ON 2012/03/15 AT 10:16:11

62458-0235 (LT)

SUBJECT TO RESERVATIONS IN CROWN GRANT

**PROPERTY DESCRIPTION:**

PC1 16178 SEC TBF; MINING LOCATION B.J. 122 PRISKE; MINING LOCATION B.J. 123 PRISKE T/W ALL THE PLANT, TOOLS, EQUIPMENT, MACHINERY AND ASSETS OF ALL KINDS SITUATE OR LOCATED IN, AROUND OR UPON SAID PREMISES AND/OR USED IN CONNECTION WITH THE OPERATION OF THE SAME; SCHREIBER

**PROPERTY REMARKS:**

CROWN GRANT SEE PPA854.

**ESTATE/QUALIFIER:**

RECENTLY:  
FIRST CONVERSION FROM BOOK

FEE SIMPLE  
ABSOLUTE

PIN CREATION DATE:  
2004/06/21

**OWNERS' NAMES**

CAPACITY SHARE

BALMORAL RESOURCES LTD.

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
<b>** PRINTOUT INCLUDES ALL DOCUMENT TYPES AND DELETED INSTRUMENTS SINCE: 2004/06/18 **</b>						
LPA45819	1955/04/12	NOTICE				C
FL11264	2002/06/04	NOTICE				C
FL11456	2002/06/12	TRANSFER		INTERNATIONAL TAURUS RESOURCES INC.		
TV21848	2006/02/06	TRANSFER		INTERNATIONAL TAURUS RESOURCES INC.		
TV114859	2011/01/26	TRANSFER	\$350,000	AMERICAN BONANZA GOLD CORP.	AMERICAN BONANZA GOLD CORP.	C
<b>REMARKS: PLANNING ACT STATEMENTS</b>						

NOTE: ADJOINING PROPERTIES SHOULD BE INVESTIGATED TO ASCERTAIN DESCRIPTIVE INCONSISTENCIES, IF ANY, WITH DESCRIPTION REPRESENTED FOR THIS PROPERTY.  
NOTE: ENSURE THAT YOUR PRINTOUT STATES THE TOTAL NUMBER OF PAGES AND THAT YOU HAVE PICKED THEM ALL UP.

204

**CROWN SALE.**

**GRANT**

TO

Steven Mc Kellan  
Esq.

AS MINING LANDS.

Mining Locations of 1/2 and 3/4 mile  
rich in Shunder Bay 2.10 acres

No. 204

Received at the Office of Land Titles

PORT ARTHUR, at 10 o'clock

A. M. of the 14<sup>th</sup> day of Decr

A. D. 1903 and entered in

Folio 44 Vol. 4 Parcel 756 Preceded.

Leominero  
Kerr?

Recorded 14<sup>th</sup> day of Decr 1903.

Liber 173

J. M. Jackson  
Deputy Provincial Registrar.

Province of Ontario

Edward the Seventh, by the Grace of God, of the United Kingdom of Great Britain and Ireland, and of the British Dominions beyond the Seas, King, Defender of the Faith, Emperor of India.

To all to whom these Presents shall come—GREETING:

Whereas Sir Wm. H. Miller and Donald McFellor of the County of Simcoe, Ontario, have petitioned for the absolute purchase of the Lands and Tenements hereinafter mentioned and described, as "Mining Lands" under "The Mines Act," at and for the price or sum of Seven hundred and Sixty Dollars of lawful money of Canada, and of which Lands we are seized in right of Our Crown.

And We are, that in consideration of the said sum of Seven hundred and Sixty Dollars well and truly paid to Our use, and before the sealing of these Our Letters Patent, We have granted, and by these Presents do grant, unto the said Sir Wm. H. Miller and Donald McFellor

in fee simple, as "Mining Lands," All the Parcels or Tracts of Land, situate, lying and being in the Township of Simcoe, Ontario, containing by measurement Seven hundred and Sixty acres, to be the same more or less, which said

Mining Lands, do contain One hundred and Sixty acres and do contain Eighty acres situate on the North shore of Lake Simcoe, south of the Township of Simcoe, Ontario, in the Township of Simcoe, Ontario, on plan of survey by Ontario Board of Surveyors, No. 10,000, dated December, 1881, and containing One hundred and Sixty acres, and the right to lay out the same

wherein the Surveyors' Office may deem necessary, to have and to hold unto the said Sir Wm. H. Miller and Donald McFellor each as to an undivided part, to have and to share in the said Lands

Subject nevertheless to all reservations, provisions and conditions contained in the said Act, and also reserving unto Us, Our Heirs and Successors, all pine trees standing or being on such Lands, as provided by section Thirty-nine of the said Act, and also saving, excepting and reserving unto Us, Our Heirs and Successors, the free use, passage and enjoyment of, in, over and upon all navigable waters which shall or may hereafter be found on or under, or be flowing through or upon any part of the said

Parcels or Tracts of Land hereby granted as aforesaid, and reserving also right of access to the shores of all rivers, streams and lakes for all vessels, boats and persons, together with the right to use so much of the banks thereof, not exceeding one chain in depth from the water's edge, as may be necessary for fishing purposes.

GIVEN under the Great Seal of Our Province of Ontario, this 11th day of August, 1881: The Honourable Sir William Mowbray Miller, Secretary.

Member of Our Privy Council for Canada and Lieutenant-Governor of Our Province of Ontario.

At Our Government House, in Our City of Toronto, in Our Province of Ontario, this 11th day of August, 1881, in the year of Our Lord one thousand nine hundred and eighty-one, and in the 35th year of Our Reign.

Wm. H. Miller and Donald McFellor

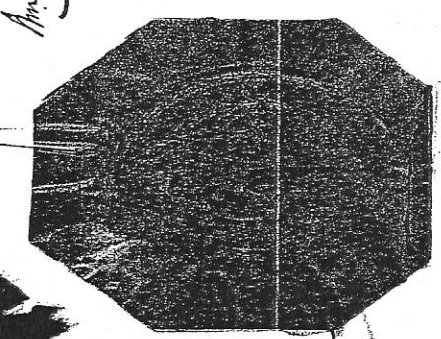
Wm. H. Miller and Donald McFellor

Wm. H. Miller and Donald McFellor

Wm. H. Miller and Donald McFellor

Wm. H. Miller and Donald McFellor

Wm. H. Miller and Donald McFellor



Wm. H. Miller and Donald McFellor

(Mining Patent Act of 1869.)

*The 39th Section of "The Mines Act," is as follows :*

39—(1) The patents for all Crown Lands sold as mining lands shall contain a reservation of all pine trees standing or being on the lands, which pine trees shall continue to be the property of Her Majesty, and any person holding a license to cut timber or saw logs on such lands may at all times during the continuance of the license enter upon the lands and cut and remove such trees and make all necessary roads for that purpose.

(2) The patentees or those claiming under them (except patentees of mining rights hereinafter mentioned) may cut and use such trees as may be necessary for the purpose of building, fencing and fuel on the land so patented, or for any other purpose essential to the working of the mines thereon, and may also cut and dispose of all trees required to be removed in actually clearing the land for cultivation.

(3) No pine trees, except for the said necessary building, fencing and fuel, or other purpose essential to the working of the mine, shall be cut beyond the limit of such actual clearing, and all pine trees so cut and disposed of, except for the said necessary building, fencing and fuel, or other purpose aforesaid, shall be subject to the payment of the same dues as are at the time payable by the holders of licenses to cut timber or saw logs.



**NORDIC  
SOLUTIONS**

a division of 1670699 Ontario Inc.

**SEARCH REPORT**

**PARCEL:** PIN #62458-0003 (LT)

**REGISTERED OWNER:** BALMORAL RESOURCES LTD.

**TITLE ACQUIRED BY:** TY114859 registered on January 26, 2011

**DESCRIPTION:** Parcel 5752 SEC TBF,  
Mining Location B. J. 3719  
Priske;  
Schreiber  
District of Thunder Bay

**NOTE:** SUBJECT TO CROWN GRANT PPA3627

**ENCUMBRANCES:** NONE

**EXECUTIONS:**  NOT searched

**NORDIC SOLUTIONS:** DATED: March 15, 2012.  
**PER:**





Ontario ServiceOntario

LAND  
REGISTRY  
OFFICE #55

PARCEL REGISTER (ABBREVIATED) FOR PROPERTY IDENTIFIER

62458-0003 (IT)

PAGE 1 OF 1  
PREPARED FOR BKING  
ON 2012/03/15 AT 10:16:09

SUBJECT TO RESERVATIONS IN CROWN GRANT

PROPERTY DESCRIPTION: PCL 5752 SEC TBF; MINING CLAIM TB 3719 PRISKE; SCHREIBER

PROPERTY REMARKS: CROWN GRANT SEE PPA3627.

ESTATE/QUALIFIER: RECENTLY:  
FEE SIMPLE FIRST CONVERSION FROM BOOK

ABSOLUTE CAPACITY SHARE

OWNERS' NAMES  
BALMORAL RESOURCES LTD.

PIN CREATION DATE:  
2004/06/21

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
** PRINTOUT INCLUDES ALL DOCUMENT TYPES AND DELETED INSTRUMENTS SINCE: 2004/06/18 **						
F111264	2002/06/04	NOTICE				
F111456	2002/06/12	TRANSFER		INTERNATIONAL TAURUS RESOURCES INC.		C
TY21848	2006/02/06	TRANSFER		INTERNATIONAL TAURUS RESOURCES INC.	INTERNATIONAL TAURUS RESOURCES INC.	
TY114659	2011/01/26	TRANSFER	\$350,000	INTERNATIONAL TAURUS RESOURCES INC.	AMERICAN BONANZA GOLD CORP.	
REMARKS: PLANNING ACT STATEMENTS						
				AMERICAN BONANZA GOLD CORP.	BALMORAL RESOURCES LTD.	C

NOTE: ADJOINING PROPERTIES SHOULD BE INVESTIGATED TO ASCERTAIN DESCRIPTIVE INCONSISTENCIES, IF ANY, WITH DESCRIPTION REPRESENTED FOR THIS PROPERTY.  
NOTE: ENSURE THAT YOUR PRINTOUT STATES THE TOTAL NUMBER OF PAGES AND THAT YOU HAVE PICKED THEM ALL UP.

3627

# CROWN SALE

## GRANT

TO

Lewis Harley Keel et al.

MINING LANDS

Mining Claims, 1379 Lowndes St. on

the District of Pender Bay  
of 39 1/2 acres

Recorded 4:15 p.m. day of May 1926  
Liber 311 Folio 336

[Signature]

Deputy Provincial Registrar.

No. 3627

Received at the Office of Land Titles

FORT ARTHUR, at 10 o'clock

A.M. of the 10th day of May

A. D. 1926, and entering

Books 667 Vol. 27 Part 5 152

Pender Bay District.

[Signature]  
Deputy Registrar of Titles



Deposited in Canadian Bank of Commerce, at Fort Arthur, to the credit  
of THE CANADIAN BANK OF COMMERCE.

*David*  
27th January 1937  
Assurance Fund under Land  
Titles Act.

DUPLICATE  
\$ 4.12

This is to Certify that *St. W. Dunne Local Master of Settlements*  
has this day paid into this Bank to the credit of this account the sum  
of *Four* - 19/- Dollars, in respect of *Parcel 5752.2.2994*  
*Charles Bay Township: Parcel 1335.1.101.101*  
*1335.1.101.101, 126, Inc. 121.*  
*A. D. [Signature]*

THE LAND TITLES ACT

In the matter of *Parcel 5752.2.2994*  
*Charles Bay Township*  
*Parcel 1335.1.101.101*

*Charles Bay Township*  
*Parcel 5752.2.2994*

make with and say:

1.- In the name of the above described land.  
2.- This said land is not worth more than *\$400* including the building and fixtures thereon.  
The said building and fixtures are worth at least *\$500*.

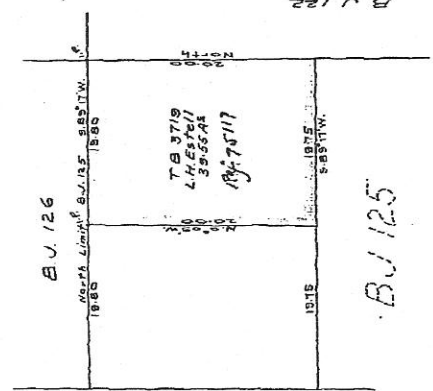
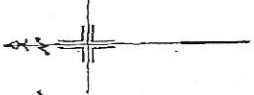
*L. H. [Signature]*

Shewn before me at *Fort Arthur*  
this *11th* day of *January* 1937

*W. [Signature]*

*W. [Signature]*  
Notary Public for the Province of Ontario

PLAN  
of  
MINING CLAIM TB3719  
TOWNSHIP 84  
DISTRICT OF THUNDER BAY  
Scale - 10chrs-1in.



SURVEYS BRANCH

*Edwin Parker*  
DISTRICT SURVEYS

I hereby certify that this plan is correct and is prepared from a survey made under my personal supervision, and that I was in my own proper person present on the ground during the progress of such survey.  
Edwin Parker, District Surveyor, Ontario Land System.

# PROVINCE OF ONTARIO

George the Fifth, by the Grace of God, of the United Kingdom of Great Britain and Ireland, and of the British Dominions beyond the Seas, KING, Defender of the Faith, Emperor of India.

TO ALL TO WHOM THESE PRESENTS SHALL COME—Greeting.

Whereas

*Leases by title of S. 101 in the District of Simcoe by the Hon. the Attorney General for Ontario*

*to certain persons*

have contracted and agreed for the absolute purchase of the Lands and Tenements hereinafter mentioned and described, as "Mining Lands" under "The Mining Act of Ontario," at and for the price or sum of money and in consideration of the sum of money of Canada and of which Lands We are seized in Right of Our Crown.

**Now Know Ye**, that in consideration of the said sum of money and in consideration of the said sum of money, the said Lands and Tenements are granted, sold, and by these Presents do grant, unto the said

*Leases by title of S. 101 in the District of Simcoe by the Hon. the Attorney General for Ontario*  
as "Mining Lands," all that Parcel or Tract of Land situate, lying and being in the *District of Simcoe* in fee simple

in the Province of Ontario, containing by admeasurement *the same as by the said leases is contained* be the same more or less, which said Parcel or Tract of Land may be better known as follows, that is to say, being composed of

*the same as by the said leases is contained in the said District of Simcoe by the Hon. the Attorney General for Ontario*  
*to certain persons*

The lands herein granted are subject to the condition contained in Chapter 11, 7 George V. (Ontario), requiring that all Ores or Minerals mined or removed therefrom shall be treated and refined within Canada, and that in default thereof the lands herein granted shall revert to His Majesty.

Also reserving five per cent. of the acreage hereby granted for roads, and the right to lay out the same where the Crown or its officers may deem necessary. Also reserving unto Us, Our Heirs and Successors, all Trees standing or being on such lands, together with the right to enter upon said land to remove said timber, as provided by Section One Hundred and Twelve of the said Act (Revised Statutes of Ontario, 1914, Chapter 32, as amended by the Ontario Statute, 1918, Chapter 9), and also saving, excepting and reserving unto Us, Our Heirs and Successors, the free use, passage and enjoyment of, in, over and upon all navigable waters which shall or may hereafter be found on or under, or be flowing through or upon any part of the said Parcel or Tract of Land hereby granted as aforesaid, reserving also the right of access to the shores of all rivers, streams and lakes for all vessels, boats and persons, together with the right to use so much of the banks thereof, not exceeding one chain in depth from the water's edge, as may be necessary for fishery purposes.

**Witness** under the Great Seal of Our Province of Ontario. **Witness:** His Honour *Henry Brockton*

At Our Government House, in Our City of Toronto, in Our Province of Ontario, this *11th* day of *April*, in the year of Our Lord one thousand nine hundred and *twentieth* year of Our reign.

Ref. No. *75117*  
Sale No. *4634*

Mining

By Command of the Lieutenant-Governor in Council.

*Henry Brockton*  
Lieutenant-Governor of Our Province of Ontario.

*H. J. Jones*  
Provincial Secretary.



a division of 1670699 Ontario Inc.

**SEARCH REPORT**

**PARCEL:** PIN #62458-1273 (LT)

**REGISTERED OWNER:** BALMORAL RESOURCES LTD.

**TITLE ACQUIRED BY:** TY114859 registered on January 26, 2011

**DESCRIPTION:** Lot 1  
Worthington Bay Gardiner Survey 1872  
Priske;  
Lot 2  
Worthington Bay Gardiner Survey 1872  
Priske  
Schreiber  
District of Thunder Bay

**NOTE:**

None

**ENCUMBRANCES:**

**EXECUTIONS:**  NOT searched

**NORDIC SOLUTIONS:** DATED: March 15, 2012.  
**PER:**

A handwritten signature in black ink, appearing to read 'B. Priske', written over a horizontal line.



Ontario ServiceOntario

PARCEL REGISTER (ABBREVIATED) FOR PROPERTY IDENTIFIER

LAND  
REGISTRY  
OFFICE #55

PAGE 1 OF 1

PREPARED FOR BKING  
ON 2012/03/15 AT 10:16:12

62458-1273 (LT)

\* CERTIFIED BY LAND REGISTRAR IN ACCORDANCE WITH LAND TITLES ACT \* SUBJECT TO RESERVATIONS IN CROWN GRANT \*

**PROPERTY DESCRIPTION:** LT 1 WORTHINGTON BAY GARDINER SURVEY 1872 PRISKE, LT 2 WORTHINGTON BAY GARDINER SURVEY 1872 PRISKE; SCHREIBER

**PROPERTY REMARKS:**

**ESTATE/QUALIFIER:**  
FEE SIMPLE  
LT CONVERSION QUALIFIED

**OWNERS' NAMES:**  
BALMORAL RESOURCES LTD.

**PIN CREATION DATE:**  
2004/09/27

CAPACITY SHARE

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/CHKD
** PRINTOUT	INCLUDES ALL DOCUMENT TYPES AND DELETED INSTRUMENTS SINCE: 2004/09/24 **					
**SUBJECT,	ON FIRST REGISTRATION UNDER THE LAND TITLES ACT, TO:					
**	SUBSECTION 44 (1) OF THE LAND TITLES ACT, EXCEPT PARAGRAPH 11, PARAGRAPH 14, PROVINCIAL SUCCESSION DUTIES *					
**	AND ESCHEATS OR FORFEITURE TO THE CROWN.					
**	THE RIGHTS OF ANY PERSON WHO WOULD, BUT FOR THE LAND TITLES ACT, BE ENTITLED TO THE LAND OR ANY PART OF					
**	IT THROUGH LENGTH OF ADVERSE POSSESSION, PRESCRIPTION, MISDESCRIPTION OR BOUNDARIES SETTLED BY					
**	CONVENTION.					
**	ANY LEASE TO WHICH THE SUBSECTION 70(2) OF THE REGISTRY ACT APPLIES.					
**DATE OF	CONVERSION TO LAND TITLES: 2004/09/27 **					
TBR424862	2002/06/04	AGREEMENT				
TBR425045	2002/06/12	TRANSFER				C
TY21848	2006/02/06	TRANSFER		INTERNATIONAL TAURUS RESOURCES INC.		
TY114859	2011/01/26	TRANSFER	\$350,000	INTERNATIONAL TAURUS RESOURCES INC. AMERICAN BONANZA GOLD CORP.		C
<b>REMARKS: PLANNING ACT STATEMENTS</b>						

NOTE: ADJOINING PROPERTIES SHOULD BE INVESTIGATED TO ASCERTAIN DESCRIPTIVE INCONSISTENCIES, IF ANY, WITH DESCRIPTION REPRESENTED FOR THIS PROPERTY.  
NOTE: ENSURE THAT YOUR PRINTOUT STATES THE TOTAL NUMBER OF PAGES AND THAT YOU HAVE PICKED THEM ALL UP.

FOR OFFICE USE ONLY

424862

REGISTRY OF REGISTRATION  
LAND TITLES  
THUNDER BAY (66)

02 JUN 4 PM 2 15

*Robert Johnson*

REGISTRY OF REGISTRATION  
LAND TITLES  
THUNDER BAY (66)

(1) Registry  Land Titles  (2) Page 1 of 18 pages

(3) Property Identifier(s) Block Property Additional: See Schedule

(4) Nature of Document Agreement

(5) Consideration Dollars \$

(6) Description  
Patented Lots 1 and 2 on Worthington Bay according to survey made by one Gardiner in the year 1872  
In the Municipality of Schreiber District of Thunder Bay

New Property Identifiers Additional: See Schedule

Executions Additional: See Schedule

(7) This Document Contains: (a) Redescription New Easement Plan/Sketch  (b) Schedule for: Description  Additional Parties  Other

(8) This Document provides as follows:

Continued on Schedule

(9) This Document relates to instrument number(s)

(10) Party(ies) (Set out Status or Interest)  
Name(s) Signature(s) Date of Signature  
AUTOTRAC LIMITED J. Douglas Shanks 2001 11 29  
by its solicitors Cheadle, Johnson, Shanks, MacIvor

(11) Address for Service 22 Matchedash Street North ORILLIA, Ontario L3V 4T5

(12) Party(ies) (Set out Status or Interest)  
Name(s) Signature(s) Date of Signature  
INTERNATIONAL TAURUS RESOURCES INC.

(13) Address for Service 322 Water Street, 2nd Floor VANCOUVER, B.C. V6B 1B6

(14) Municipal Address of Property  
not assigned

(15) Document Prepared by:  
JDS\*fs  
Cheadle Johnson Shanks MacIvor  
P. O. Box 10429  
2000 - 715 Hewitson Street  
THUNDER BAY, ON P7B 6T8  
*(1 copy ONLY)*

Fees and Tax	
Registration Fee	60.
Total	

10117-001

Property Identifier(s) and/or Other Information

(b) SCHEDULE FOR:

DESCRIPTION:

FIRSTLY: Parcel 5752 Thunder Bay Freehold Mining Claim TB 3719 Township 84 District of Thunder Bay, being all of the parcel. *see map*

SECONDLY:

Parcel 16178, Thunder Bay Freehold, Mining Location BJ 122, containing 160 acres and Mining Location BJ 123, containing 80 acres, on the North shore of Lake Superior, South of Schreiber, on the Canadian Pacific Railway, District of Thunder Bay.

Being All of the Parcel.

THIRDLY:

~~Patented Lots 1 and 2, on Worthington Bay, according to survey made by one Gardiner, in the year 1872, in the Municipality of Schreiber, District of Thunder Bay.~~

FOR OFFICE USE ONLY

5/2

LAND TITLES ACT

Application to register Notice of an  
Unregistered estate, right, interest or equity  
Section 71 of the Act

TO: The Land Registrar for the Land Titles Division of Thunder Bay

I, **J. DOUGLAS SHANKS**, am the solicitor for **AUTOTRAC LIMITED**.

I confirm that the applicants have an unregistered estate, right, interest or equity in the land described as:

**FIRSTLY:** Parcel 5752, Thunder Bay Freehold, Mining Claim TB 3719 situate in Township of 84, District of Thunder Bay. Being All of the Parcel.

**SECONDLY:** Parcel 16178, Thunder Bay Freehold, Mining Location BJ 122, containing 160 acres and Mining Location BJ 123, containing 80 acres, on the North shore of Lake Superior, South of Schreiber, on the Canadian Pacific Railway, District of Thunder Bay. Being All of the Parcel.

**THIRDLY:** Patented Lots 1 and 2, on Worthington Bay, according to survey made by one Gardiner, in the year 1872, in the Municipality of Schreiber, District of Thunder Bay.

The land is registered in the name of **AUTOTRAC LIMITED**, and I hereby apply under Section 71 of the Land Titles Act for the entry of a Notice in the register for the said parcel.

This notice will be effective for an indeterminate time.

The address for service of the applicants is:

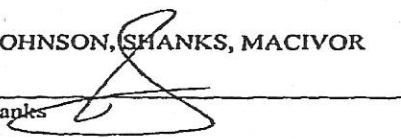
22 Matchedash Street, North, ORILLIA, Ontario L3V 4T5

Dated: November 27, 2001

CHEADLE, JOHNSON, SHANKS, MACIVOR

Per:

J. Douglas Shanks



11  
11  
no



**EXPLORATION LICENSE  
WITH OPTION TO PURCHASE**

This Exploration License With Option to Purchase ("Agreement") is made and entered into effective as of the 15<sup>th</sup> day of October, 1999, by and between Autotrac Limited, with an address of 22 Matchedash Street North, Orillia, Ontario, Canada, L3V 4T5, (hereinafter referred to as "Owner", whether one or more) and International Taurus Resources Inc., ("Taurus") a company duly incorporated under the laws of Canada, having an office at 322 Water Street, 2<sup>nd</sup> Floor, Vancouver, British Columbia, Canada, V6B 1B6.

**WITNESSETH:**

This Agreement will set forth all of the terms and conditions under which Owner grants to Taurus the exclusive right to explore and exclusive option to purchase all right, title and interest of Owner in and to certain patented mining claims, situated in the Worthington Bay area of Priske Township, Thunder Bay Mining Division, Province of Ontario (hereinafter called the "Claims") and more particularly described in the attached Schedule "A".

NOW, THEREFORE, in consideration of the mutual covenants and agreements set forth herein, to be kept and performed by the parties, and other valuable considerations, the parties are agreed as follows:

**I.  
TERM.**

The term of this Agreement shall begin on the day and year first above written and continue thereafter until October 15, 2001, unless sooner terminated or the purchase option granted herein is exercised.

**II.  
PURCHASE OPTION.**

Owner hereby grants to Taurus the exclusive option, exercisable at any time during the term of this Agreement if not in default, to purchase all of Owners right, title and interest in and to the entire surface and mineral estate in the Claims by making Option Payments totaling Eighty Thousand Canadian Dollars (\$C 80,000) as hereinafter set forth (the "Purchase Price").

**III.  
PURCHASE OPTION PAYMENTS.**

Taurus shall pay Owner, subject to prior termination as provided for in this Agreement, the following payments ("Option Payments") all of which shall be credited towards the Purchase Price:

DUE DATE	PAYMENT
Upon execution of this agreement	\$10,000
On or before October 15, 2000	\$20,000
On or before October 15, 2001	\$50,000

Taurus, at its sole election, may exercise its option to purchase the Claims at any time during the term of this Agreement by paying the balance of the Option Payments in full prior to transfer of the Claims.

**IV.  
EXPLORATION LICENSE.**

Owner hereby gives and grants to Taurus the exclusive right and privilege during the term of this Agreement and while not in default to survey, explore for and define the extent and quality of the "Minerals" (as defined below) in such manner as Taurus, in its sole discretion, may deem advisable, including but not limited to, drilling exploration holes, conducting geochemical, geophysical and geological surveys, doing mapping work, making contour surveys, constructing and using test pits or underground workings, excavating, bulk sampling, performing related activities, and removing such material, overburden and Minerals from the Claims as, in Taurus' judgement, is necessary for the proper exploration and evaluation of the Claims. Provided, however, that Taurus may not remove any Minerals from the Claims for purposes of sale, other than those minerals which may be contained in a bulk sample taken as part of an evaluation program, prior to exercise of the option to purchase herein granted. Any revenue received by Taurus from Minerals contained in bulk samples that exceeds the direct costs of obtaining and processing such samples will be paid to Owner as part of the next Option Payment due to be paid.

Taurus may also apply the work completed on the Claims as credit for assessment work credits on other claims surrounding the Claims. As used herein, the term "Minerals" is used in its commonly accepted meaning and shall include any deposit of any and all minerals having value, including any material having a valuable content of any mineral, whether metallic or non-metallic, and shall include coal, oil, natural gas and associated hydrocarbons.

All such activities shall be performed on the Claims at Taurus' sole election and expense, with Taurus acting as operator and having the sole authority, control and discretion with respect to all such operations. Taurus also shall: (i) indemnify Owner

VI.  
REPRESENTATION AND WARRANTIES; TITLE.

A. Representations and Warranties of Owner. Owner represents and warrants that it is the recorded and beneficial owner of 100% interest in the Claims, free and clear of all liens, encumbrances, leases, assignments and reserved rights (excepting only such reservations as are created hereunder), and that there are no actions, suits or administrative or other proceedings pending or threatened against or affecting Owner's interest in the Claims; and that the Claims are in good standing in accordance with the laws of Canada and the Province of Ontario; and that Owner has the full and unrestricted right and authority to enter into and perform this Agreement without obtaining the consent or participation of any other party; and that Owner has not engaged or employed any broker or finder in connection with the negotiation, execution and delivery of this Agreement, and no broker's or finder's fee or commission is due with respect thereto.

Owner further agrees that this Agreement shall cover and extend to any further or additional right, title, interest or estate acquired by Owner in or to the Claims or any portion of the Claims; and that Owner shall maintain, during the term of this Agreement, its interest in the Claims free and clear of any liens and encumbrances, or rights of third parties. In the event that, during the term hereof, any lien or encumbrance is asserted, other those resulting from Taurus' activities on the Claims, which affects Owner's title to the Claims, Owner shall have a period of thirty (30) days to discharge, or contest, such lien or encumbrance. In the event Owner does not discharge (or contest) such lien or encumbrance, Taurus may, at its option, discharge such lien or encumbrance, in whole or in part, and thereafter Taurus shall be subrogated to such lien or encumbrance with the right to enforce same, and the right to credit against and deduct from all Option Payments and Production Royalty payments due hereunder the amounts spent to discharge same.

B. Representation of Taurus. Taurus represents and warrants as follows:

1. that it is a corporation duly incorporated and in good standing in the province or country of incorporation and that it is qualified to do business and is in good standing in those jurisdictions where necessary in order to carry out the purposes of this Agreement;
2. that it has the capacity to enter into and perform this Agreement and has the financial capacity to perform all transactions contemplated herein and that all corporate and other actions required to authorize it to enter into and perform this Agreement have been properly taken;
3. that it will not breach any other agreement or arrangement by entering into or performing this Agreement;
4. that this Agreement has been duly executed and delivered by it and is valid and binding upon it in accordance with its terms;

- 8 4
5. that it will maintain, and provide Owner with evidence of, appropriate insurance in compliance with the laws of the Province of Ontario, Owner shall be named as a co-insured and the insurance shall not be terminated without the prior written consent, not to be unreasonably withheld, of Owner;
  6. that it will provide Owner with proof of insurance or bonding required to cover the costs of any environmental liabilities that may result from its activities on the Property, including any Closure Plan required, or that would be required if the scale of Taurus's activity were larger, by competent government or regulatory authorities. Such insurance or bond will not expire until Taurus has fulfilled these obligations.

## VII. TERMINATION

A. Notice: Default. Owner may terminate this Agreement upon notice to Taurus in the event Taurus is in default of any of the terms of this Agreement, provided that Owner shall first give Taurus thirty (30) days prior written notice of such default specifying the particulars of such default and Taurus shall have failed to correct, commence to correct (such correction to be diligently pursued) such default within the thirty (30) days after receipt of such notice of default, except in the event of failure to make an Option Payment or make Production Royalty payments, then such default shall be cured within such thirty (30) day period

B. Exercise of Option. Upon exercise of the option to purchase by Taurus free and clear of all liens and encumbrances, and with the warranties of title provided herein. Owner shall be entitled to receive Production Royalty payments as set forth in Article VIII. Upon exercise of the option by completion of the Option Payments set forth in Article III and notification of such by Taurus, Owner shall provide Taurus with a deed in fee simple transferring title to the Claims and other conveyancing documentation in form and content satisfactory to counsel for Taurus, sufficient to transfer 100% right, title and interest in and to the entire surface and mineral estate in the Claims to Taurus.

C. Termination by Taurus. Taurus shall have the right to terminate this Agreement at any time prior to exercising the option to purchase referred to in paragraph VII (B) above by giving thirty (30) days written notice to Owner of such election. Such termination shall not release Taurus from any liability or obligation arising as a result of its activities on the Claims prior to the latest of the effective date of said notice, the completion by Taurus of removal of its equipment from the Claims, completion of reclamation obligations by Taurus and the Claims are vacated by Taurus. In the event Taurus terminates this Agreement as provided in this Article VII, Owner shall retain all Option Payments previously made to Owner as full consideration for the rights granted herein, the option shall terminate, and Taurus will provide the Owner with a release of its rights hereunder, in a form acceptable for registering. In the event that the option to

purchase is not exercised for any reason, Taurus shall provide Owner with copies of all factual data resulting from its exploration operations and activities on the Claims including without limitation drill hole logs, drill hole and sample maps and assays. Additionally, if the option is not exercised, at the Owner's request, Taurus shall deliver to Owner at Taurus' expense all drill core and remaining samples removed from the Claims by Taurus.

#### VIII. PRODUCTION ROYALTY

Upon payment of all Option Payments as provided for in Article III and upon Taurus' receipt of a deed in fee simple transferring title to the Claims as provided in Section VII (B), herein Owner shall retain a perpetual non-participating royalty ("Production Royalty") equal to: a two percent (2%) Net Smelter Return ("NSR") on all Products produced from the Claims until the first one million (1,000,000) ounces of gold are produced from the Claims; a three percent (3%) NSR on all Products produced from the Claims until the next two million (2,000,000)(i.e., 1,000,001 ounces to 3,000,000 ounces) ounces of gold are produced from the Claims; and a five percent (5%) NSR thereafter on all Products produced from the Claims:

The Production Royalty to be paid to Owner shall not be diluted as a result of any transaction by Taurus or its successors, unless agreed to by Owner in advance in writing. The Owner shall be entitled to reserve in the deed in fee simple the Production Royalty.

For the purpose of calculating the Net Smelter Return Royalty:

A. "Net Smelter Return" means the Fair Market Value of such ores, minerals, concentrates, metals or materials, less all costs, charges and expenses paid or incurred by Taurus with respect to such Products or deemed incurred, in accordance with this Agreement, by Taurus after such Products leave a mill, including without limitation:

1. all charges of any type for treatment in smelting and refining processes, charges and penalties by an independent refinery or smelter or other unaffiliated purchaser of the products (including but not limited to interests, provisional settlement fees, sampling, assaying and representation costs, penalties, and other processor deduction): in the event Taurus uses its own refinery or smelter for refining and smelting processes, such charges shall be no more than Taurus would pay for use of an independent refinery or smelter;
2. actual costs of transportation (including but not limited to freight, insurance, security, transaction taxes, handling, port, demurrage, delay, and forwarding expenses) incurred by reason of, or in the course of, such or other products from the Claims, to a mill or to an independent refinery or mill and then to the place of sale;

- 108
3. actual sales, marketing and brokerage costs on Product for which the Net Smelter Return Royalty is based on payments received by Taurus, and an allowance for reasonable sales and brokerage costs for Refined Metals;
  4. sales, use, severance, net proceeds of mine, ad valorem taxes, and any taxes on or measured by mineral production (excluding taxes based on income and/or capital).

B. "Payments" shall mean the net dollar amount received by Taurus from the sale of Product.

C. "Deemed Payments" shall mean the Fair Market Value of product upon a deemed sale;

D. A "Sale" shall occur upon the passing of title from Taurus in conjunction with the physical delivery of the Product, to a purchaser.

E. A "Deemed Sale" shall occur upon the deposit of Refined Metals to Taurus' consignment account by a refiner.

F. The "Fair Market Value" with respect to any metals, minerals or other valuable commodities derived from Products means, for the following:

1. for gold, the average of the Daily London Bullion Brokers second gold fixing for the previous calendar quarter;
2. for silver, the average of the daily base price for the New York Handy & Harman noon silver quotation for the previous calendar quarter;
3. for zinc, the London Metals Exchange Special High Grade cash settlement price for zinc, as published in Metals Week, averaged for the previous calendar quarter;
4. for copper, the COMEX First Position High Grade price for copper, as published in Metals Week, averaged for the previous calendar quarter;
5. for crude ores, dore or concentrates produced from ores mined from the Claims, the payments actually received by Taurus during the calendar quarter from the sale of such crude ore, dore, or concentrates.

G. "Products" shall mean any crude Ores, concentrates, dore or Refined Metals removed from the Claims and other metals, minerals or other valuable commodities derived from such crude Ores.

H. "Ores" shall mean all material, which in the sole discretion of Taurus justifies either:

1. mining, extracting, or recovering minerals from the Claims and selling or delivering to a processing plant or other facility for physical or chemical treatment or,
2. treating in place on the Claims by chemical, solution, or other methods.

Said term shall also include but not be limited to all mineral bearing solutions, natural or introduced, recovered by Taurus from the Claims and sold or processed by Taurus, and all mineral and non-mineral components of all such materials and solutions.

I. "Refined Metals" shall mean gold and silver mined and removed from the Claims and refined to bullion standards of at least 99.5% pure gold and 99.9% pure silver.

J. All Products for which a royalty is payable shall be weighted or measured, sampled and analyzed in accordance with standard mining and metallurgical practices. Upon request to Taurus, and at the Owner's expense, Owner shall have the right to have a representative present at the time samples are taken. After such measurement, Taurus may mix or commingle such ores, materials for Products with ores, materials or products from other property.

K. Production Royalties, when payable, shall accrue monthly at the end of each calendar month, and shall become due and payable quarterly on the last day of each month following the last day of the calendar quarter in which the same accrued. Said payments shall be accompanied by a settlement sheet showing in reasonable detail the quantities and grades of the minerals, concentrates, and other mineral products processed by Taurus for the preceding calendar quarter; and other pertinent information in sufficient detail to explain the calculation of the Production Royalty payment. Additionally, Taurus shall include a statement representing that the information and calculations provided have been done in accordance with the Agreement.

L. All Production Royalty payments shall be considered final and in full satisfaction of all obligations of Taurus with respect thereto, unless Owner gives Taurus written notice describing and setting forth a specific objection to the calculation thereof within one hundred twenty (120) days after receipt by Owner of the quarterly statement herein provided for. If Owner objects to a particular quarterly statement as herein provided, Owner shall for a period of thirty (30) days after Taurus' receipt of notice of such objection, have the right, upon reasonable notice and at a reasonable time, to have Taurus' accounts and records relating to the calculation of the quarterly statement in question audited by Owner's certified public accountant. If such audit determines that there has been a deficiency or an excess in the payment made to Owner, such deficiency or excess shall be resolved by adjusting the next quarterly Production Royalty payment

due hereunder. Owner shall pay all costs of such audit if no deficiency is determined. Taurus shall pay the costs of such audit if a deficiency in excess of One Thousand Dollars (\$1,000) is determined to exist. If a deficiency exists which is less than One Thousand Dollars (\$1,000), the cost of such audit shall be borne equally by both Owner and Taurus. All books and records used by Taurus to calculate Production Royalties due hereunder shall be kept in accordance with Generally Accepted Accounting Principles. Failure on the part of Owner to make claim on Taurus for adjustment in such period shall establish the correctness and preclude the filing of exceptions thereto or making of claims for adjustment thereon.

M. The Production Royalties provided for herein shall be the total payments due Owner for Products mined and removed from the Claims by Taurus hereunder. In the event that Taurus reprocesses any mill tailings or any residues from the Claims, then the Production Royalty as provided above shall be payable upon any Products recovered.

N. The parties agree that Taurus shall have no obligation to account to Owner and Owner shall have no interest or right of participation in any profits or proceeds or losses of futures contracts, forward sales, hedging or any similar marketing mechanism employed by Taurus with respect to any Products produced from the Claims. Net Smelter Return Royalty shall be based solely on Payments or Deemed Payments received for Products produced from the Claims. Taurus shall have no obligation to fulfill any futures contracts which Owner or any of its affiliates may hold with Product from the Claims.

**IX.  
ASSIGNMENT**

The rights of either party hereunder may be assigned in whole or in part and the right and privilege to do so is hereby granted to and reserved by each party, and all the terms and conditions of this Agreement shall run with the land and inure to the benefit of and be binding upon the parties hereto, their personal representatives, heirs, successors and assigns. An assignment by Taurus of its rights pursuant to this Agreement shall require the prior written consent of Owner, such consent not to be unreasonably withheld, but such assignment will not relieve Taurus of its responsibilities under this agreement. However, no change or division in the ownership of the Claims, however accomplished, shall operate to enlarge the obligations or to diminish the rights of Taurus. No such change in ownership shall be binding upon Taurus until the expiration of sixty (60) days after Taurus shall have received satisfactory written evidence thereof.

**X.  
MEMORANDUM OF AGREEMENT.**

If requested by the other party, each party shall execute and acknowledge a memorandum of agreement for registration purposes which will refer to and incorporate this Agreement therein by reference and state therein generally the description of the Claims, the term, the parties and an address where a copy of this Agreement is available



for inspection. This Agreement shall not be registered. In the event a memorandum of agreement is registered and this Agreement is subsequently terminated pursuant to the terms herein, the parties hereto shall within thirty (30) days after the effective date of termination register such documents and take such actions necessary to remove the memorandum from title, provided if such memorandum is not so removed then Taurus hereby irrevocably appoints Owner its agent to complete the removal of it from title.

**XI.  
NOTICES.**

Any notice required or permitted to be given hereunder shall be in writing and, except as specifically provided herein shall be deemed properly given upon delivering the same personally to the party to be notified, by telex, fax, or upon mailing such notice, by registered or certified mail, return receipt requested, to the party to be notified, at its address hereinafter set forth, or such other address as the party to be notified may have designated prior thereto by written notice to the other.

Owner: Autotrac Limited  
22 Matchedash Street, North  
Orillia, Ontario L3V 4T5  
Fax: (706) 325-4757

Taurus: International Taurus Resources Inc.  
322 Water Street, 2<sup>nd</sup> Floor  
Vancouver, B.C. V6B 1B6  
Fax: (604) 681-0122

**XII.  
FURTHER ASSURANCES.**

Owner and Taurus, at the request of the other, shall execute and deliver any instruments, agreements, documents, permits or applications, or any other papers reasonably required by Taurus, or the Owner, and Owner and Taurus shall do such other acts as may be reasonably requested by the other, at the requesting party's expense, all to effect the purposes of this Agreement.

**XIII.  
CONFIDENTIALITY AND RELEASES.**

During the term hereof the parties to this Agreement agree that any information pertaining to the Claims and this Agreement shall be confidential and shall not be released or communicated to any person, firm or corporation without the prior consent of

the other party (such consent not to be unreasonably withheld) unless such information is required by a lawful authority or other regulatory body having jurisdiction. The party making a disclosure shall first deliver a copy thereof to the other party and allow the other party twenty-four (24) hours to comment on the nature and extent of such disclosure. The party making a release shall deliver to the other copies of any such releases or other public information or documents that mention or relate to the Claims.

**XIV.  
GOVERNING LAW.**

This Agreement shall be construed and enforced in accordance with the laws of the Province of Ontario. The courts of the Province of Ontario will have exclusive jurisdiction with respect to all suits, actions, issues or other matters whatsoever arising out of or affecting this Agreement.

**XV.  
CONSTRUCTION.**

Article and paragraph headings in this Agreement are inserted for convenience only, and shall not be considered a part of this Agreement, or used in its interpretation. Unless otherwise provided, or unless the context shall otherwise require, words importing the singular shall include the plural, words importing the masculine gender shall include the feminine gender, and vice versa. If any provision of this Agreement or any application thereof shall be found to be invalid or unenforceable for any reason, the remainder of this Agreement and any other application of such provision shall not be affected thereby.

**XVI.  
INUREMENT AND BINDING EFFECT.**

This Agreement shall inure to the benefit of and shall be binding upon the respective heirs, executors, legal representatives, administrators, successors in interest and assigns of the parties hereto.

**XVII.  
FUNDS.**

For the purpose of this Agreement, all funds shall be in Canadian dollars. Dollar amounts originally expressed in other currency will be converted to freely tradable Canadian dollars at the average exchange rate quoted by the Bank of Canada for the applicable period. At the written election of the Owner, the Production Royalty payable to the Owner by Taurus shall be made in its equivalent in United States currency.

15 14

**XVII.  
ENTIRE AGREEMENT.**

This writing sets forth the entire agreement and understanding between the parties, there being no oral agreements, promises or representations which are or may be incidental or supplementary to the provisions hereof. No change in, addition to, or waiver of any of the provisions of this Agreement shall be binding upon the parties hereto unless in writing signed by an authorized representative of the party to be bound. No waiver by any party of a breach of any of the provisions of the Agreement shall be construed as a waiver of any subsequent breach, whether of the same or of a different character.

IN WITNESS WHEREOF, the parties have executed the Agreement effective as of the day and year first written above.

The Corporate Seal of  
INTERNATIONAL TAURUS RESOURCES INC.  
hereunto affixed in the  
presence of:

*Robert B. Blaher*  
President



The Corporate Seal of  
AUTOTRAC LIMITED  
hereunto affixed in the  
presence of:

*Joseph W. [illegible]*  
*[illegible]*



16 PB

**SCHEDULE "A"**

Attached to and made part of that certain Exploration License with  
Option to Purchase dated the 15th day of October 1999  
Between Autotrac Limited and International Taurus Resources Inc.

**CLAIM NUMBER**

TB 3719  
BJ 122  
BJ 123  
Loc. No. 1  
Loc. No. 2

17 1/2

**INTERNATIONAL  
TAURUS RESOURCES INC.**

322 Water Street, 2nd Floor  
Vancouver, BC Canada V6B 1B6  
Tel: (604) 681-9558  
Fax: (604) 681-0122  
Toll Free: 1-888-827-6611 (U.S. Canada)



November 17, 1999

Mr. Tom Phelps  
Autotrac Limited  
22 Matchedash Street, North  
Orillia, Ontario L3V 4T5

Dear Mr. Phelps:

Re: Assignment of Partial Interest

As you know, we are working with Roxmark Mines Limited of Toronto to explore and develop properties in southern Ontario that have the potential for near-term production as well as longer term growth. Roxmark contribute small mine operating expertise and their permitted gold milling facility in Beardmore to this effort, which will aid greatly in the evaluation and initial production from projects.

International Taurus wishes to contribute the Autotrac "Northshore" property to this collaborative effort and we wish to assign 50% of our interest in the property to Roxmark. Section IX of our Exploration License with Option to Purchase requires that we receive your approval of this assignment, which we are requesting by this letter.

Please indicate your approval of this transfer of a partial interest in our agreement to Roxmark by signing where indicated below and returning a copy to me at your earliest convenience. This transfer will not affect the other terms of our agreement.

Thank you for your assistance in this matter.

Sincerely,  
International Taurus Resources Inc.

Per: Robert B. Blakestad  
President

Agreed to this date Nov 24, 1999  
Autotrac Limited

By: [Signature]  
Title: VICE-PRESIDENT

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18 AB 187

REGISTRY ACT

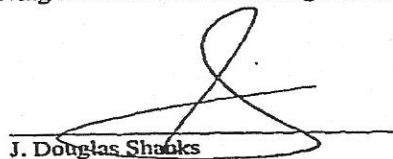
DECLARATION UNDER SECTION 25 OF THE ACT

I, J. DOUGLAS SHANKS, of the City of Thunder Bay, in the District of Thunder Bay, do solemnly declare that I am the solicitor for Autotrac Limited, a party to the annexed Agreement dated the 15<sup>th</sup> day of October, 1999 which affects the following lands:

Patented Lots 1 and 2, on Worthington Bay, according to survey made by one Gardiner, in the year 1872, in the Municipality of Schreiber, District of Thunder Bay.

I make this solemn declaration conscientiously believing it to be true and knowing that it is of the same force and effect as if made under oath.

DECLARED before me at the City )  
of Thunder Bay, in the District of Thunder )  
Bay, this 17<sup>th</sup> day of March, 2002. )

  
J. Douglas Shanks

by its: *Andrea Brnã*  
A Commissioner, etc.

Andrea Brnã Esq., a Commissioner, etc.,  
District of Thunder Bay, for Gerald Johnson  
Shank's Attorney, Solicitor and Solicitor.  
Expires March 2, 2002.

(9) Th  
(10) P  
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by its  
.....  
(11) Addr  
for S  
(12) Party  
Name  
INTERI  
.....  
(13) Address  
for Serv  
(14) Municip  
not assigne

## **APPENDIX II**

**2006 to 2011 Diamond Drilling Data**

Hole No.	UTM East (m)	UTM North (m)	Elevation (m)	Length (m)	Azimuth (deg)	Dip (deg)	Target	Operator
NS-06-01	479868.000	5401314.000	258.000	320.00	15.00	-50.00	Afric Zone	Am. Bonanza
NS-06-02	479871.000	5401311.000	258.000	173.00	17.00	-70.00	Afric Zone	Am. Bonanza
NS-06-03	479907.000	5401596.000	313.000	299.00	12.00	-49.00	Afric Zone	Am. Bonanza
NS-06-04	479919.000	5401275.000	259.000	332.00	19.50	-50.00	Afric Zone	Am. Bonanza
NS-06-05	479799.000	5401270.000	256.000	308.00	19.00	-50.00	Afric Zone	Am. Bonanza
NS-06-06	479837.000	5401221.000	257.000	254.00	16.00	-50.00	Afric Zone	Am. Bonanza
NS-06-07	479984.000	5401210.000	258.000	248.00	333.00	-48.50	Afric Zone	Am. Bonanza
NS-06-08	480884.000	5401227.000	256.000	272.00	333.00	-47.00	Afric Zone	Am. Bonanza
NS-06-09	479807.000	5401450.000	268.000	407.00	150.00	-60.00	Afric Zone	Am. Bonanza
NS-06-10	479915.000	5401598.000	310.000	299.00	332.00	-48.00	Afric Zone	Am. Bonanza
NS-06-11	480256.000	5401251.000	256.000	251.00	320.00	-50.00	Afric Zone	Am. Bonanza
NS-07-01	479989.000	5401220.000	260.000	164.00	180.00	-45.00	No. 3 Zone	Am. Bonanza
NS-07-02	479989.000	5401220.000	260.000	209.00	180.00	-60.00	No. 3 Zone	Am. Bonanza
NS-07-03	480084.000	5401227.000	255.000	155.00	180.00	-45.00	No. 3 Zone	Am. Bonanza
NS-07-04	480084.000	5401227.000	255.000	140.00	180.00	-60.00	No. 3 Zone	Am. Bonanza
NS-07-05	480255.000	5401260.000	275.000	152.00	180.00	-45.00	No. 3 Zone	Am. Bonanza
NS-07-06	480255.000	5401260.000	275.000	130.00	180.00	-60.00	No. 3 Zone	Am. Bonanza
NS-07-07	480414.000	5401224.000	250.000	98.00	190.00	-45.00	No. 3 Zone	Am. Bonanza
NS-07-08	480414.000	5401224.000	250.000	95.00	10.00	-45.00	No. 3 Zone	Am. Bonanza
NS-07-09	480209.000	5401480.000	310.000	224.00	180.00	-45.00	No. 2 Zone	Am. Bonanza
WB-11-01	479821.040	5401351.192	259.218	62.00	310.00	-60.00	Audney	GTA
WB-11-02	479821.310	5401350.940	259.101	101.00	306.00	-75.00	Audney	GTA
WB-11-03	479817.390	5401337.667	258.207	62.00	310.00	-51.00	Audney	GTA
WB-11-04	479817.860	5401337.269	258.139	92.00	310.00	-70.00	Audney	GTA
WB-11-05	479831.570	5401358.263	260.295	62.00	310.00	-50.00	Audney	GTA
WB-11-06	479832.140	5401357.814	260.380	92.00	310.00	-70.00	Audney	GTA
WB-11-07	479872.150	5401309.325	259.021	152.00	310.00	-50.00	Caly	GTA
WB-11-08	479872.900	5401308.782	259.102	32.00	310.00	-70.00	Caly	GTA
WB-11-09	479877.560	5401320.556	260.115	161.00	310.00	-50.00	Caly	GTA
WB-11-10	479877.560	5401320.556	260.115	35.00	310.00	-70.00	Caly	GTA
WB-11-11	479884.400	5401331.497	260.362	152.00	315.00	-50.00	Caly	GTA
WB-11-12	479884.400	5401331.497	260.362	35.00	315.00	-70.00	Caly	GTA



## **APPENDIX III**

**Analytical and Assay Procedures  
Accurassay Laboratories**

## **ANALYTICAL PROCEDURES**

### **Sample Preparation**

The rock samples are first entered into Accurassay Laboratories' Local Information Management System (LIMS). The samples are dried, if necessary, and then jaw crushed to 70% <8 mesh and a 250 to 500 gram sub-sample is normally taken for analysis. For pulp metallic analysis, a 1000 gram sub-sample, or the entire sample in cases where less than 1000 grams is available, is taken. The sub-sample is pulverized to 85% <200 mesh and then matted to ensure homogeneity. The homogeneous sample is then sent to the fire assay laboratory or the wet chemistry laboratory depending on the analysis required. For pulp metallic analysis, the sample is pulverized and screened with the >200 mesh material being re-pulverized and re-screened until approximately 50 grams remains. Samples of the <200 mesh pulp and all of the >200 mesh metallics portion are sent for fire assay. Non-silica based sand is used to clean out the pulverizing dishes between each sample to prevent cross contamination.

### **Precious Metal Analysis**

For the analysis of precious metals (gold, platinum, palladium and/or rhodium), each sample is mixed with a lead based flux and fused for one hour and fifteen minutes. Each sample has a silver solution added to it prior to fusion which allows each sample to produce a precious metal bead after cupellation. The fusing process results in lead buttons that contains all of the precious metals from the samples as well as the silver that is added. The buttons are then placed in a cupelling furnace where all of the lead is absorbed by the cupels and a silver bead, which contains any gold, platinum and palladium, is left in each cupel. The cupels are removed from the furnace and allowed to cool. Once the cupels have cooled sufficiently, the silver bead from each is placed in an appropriately labeled test tube and digested using aqua regia. The samples are bulked up to 5 ml with a combination of distilled de-ionized water and a 1% digested lanthanum solution. The samples are allowed to cool and are mixed to ensure proper homogeneity of the solutions. Once the samples have settled, they are analyzed for gold, platinum and palladium using atomic absorption (air-acetylene flame) or ICP spectroscopy. The atomic absorption or ICP instrument is calibrated for each element using the appropriate ISO 9002 certified standards. The results for the instrumental analysis 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 the certificates and issues the results in the client requested format.

### **Base Metal Analysis**

Samples analyzed for base metals (copper, nickel, cobalt, lead, zinc and silver) are weighed for either a geochemical or an ore grade analysis and digested using an aqua regia or a multi-acid digestion. The samples are bulked to a final volume and mixed. Once the samples have settled they are analyzed for copper, nickel, cobalt, etc. using atomic absorption or ICP spectroscopy. The atomic absorption (air-acetylene flame) or ICP instrument is calibrated for each element using the appropriate ISO 9002 certified standards. The results for the instrumental analysis 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 the certificates and issues the results in the client requested format.

**NOTE:** Any geochemical sample that contains a concentration of greater than 10,000 ppm of any element is sent back for an ore grade assay for that element. This assay is similar to the geochemical assay but requires a greater sample mass and final volume.

### **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 Accurassay Laboratories and tested by round robin with laboratories across Canada, and ISO certified calibration standards purchased from suppliers. Should any of the standards fall outside the warning limits ( $\pm 2SD$ ); reassays will be performed on 10% of the samples analyzed in the same batch and the reassay values are compared with the original values. If the values from the reassays match original assays the data is certified, if they do not match the entire batch is reassayed. Should any of the standards fall outside the control limit ( $\pm 3SD$ ) all assay values are rejected and all of the samples in that batch will be reassayed.

## ASSAY PROCEDURES – GRAVIMETRIC GOLD

### Sample Preparation

The rock samples are first entered into Accurassay Laboratories' Local Information Management System (LIMS). The samples are dried, if necessary, and then jaw crushed to 70% <8 mesh and a 250 to 500 gram sub-sample is normally taken for analysis. The sub-sample is pulverized to 85% <200 mesh and then matted to ensure homogeneity. The homogeneous sample is then sent to the fire assay laboratory. Non-silica based sand is used to clean out the pulverizing dishes between each sample to prevent cross contamination.

### Gravimetric Au Analysis

For the analysis of higher grade gold samples (having approximately 3 g/t or higher of gold), each sample is mixed with a lead based flux and fused for one hour and fifteen minutes. Each sample has a silver solution added to it prior to fusion which allows each sample to produce a precious metal bead after cupellation. The fusing process results in lead buttons that contains all of the gold from the samples as well as the silver that is added. The buttons are then placed in a cupelling furnace where all of the lead is absorbed by the bone cupels and a silver bead, which contains any gold is left in each cupel. The cupels are removed from the furnace and allowed to cool. Once the cupels have cooled sufficiently, the silver bead from each is placed in an appropriately labeled porcelain cupel and digested using dilute nitric acid to remove the silver. The remaining sponge is rinsed with water and annealed using a torch to produce a gold bead. The gold bead is weighed on a microbalance. The results are checked by the technician and then forwarded to data entry. The Laboratory Manager checks the data, validates it if it is error free and a certificate is produced. The results are then forwarded to the client by E-mail, hardcopy or whatever other methods have been agreed upon.

### Calculations

Results for gravimetric analysis are available in grams-per-tonne (g/t) and ounces-per-tonne (oz/t).

$$\text{Grams-per-tonne (g/t)} = ((R/1000)/w) * 1000000$$

where R = reading from microbalance (mg)  
w = weight of assay (g)

$$\text{Ounces-per-tonne (oz/t)} = \text{g/t value} \times 0.029167$$

## **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 Accurassay Laboratories and tested by round robin with laboratories across Canada, and ISO certified calibration standards purchased from suppliers. Should any of the standards fall outside the warning limits ( $\pm 2SD$ ); reassays will be performed on 10% of the samples analyzed in the same batch and the reassay values are compared with the original values. If the values from the reassays match original assays the data is certified, if they do not match the entire batch is reassayed. Should any of the standards fall outside the control limit ( $\pm 3SD$ ) all assay values are rejected and all of the samples in that batch will be reassayed.

## **APPENDIX IV**

**Quality Assurance – Quality Control Report on the 2011 Drilling Program  
Northshore Property, Thunder Bay M. D., Priske Township, Ontario  
By Caroline Vallat, P. Geo. of GeoSpark Consulting Inc.**



# 2012 Northshore Project Analytical Result QAQC

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*Written By: Caroline Vallat, P.Geo., GeoSpark Consulting Inc.*

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## Introduction

The 2012 Northshore project analytical results were reported by Accurassay Laboratories (Accurassay) of Ontario, Canada. The assays were performed using fire assay with an atomic absorption finish. Analytical certificates were reported including internal lab duplicates and repeats showing that the lab was performing internal quality assurance and quality control (QAQC) during the analysis of the sample batches.

The QAQC procedures for GTA Resources and Mining Inc.'s (GTA) exploration programs on the Northshore Project were under the supervision of Robert (Bob) Duess, P. Geo. (Ontario), VP Exploration of GTA.

QAQC protocols included the insertion of certified standard reference and blank materials into each sample batch. Standards and blanks infer the accuracy within the primary sample results. Blanks also serve to clean the analytical instruments and to monitor for suspected sample contamination or instrumentation calibration issues.

Additionally, field duplicate samples were inserted into the sample batches. The field duplicate sample pairs will be reviewed here in order to represent the precision of primary sample results.

Repeat analyses were also reviewed in order to further review the precision inferred for the primary samples.

Check samples were submitted to a secondary lab, SGS Canada in Vancouver (SGS), in order to review the primary sample results for bias.

## 1. Standards and Blanks

Standards have a known expected value and a known standard deviation. In order to define where contamination or poor accuracy is apparent within reported results, the standard results are charted within control charts with defined limits. For the Northshore project results limits of plus and minus three standard deviations from the mean expected result were used.

Blanks are expected to return results at or near the lower detection limit for the results being reviewed. Blanks are also plotted within control charts to review the results for potential contamination or instrument calibration issues. Blanks represent the accuracy of the samples in a similar fashion to standards.

The standards inserted into analytical batches included thirteen different standard materials and one blank, with expected gold results shown in Table 1.

**Table 1 - Expected Gold Values for Standard Materials.**

<b>Standard ID</b>	<b>Mean Expected Au ppm</b>	<b>Std Dev Au ppm</b>
10 Pb	7.26	0.15
15 Pa	1.03	0.02
15 Pc	1.63	0.04
17 Pb	2.62	0.802
18 Pb	3.66	0.06
18 Pa	3.41	0.09
18 Pb	3.66	0.06
4 Pb	0.49	0.0033
61 Pa	4.54	2.006
61 Pb	4.8	1.228
62 Pa	9.78	2.669
62 Pb	11.5	1.173
7 Pb	2.79	0.245
Blank	0.037	0.173

Ideally, fewer standard materials will be used in future. Three standards each representing different grade levels will be sufficient for future QAQC purposes. Fewer standards also make the overview of results more straightforward.

For the 2012 sample batches submitted to Accurassay, there were 60 standards and 69 blanks submitted with the 922 primary samples. This amounts to 6.5 percent standards and 7.5 percent blanks relative to the quantity of primary samples. This amount of standards and blanks is sufficient to represent the inferred accuracy of the reported results.

Upon completion of the analyses, standard results were reviewed to define where there were any cases of suspected issues with accuracy or contamination. The review revealed that for the 60 standards and 69 blanks, there were a total of six failed blank instances and ten failed standard instances. This amounts to 8.69 percent of the blank instances and 16.7 percent of the standard instances having failed the initial QAQC review. Wherever, a standard or blank instance failure occurred within a certificate, re-runs were performed on the failed instance as well as on the samples within the vicinity (half way to the next non failing standard or blank instance) of the failed instance. There were 180 samples re-run, and further review of the reported re-run results took place in order to eliminate concern of local issues with accuracy, sample contamination, or instrumentation problems.

Upon review of the re-run results it was determined that all re-run results would take precedence over the original results reported.

With the re-run results assigned precedence, it can be inferred that the sample results have been remedied with respect to local assay accuracy, sample contamination, or instrumentation problems.

Figures 1 to 13 are control charts on the standards and blanks, following the assignment of precedence to re-run results.

## 1.1 Standards

Figure 1 - 10 Pb

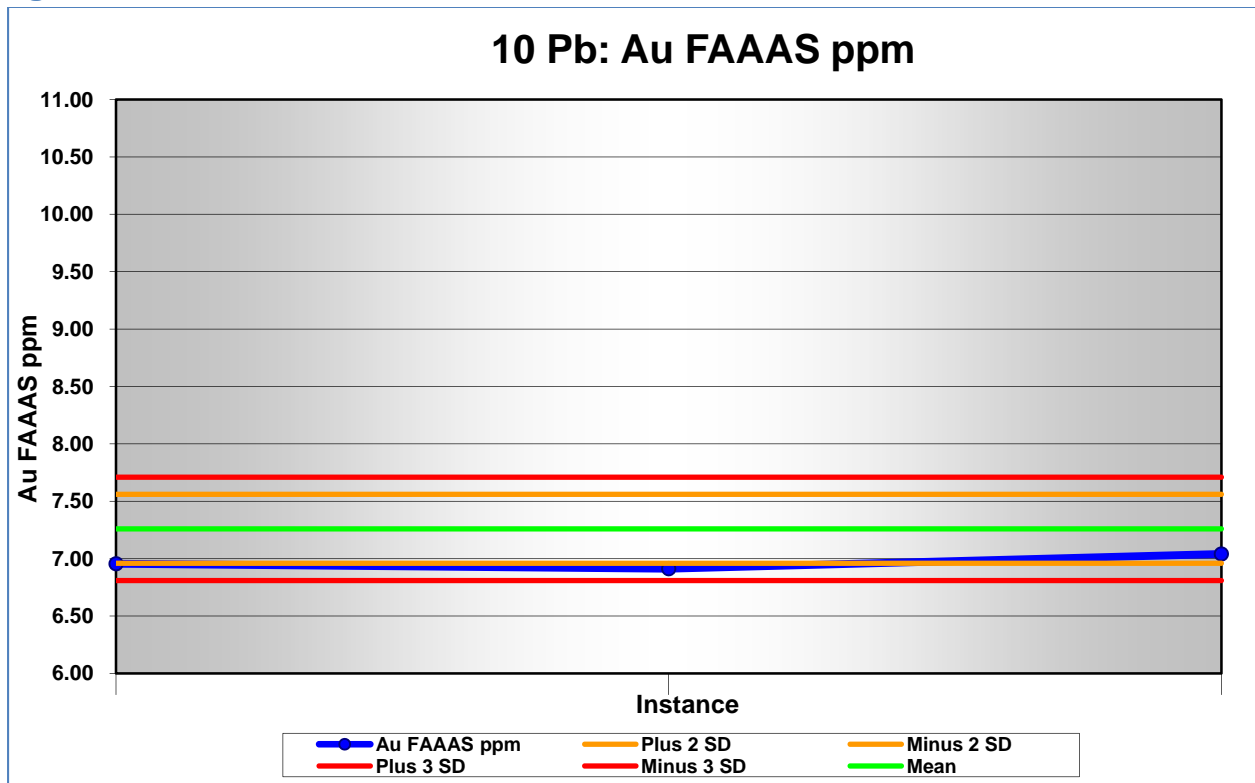
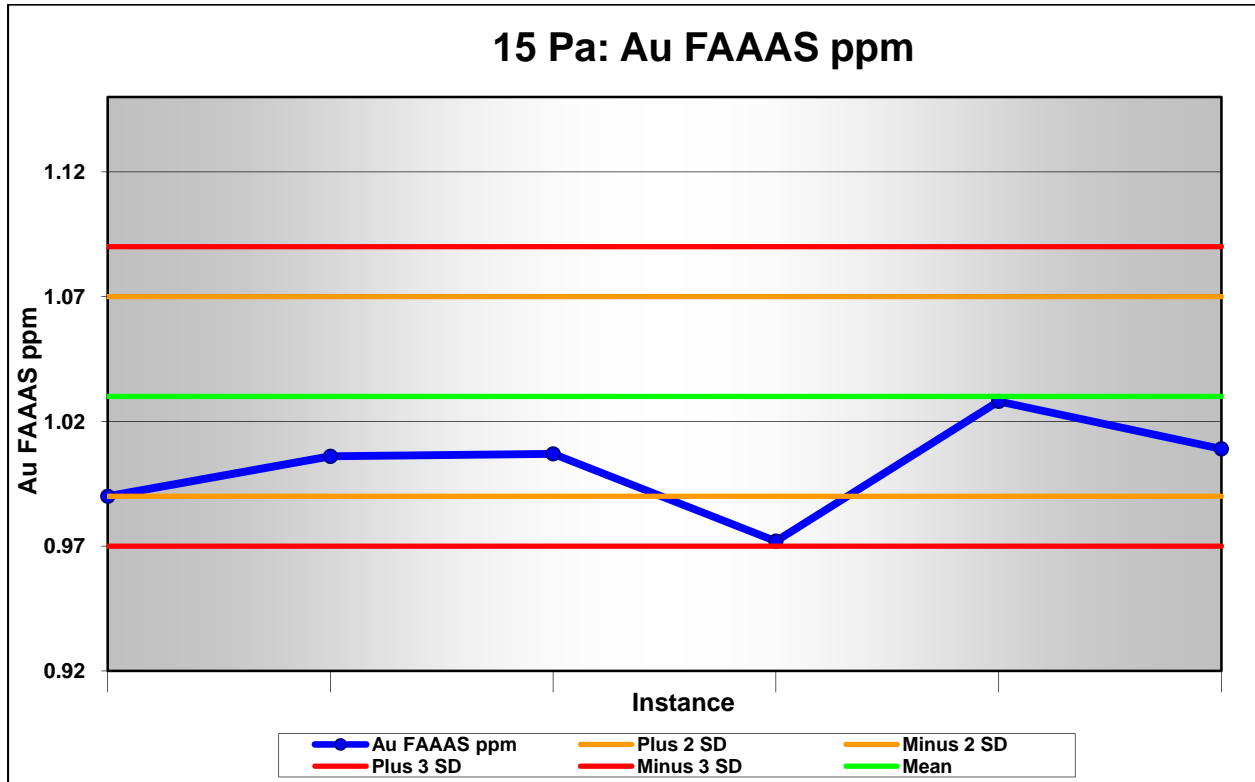


Figure 2 - 15 Pa



Initially, standard 15 Pa had two failed instances of analysis reported upon it. The failed instances (1233324 and 1203525) were re-run along with the samples in the vicinity of the failures. The returned re-run results were returned within the acceptable limits and are depicted in the above control chart to represent the data in its current state, as the re-run results have been assigned precedence within the sample results.

Figure 3 - 15 Pc

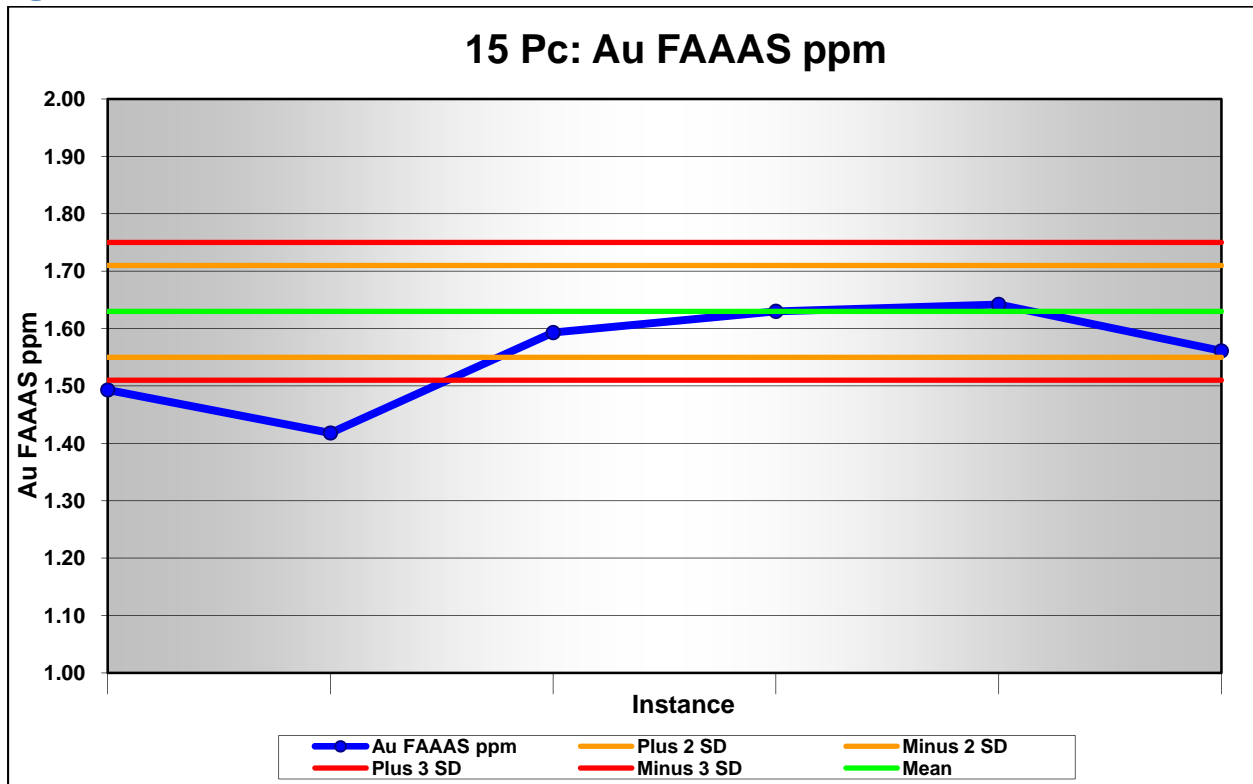


Table 2 - 15 Pc Instances of Analysis

Sample	Standard ID	Au FAAAS ppm
1233885	15 Pc	1.927
1233372	15 Pc	1.493
1203665	15 Pc	1.337
R1203665	15 Pc	1.418
R1233885	15 Pc	1.593
1233523	15 Pc	1.63
1233273	15 Pc	1.642
1233394	15 Pc	1.561
R1233372	15 Pc	999

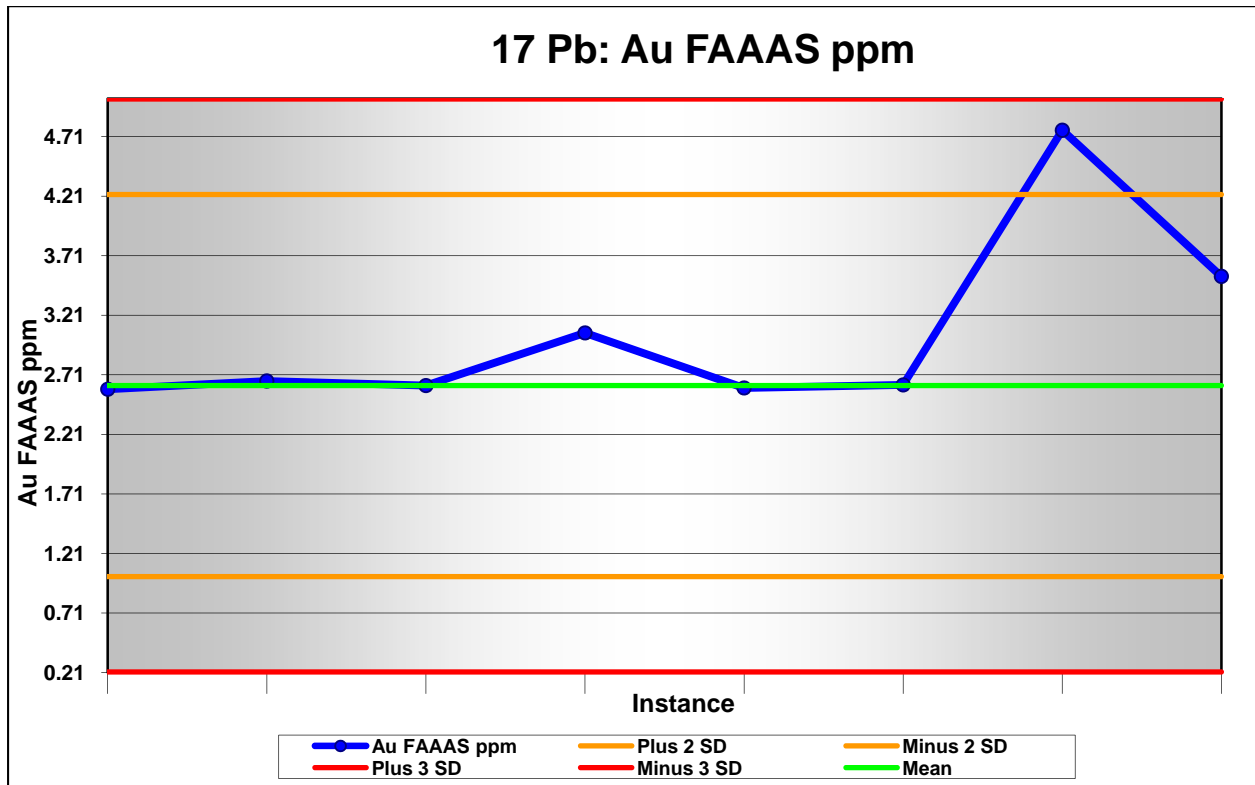
Figure 3 shows the instances of analysis on standard 15 Pc in the best state obtained. The initial review of the standard materials revealed three failing instances (1233885, 1233372, and 1203665). Each of these failed instances was submitted for re-analysis, as were the samples in the vicinity of the instances.

Unfortunately, the re-run of instance 1233372 was returned as insufficient sample (999 as shown in Table 2 is the flag for this within the QAQC database). The samples in the vicinity of this instance were re-run and the results were given precedence over the original primary sample results.

The re-run of standard instance 1233885 returned results within the acceptable limits and the re-run results were assigned precedence.

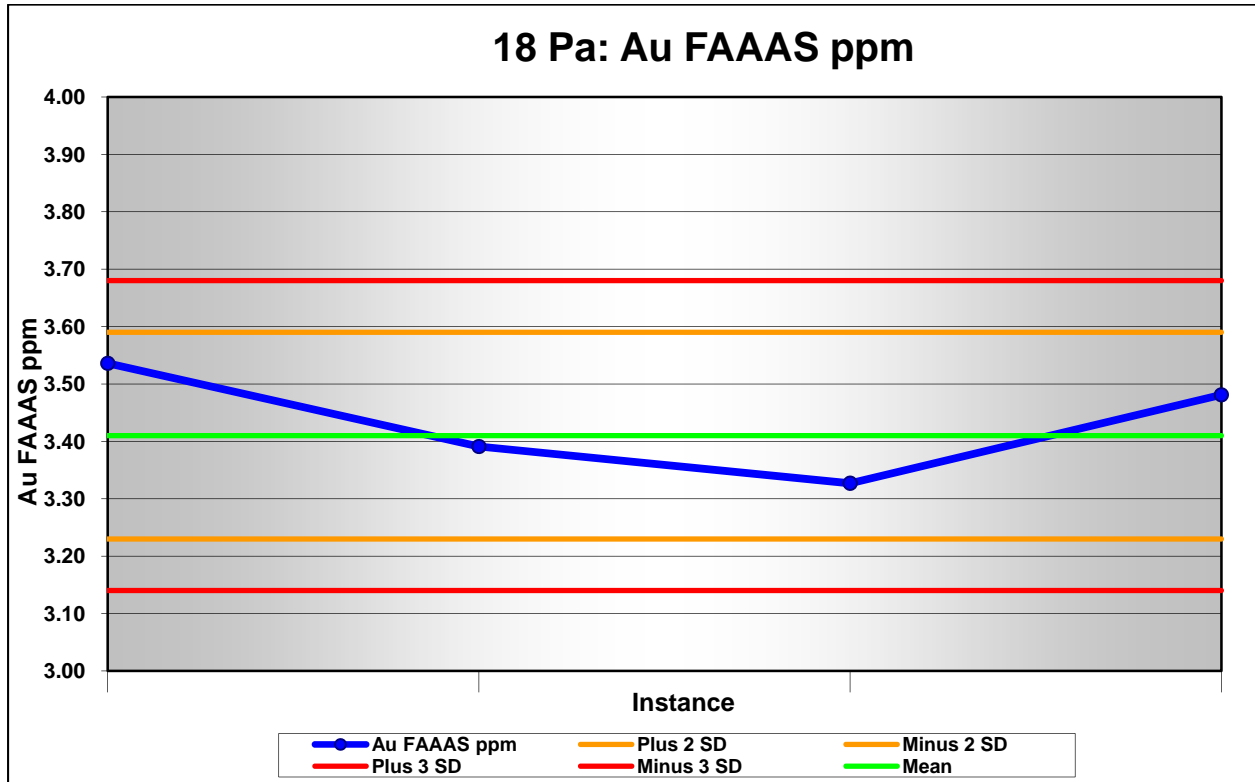
Standard instance 1203665 was also re-run along with primary samples in its vicinity. The standard instance was returned at closer to the expected result, but was still in excess of the minimum limit for the material. The decision was made to assign precedence to the re-run results due to this improvement. It is suspected that this standard may not be as reliable as reported using the fire assay with atomic absorption at Accurassay.

Figure 4 - 17 Pb



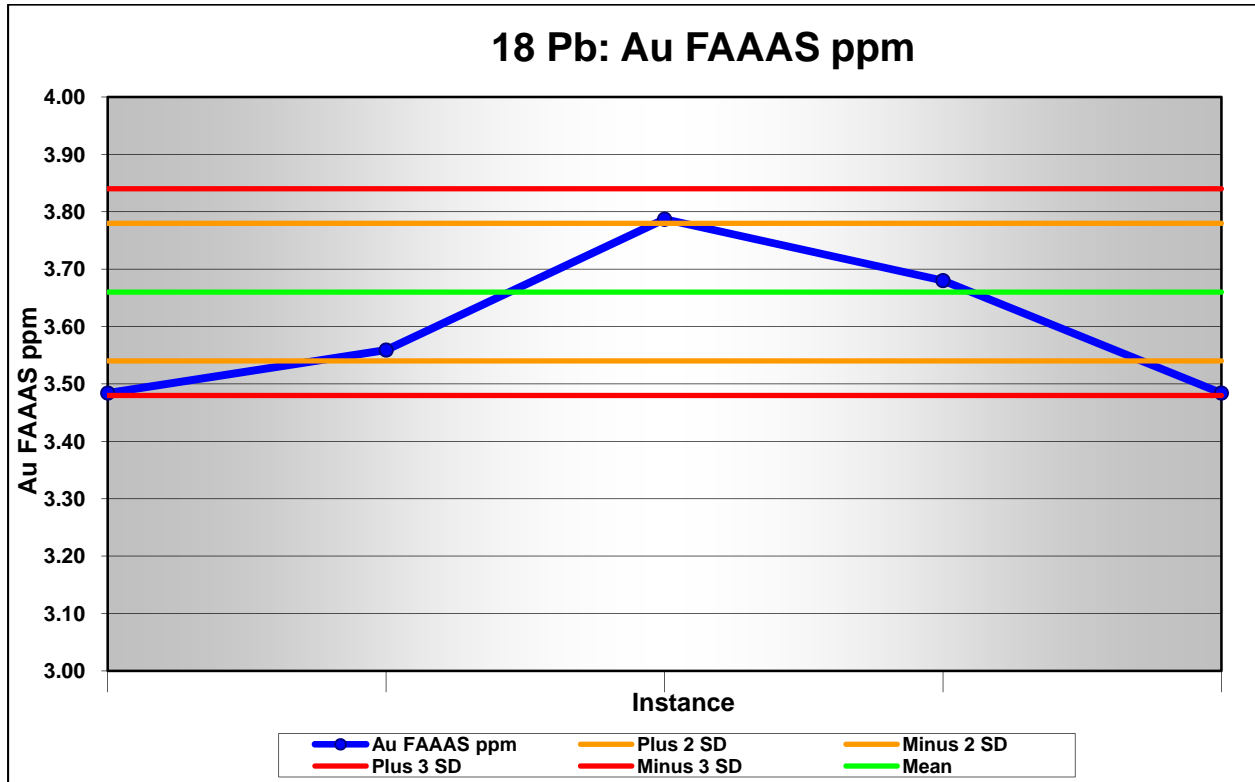
Each of the eight instances of analysis on standard 17 Pb had results returned within the acceptable limits defined for the standard material.

Figure 5 - 18 Pa



Initially two of the four instances of analysis on standard 18 Pa were returned less than the defined minimum for the standard material. Re-runs were analyzed for these standards and the samples within the vicinity of the failed instances. The re-run results had were within the defined limits for the standard, and were given precedence over the original results.

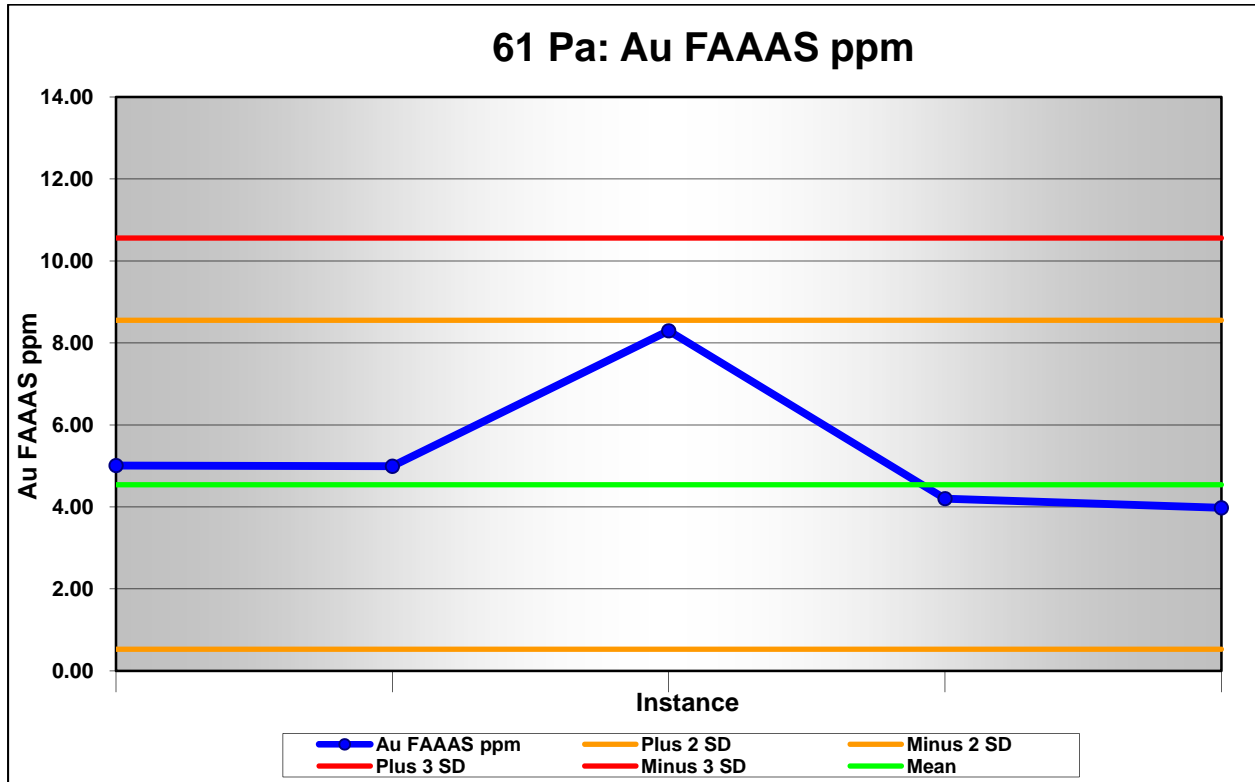
Figure 6 - 18 Pb



Initially three of the five instances of analysis on standard 18 Pb were returned outside the defined limits for the standard material. Re-runs were analyzed for the failed instances and the samples in their vicinity. The re-run results returned standard results within the defined limits for the standard, and were given precedence over the original results.

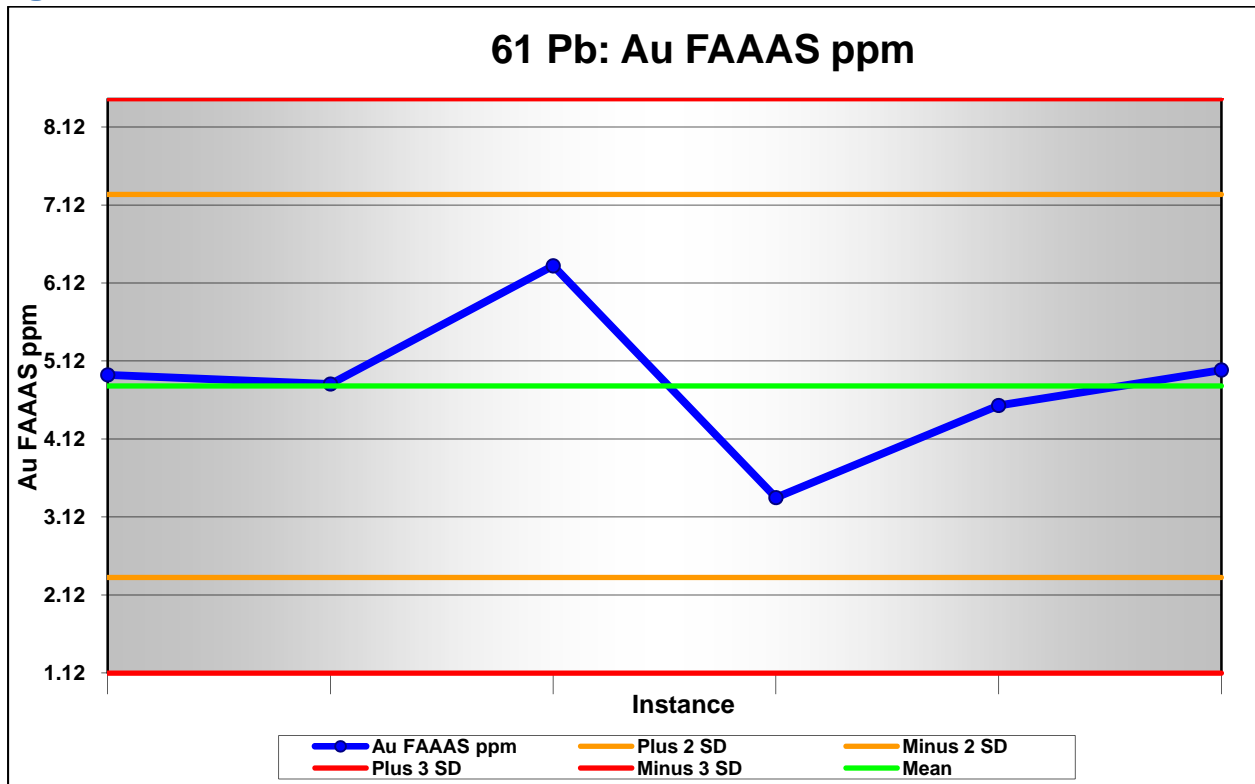


Figure 7 - 61 Pa



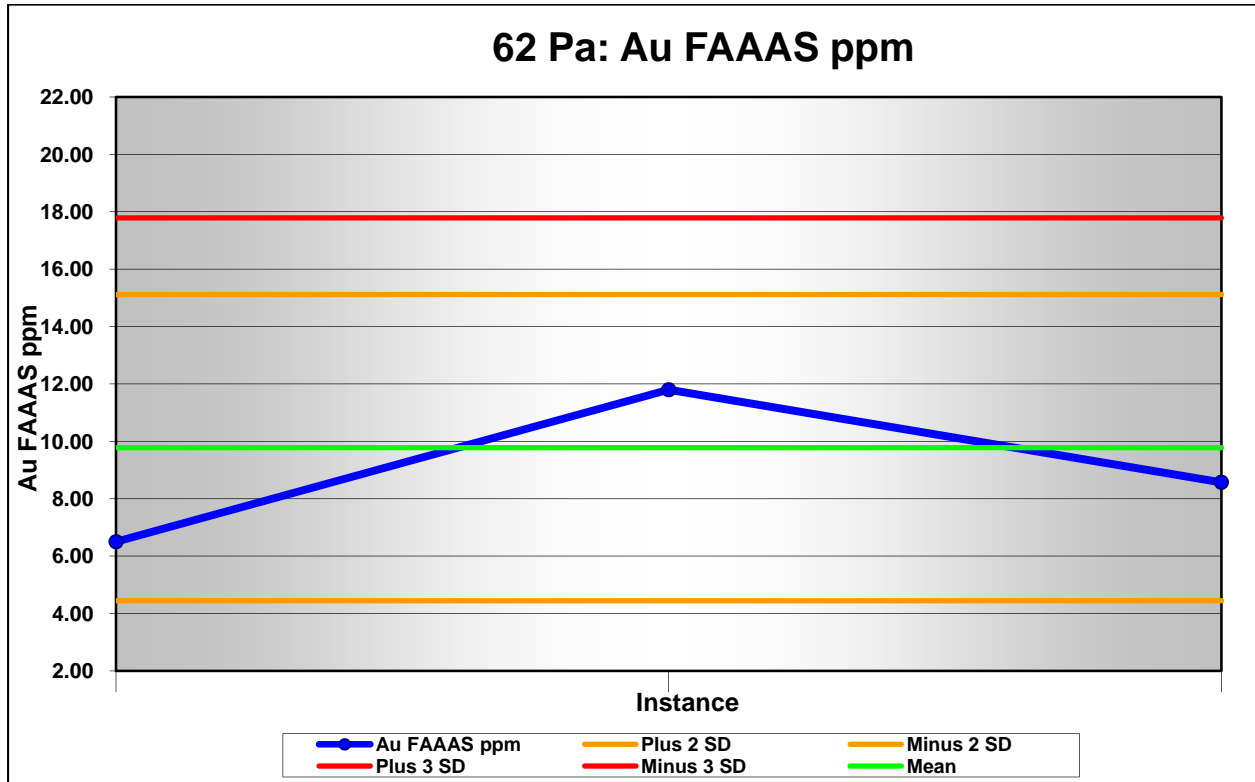
All instances of analysis on standard 61 Pa were returned within the defined limits for the standard material.

Figure 8 - 61 Pb



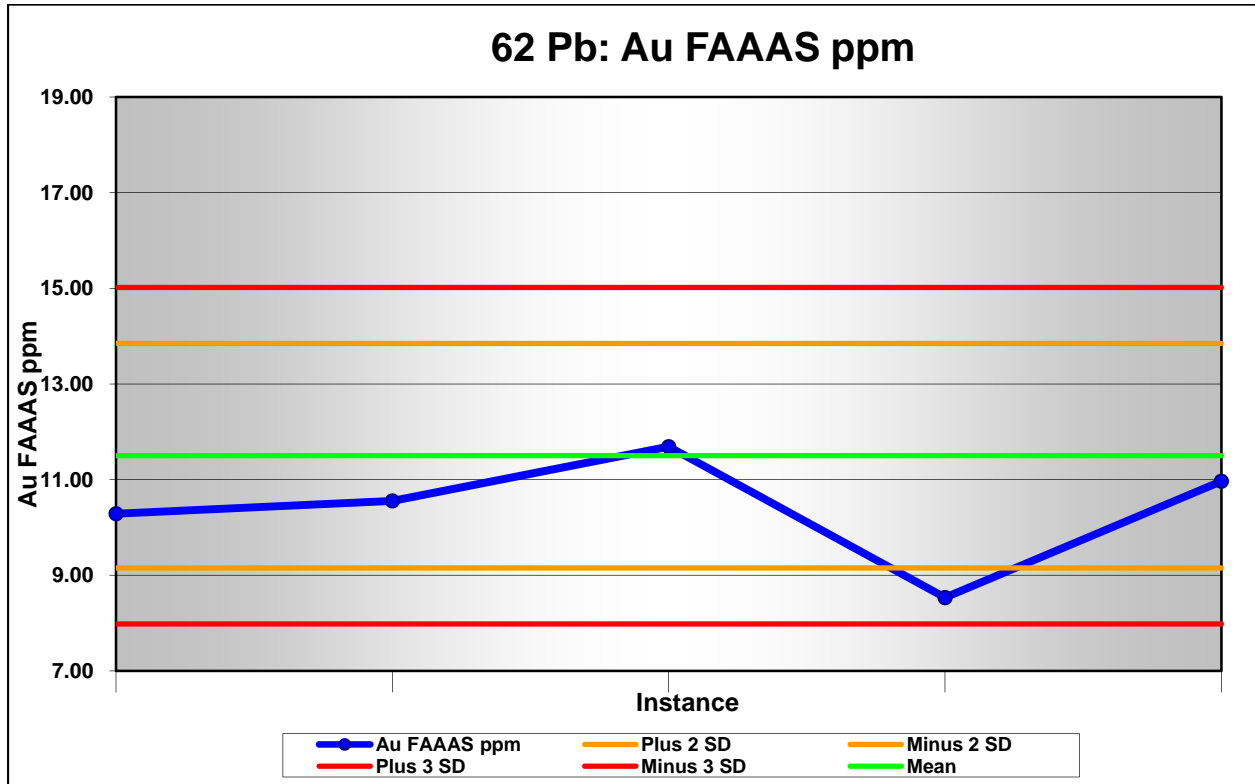
All instances of analysis on standard 61 Pb were returned within the defined limits for the standard material.

Figure 9 - 62 Pa



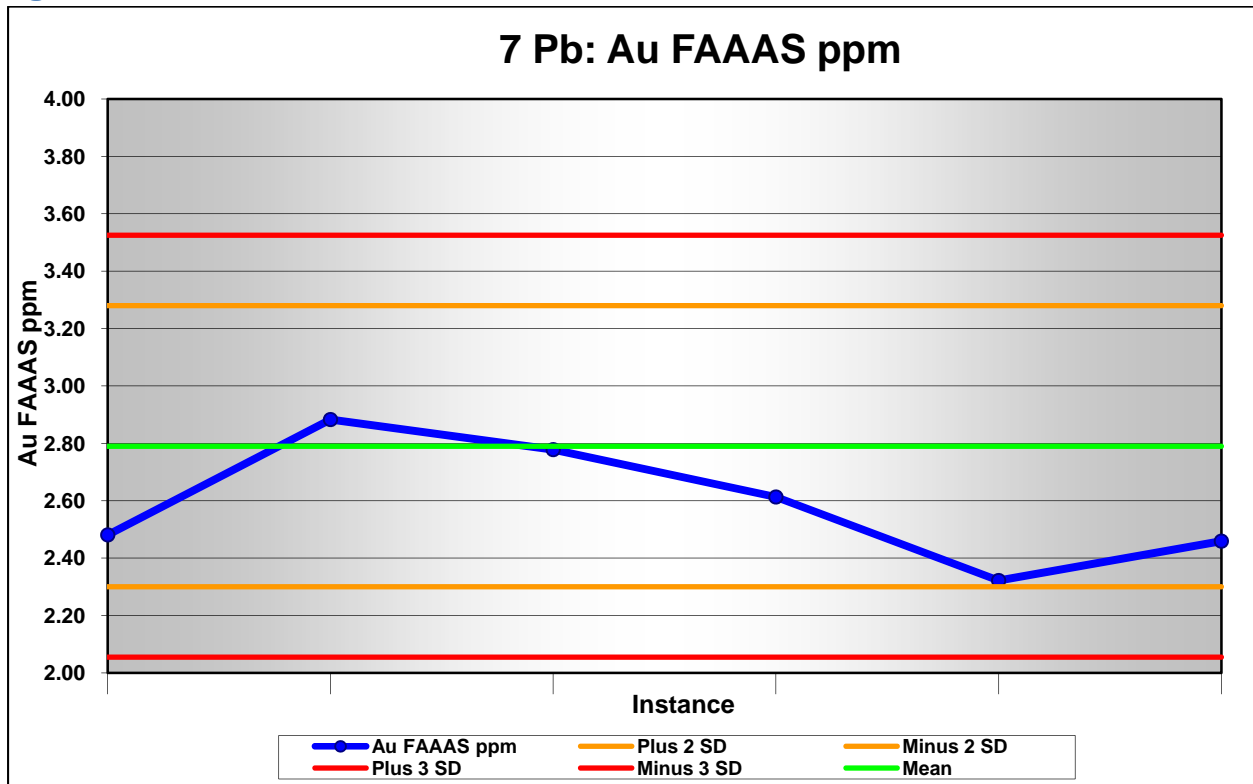
All instances of analysis on standard 62 Pa were returned within the defined limits for the standard material.

Figure 10 - 62 Pb



All instances of analysis on standard 62 Pb were returned within the defined limits for the standard material.

Figure 11 - 7 Pb



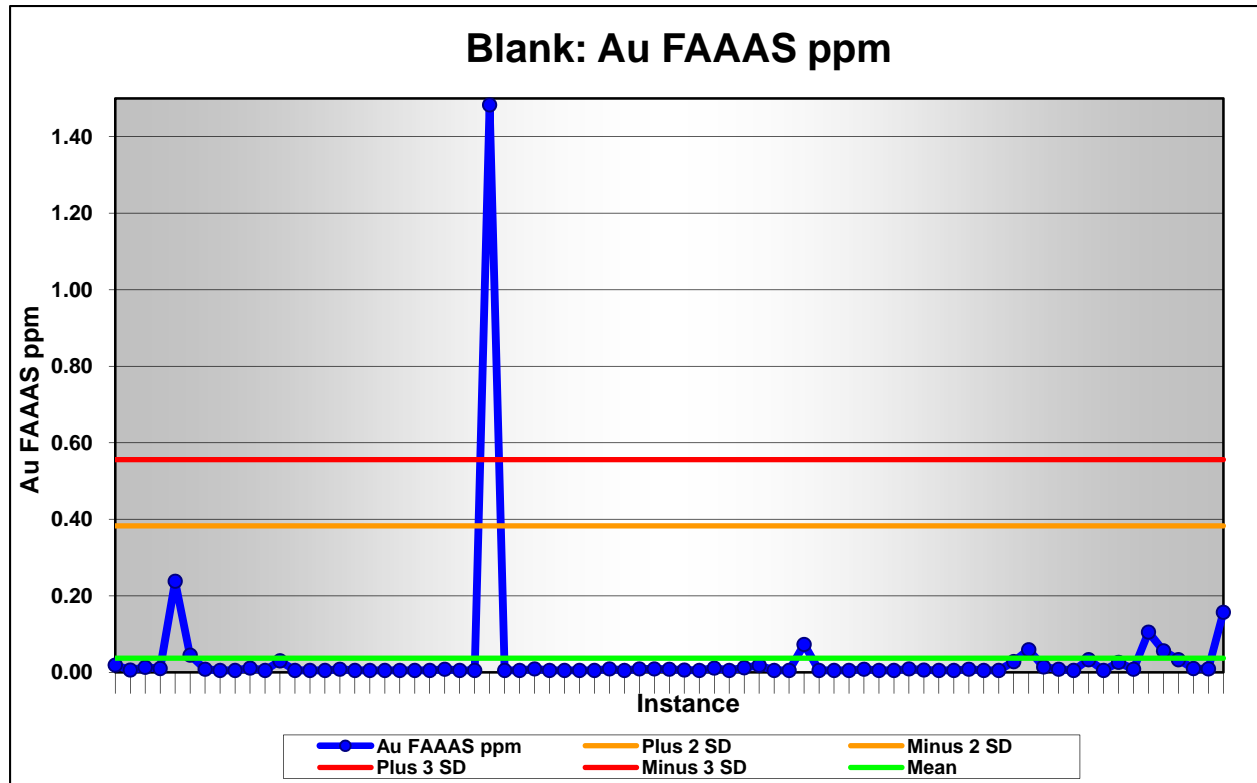
All instances of analysis on standard 7 Pb were returned within the defined limits for the standard material.

The standard results have been reviewed in detail, and upon the re-run of results in the vicinity of failed standard instances and the assignment of these results as superseding originals, it can be inferred that there is a reasonable level of accuracy within the primary sample results reported by Accurassay.

I recommend that future exploration at the Northshore project includes a similar quantity of standard instances but for fewer different standard materials. From this review, the apparent reliability of the standard materials is also inferred. It is my recommendation that standard materials with few failures at low, mid, and high gold concentrations be used in following exploration programs. Specifically, I recommend the use of the standards 17 Pb, 61 Pb and 62 Pb.

## 1.2 Blanks

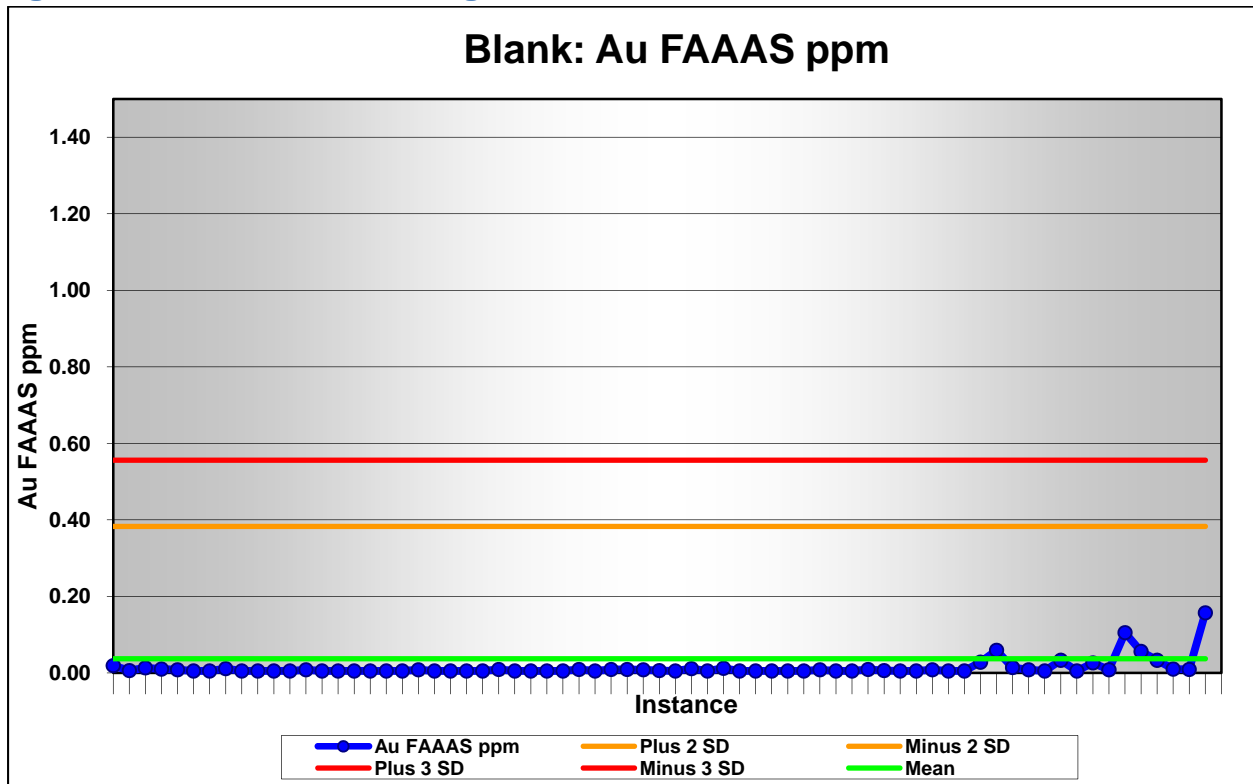
Figure 12 - Blank Results



The anomalous blank result shown here is that of sample instance 1233197. The gold result was returned at 1.483. I suspect that this was caused by human error, where either the wrong material was inserted into the batch or the wrong identity was applied to the standard instance. The samples in the vicinity of this failed blank instance were re-run along with a new instance of the blank material. The results were determined to pass the QAQC review and the re-run results were assigned precedence over the original sample results. There were also five more instances that failed the initial QAQC review. Due to potential local contamination or instrumentation issues during the primary sample analysis, these instances and the samples within the vicinity of the failed blank instances were re-run. All re-run results related to the blank material were assigned precedence over the original results.

Figure 13 shows the blank results, after the re-run results were assigned precedence.

Figure 13 - Blank Results Following Re-run Precedence



The blank results of analysis related to the primary sample results in use for the Northshore project are all within the defined limits for the standard material and are at or near the lower detection (0.005 ppm) for the analysis for gold by fire assay with atomic absorption at Accurassay.

It is inferred that the procedures applied have rid the assay results of local contamination and instrumentation problems.

## 2. Duplicates and Repeats

### 2.1 Field Duplicates

Field duplicate sampling involves the splitting of sample material into a primary and secondary (or duplicate) sample. The splits are submitted to the lab separately with unique sample identification codes. This results in a representation of reproducibility or inferred precision that is blind to the sample preparation lab.

Duplicate sampling is a measure of all levels of error pertaining to the sampling and analysis of geological data. Relevant error includes sample splitting error, sample size reduction at the preparation laboratory, analytical error, and possible sample over-selection. Duplicate samples are compared directly to the primary sample using analytical tests as well as scatter charts. Duplicate samples are also plotted on Thompson-Howarth charts showing a statistical representation of the precision level of the data set.

There were a total of 49 field duplicates inserted within the primary sample batches. This amounts to 5.3 percent relative to the total number of primary samples (922) analyzed at Accurassay. The correlation of the results is shown in Figures 14 and 15.

**Figure 14 - Scatter Plot of Field Duplicate Pair Results**

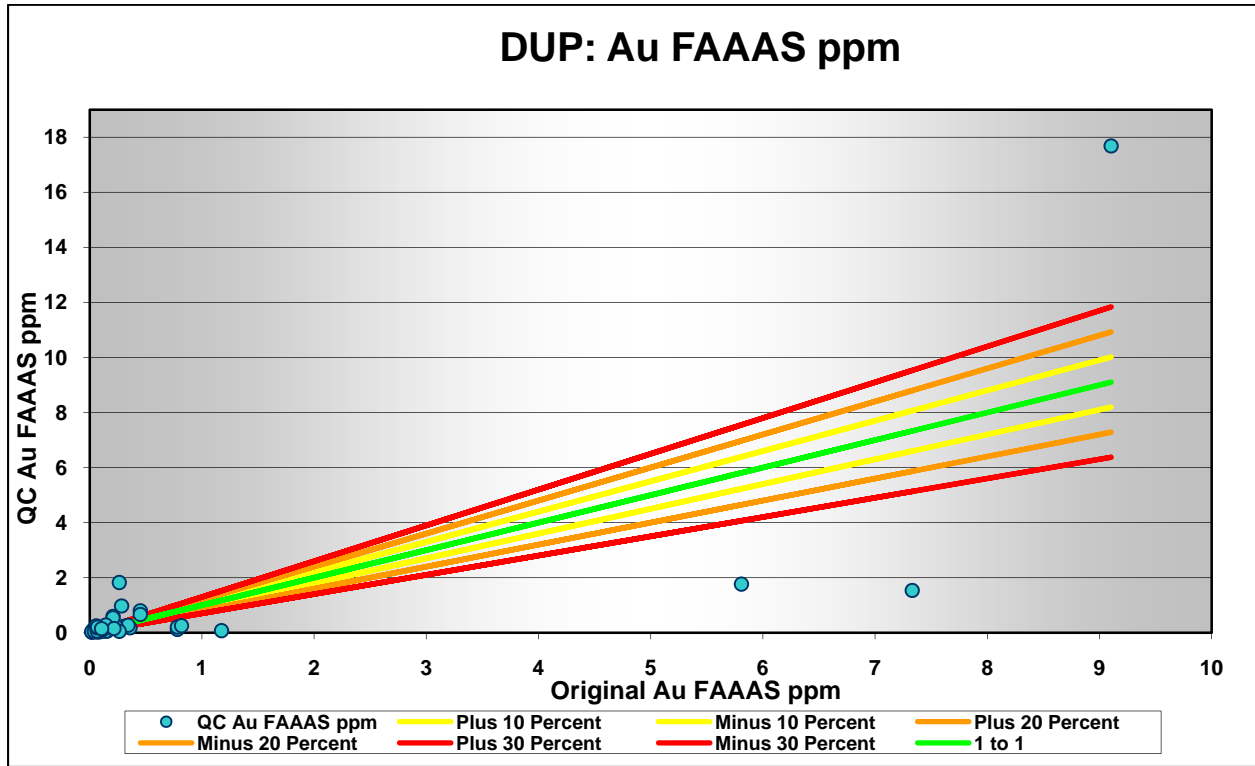
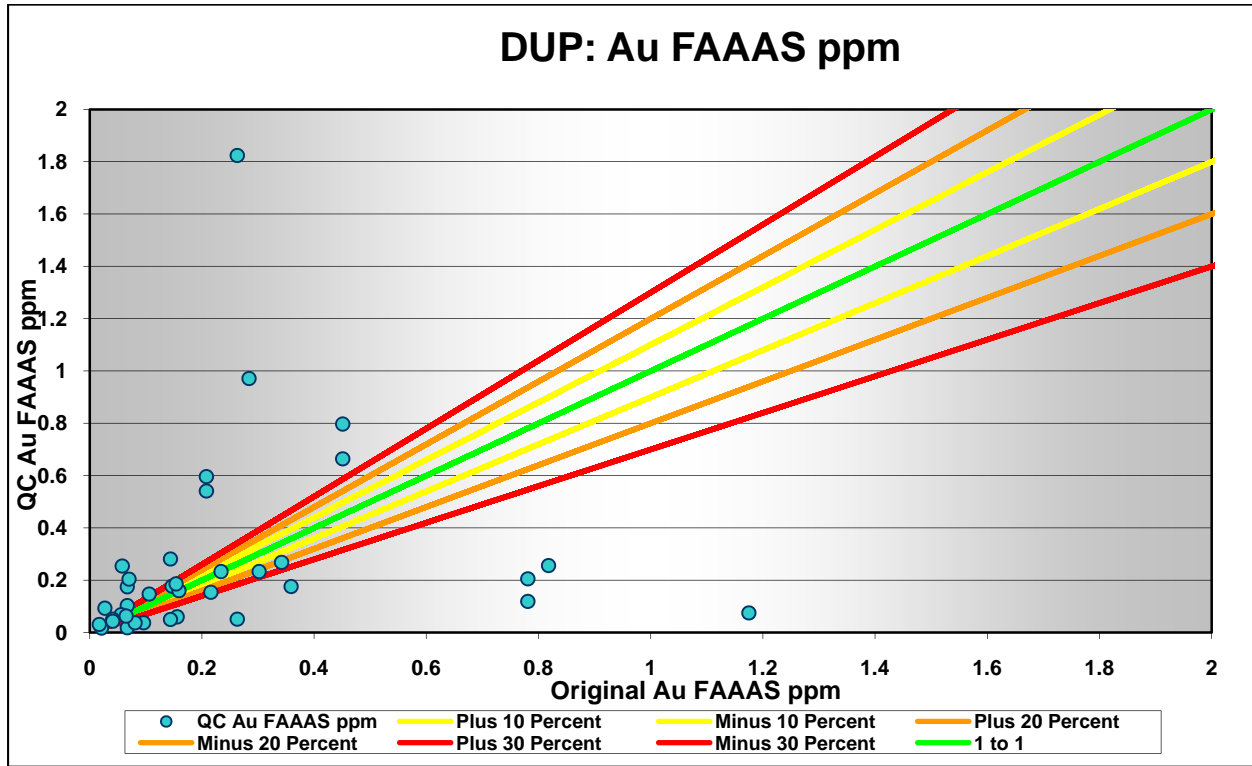




Figure 15 - Scatter Plot of Field Duplicate Pair Results (<2 ppm Au)



The field duplicate pairs have been found to show a lack of repeatability. The scatter plots shows that there is no particular bias towards one or the other sample type being of higher or lower concentration. However, the precision is poor.

Table 3 shows the duplicate sample pairs and their results as well as the average relative difference (ARD) for each pair. Pairs with ARD greater than 0.30, which corresponds to results outside 30 percent difference (red lines in scatter plots), are highlighted red. Ten of the 40 sample pairs have ARD greater than 1; these are highlighted yellow.

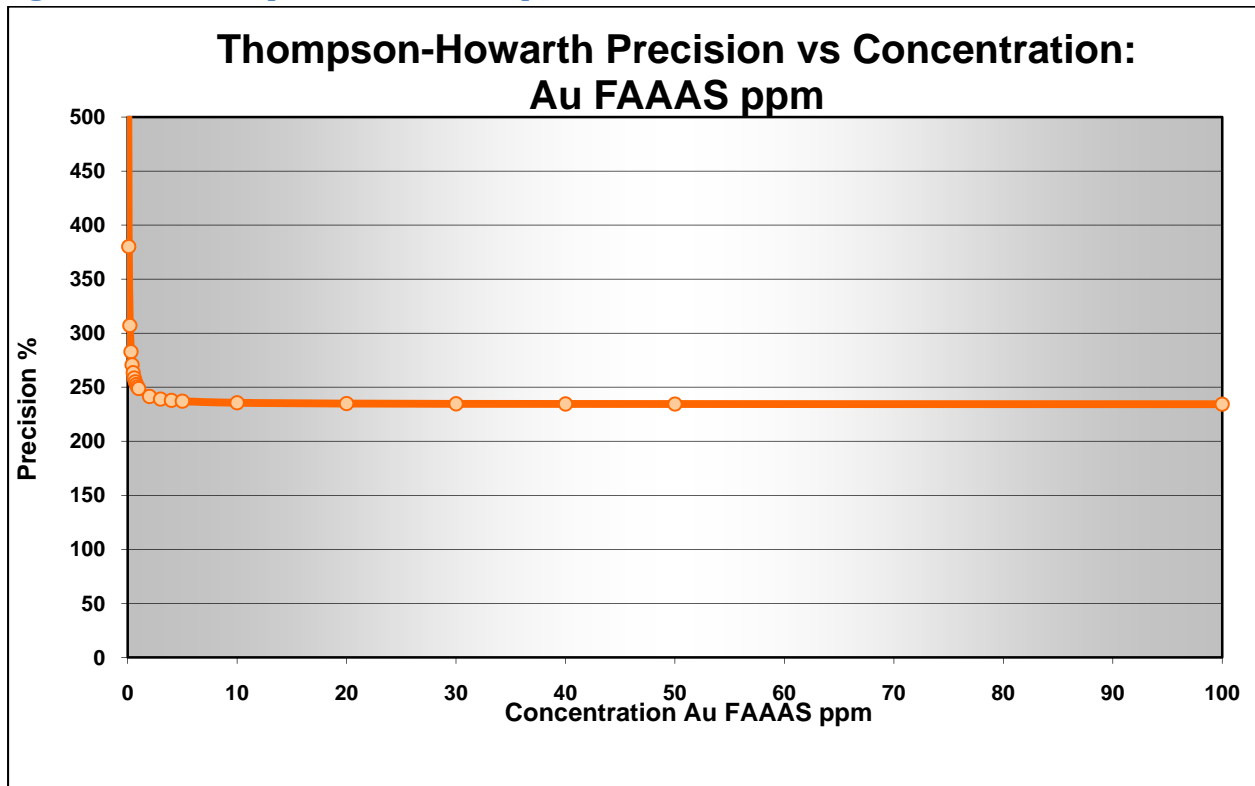
Table 3 - Duplicate Pair Results

Sample	QC Sample	Au ppm	QC Au ppm	ARD
1233014	1233073	0.056	0.068	0.19
1233094	1233189	0.359	0.176	0.68
1233233	1233264	0.096	0.037	0.89
1233279	1233361	0.027	0.093	1.1
1233297	1233362	0.154	0.186	0.19
1233310	1233363	0.021	0.017	0.21
1233336	1233364	0.041	0.051	0.22
1233357	1233365	7.331	1.536	1.31
1233395	1233440	0.058	0.254	1.26
1233410	1233441	0.017	0.031	0.58
1233429	1233442	0.041	0.043	0.05

1233508	1233598	0.081	0.037	0.75
1233510	1203569	1.175	0.075	1.76
1233525	1233599	0.342	0.268	0.24
1233530	1203559	0.302	0.233	0.26
1233545	1233600	0.234	0.233	0
1233550	1203560	0.067	0.103	0.42
1233584	1233601	0.065	0.063	0.03
1233610	1203745	0.451	0.797	0.55
1233610	1233783	0.451	0.664	0.38
1233630	1203746	0.208	0.596	0.97
1233630	1233784	0.208	0.541	0.89
1233650	1233785	0.067	0.175	0.89
1233650	1203747	0.067	0.018	1.15
1233670	1233786	0.144	0.281	0.64
1233670	1203748	0.144	0.05	0.97
1233690	1203749	0.263	1.824	1.5
1233690	1233787	0.263	0.051	1.35
1233710	1233788	0.781	0.205	1.17
1233710	1203750	0.781	0.119	1.47
1233750	1233790	0.216	0.154	0.34
1233770	1233791	0.07	0.204	0.98
1233810	1233831	0.818	0.256	1.05
1233830	1233832	0.106	0.147	0.32
1233850	1203561	9.104	17.681	0.64
1233870	1203562	0.284	0.971	1.09
1233910	1203564	5.809	1.767	1.07
1233930	1203565	0.147	0.177	0.19
1233970	1203567	0.156	0.06	0.89
1233990	1203568	0.159	0.16	0.01

Further review of the duplicate pairs can be performed using Thompson-Howarth Precision vs. Concentration plots. These plots display the correlation between the results in more general terms, where the precision percent is a representation of the variability (increased precision percent implies increased percent variability between primary and duplicate samples). If all duplicate pairs are included in the statistical plot the result is as shown in Figure 16.

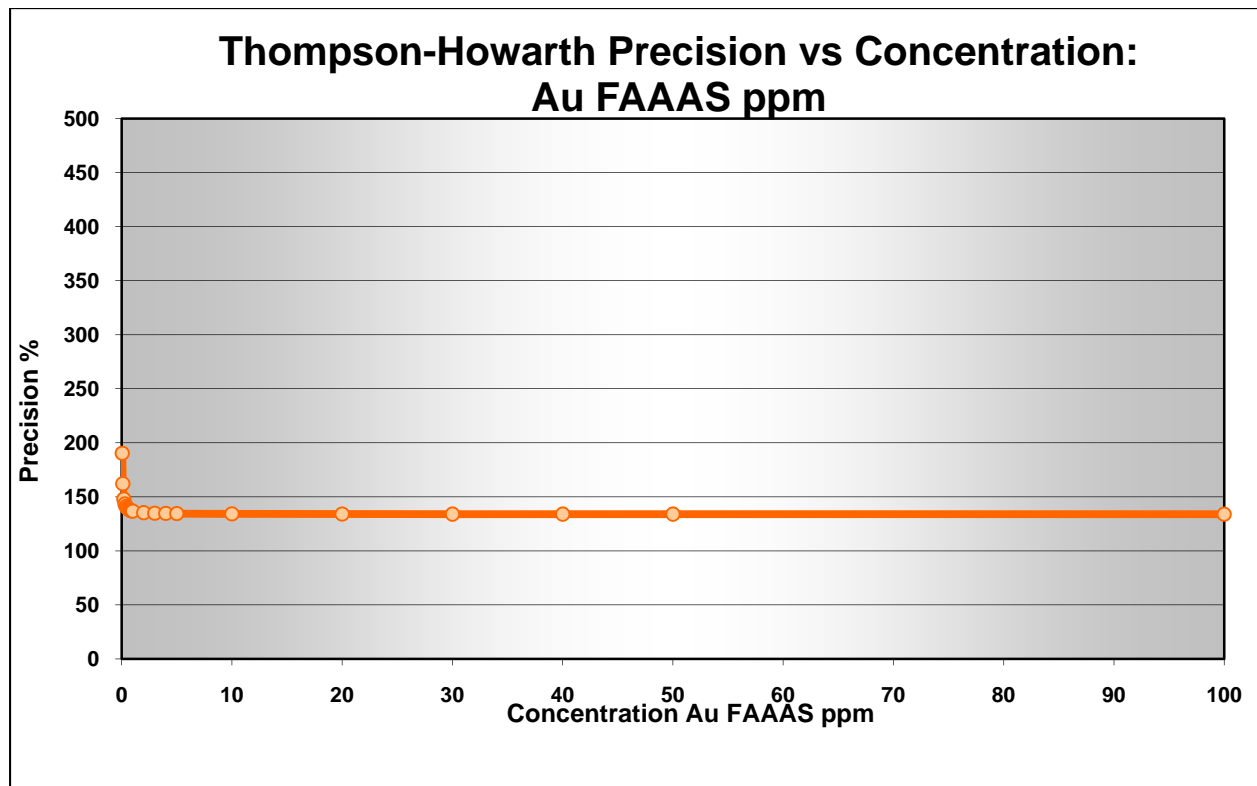
Figure 16 - Field Duplicate Pairs Thompson-Howarth Precision vs. Concentration



244 Precision Percent implies a strong lack of consistency in the concentrations reported on the duplicate pairs.

If outlier results are removed, then the statistical overview is as shown in Figure 17.

Figure 17 - Field Duplicate Pairs Thompson-Howarth Precision vs. Concentration - Greater than 1 ARD Pairs Removed



With the removal of ten pairs (25 percent of the duplicate pairs) that had an ARD greater than 1, the statistical review maintains that the results have poor inferred precision.

In my opinion this is very likely due to the nature of the mineralization at the Northshore project, where the drill core halves are actually of varying concentrations, likely due to coarse mineralization locally and a resultant nugget effect. It will be beneficial to the project to analyze the degree of coarse mineralization using screen fire assay techniques. The preparation of the duplicate samples might then be addressed, in order to maintain a “blind to the lab” representation of the repeatability within the reported results.

## 2.2 Repeats

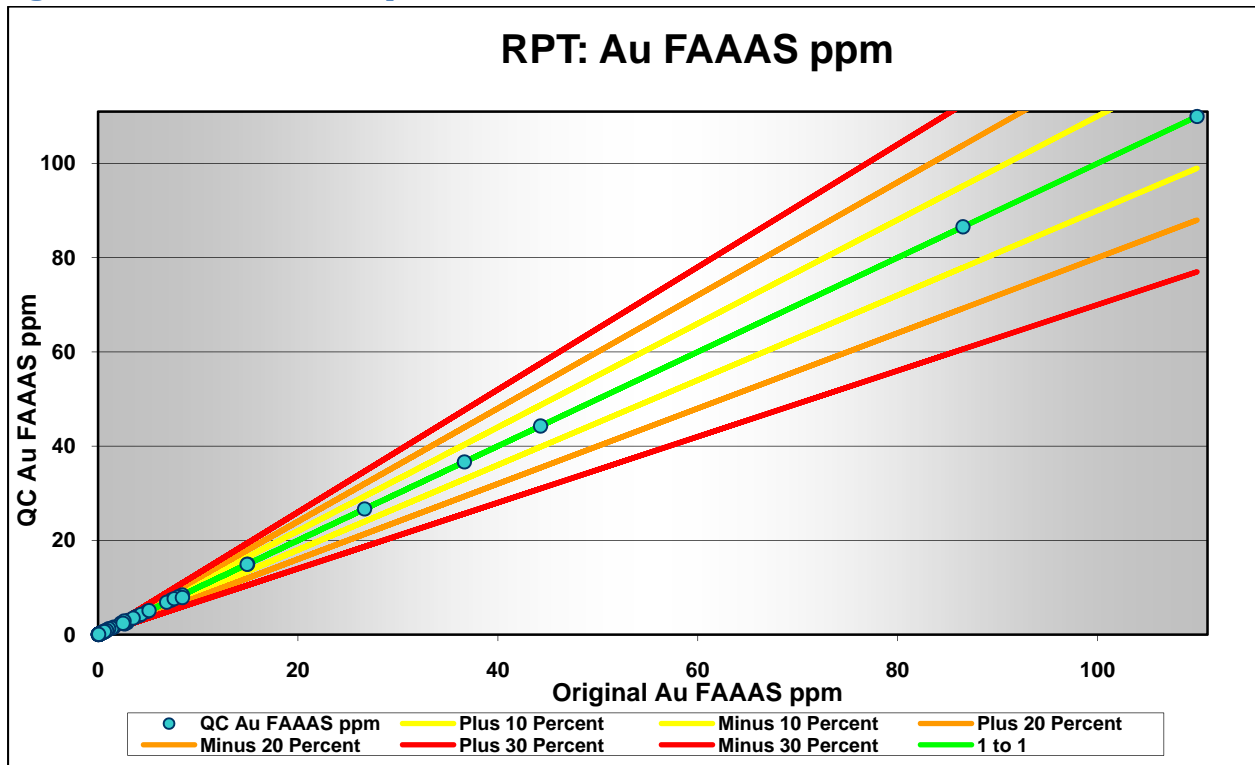
Repeat analyses on primary samples can further the insight into the inferred precision in the primary sample results.

109 repeated analyses were performed by Accurassay at the request of GTA. This amounts to 11.8 percent relative to the total number of primary samples analyzed (922). These repeats can be reviewed to show the repeatability of the primary sample results, similar to the duplicate samples.

Twelve of the 109 pairs had results returned with an ARD greater than 0.3. This is 11 percent of the pairs, but this is a significant improvement on the field duplicate pairs.

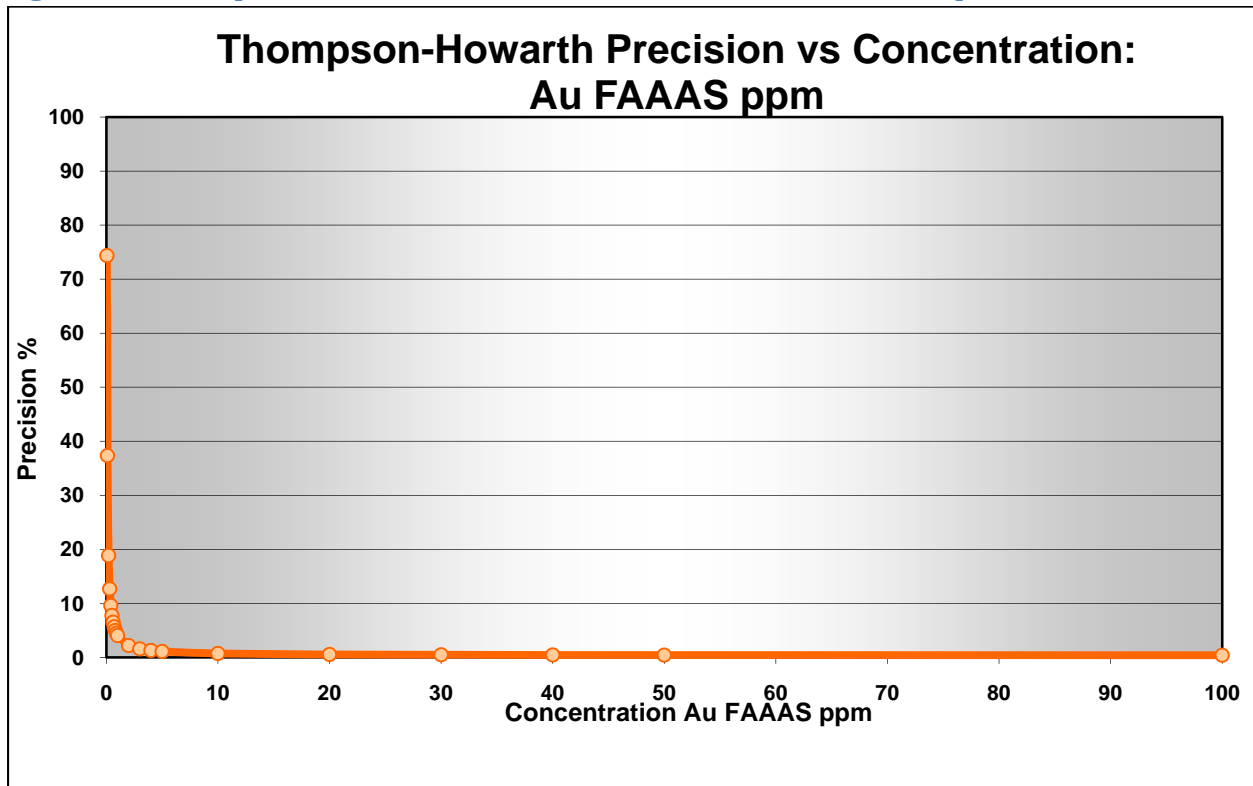
The scatter plot of the repeats shows a strong correlation within the repeat pairs which infers that the repeatability or precision of the results is strong.

Figure 18 - Scatter Plot of Repeat Pairs



The Thompson-Howarth statistical summary of the data pairs is shown in Figure 19.

Figure 19 - Thompson-Howarth Precision Vs. Concentration Plot for Repeat Pairs



With the precision percent trending toward 0.36 percent (0.36 percent statistical variability within the data set), the statistical grouping of the results shows very strong inferred precision.

The field duplicates infer poor precision and the repeats infer very strong precision. Overall, it is my opinion that a satisfactory level of precision can be inferred for the primary sample results.

It is my recommendation that the field duplicates be pulverised prior to splitting. This could serve to better homogenize the sample material for an improved method of reviewing the precision of results that is blind to the lab. Half of the field duplicates can be pulverised prior to splitting the samples for submission with the sample batches; these pulverised field duplicates should be captured as a different QAQC item in order to use them effectively for QAQC purposes.

Further analysis of the nature of the mineralization and its local variability is merited.

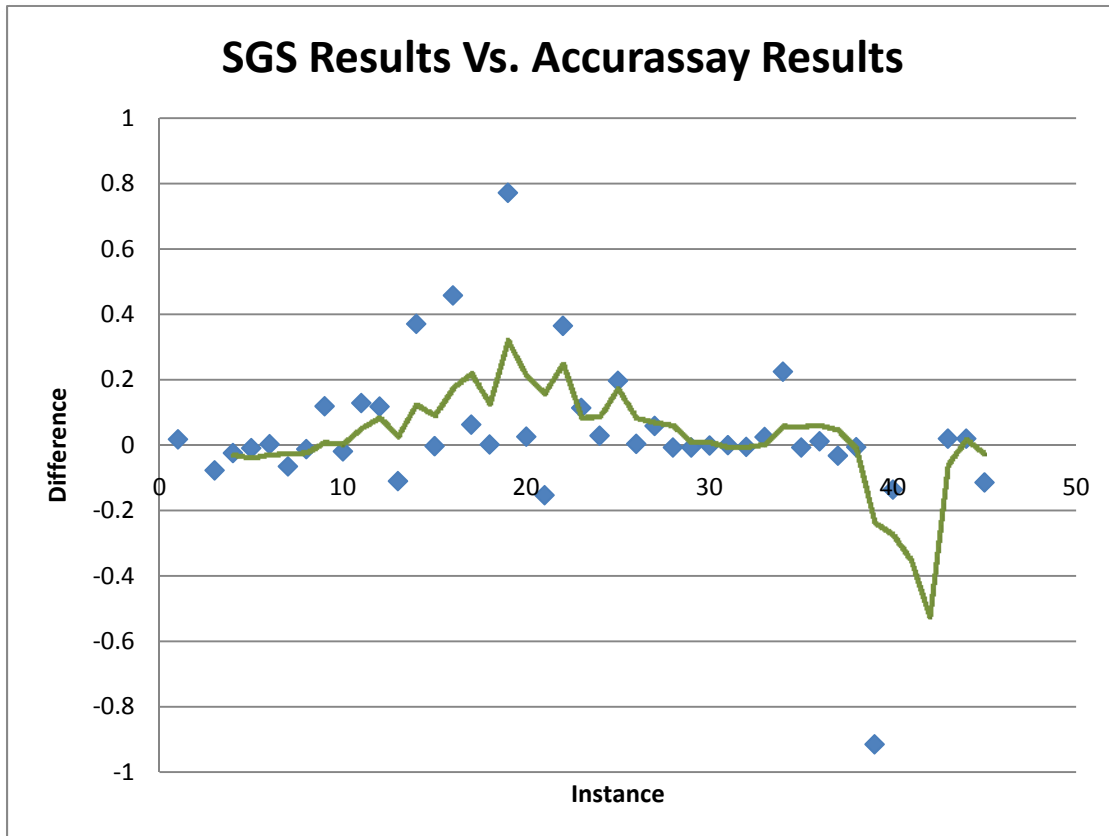
### 3. Check Samples

Check samples serve to review the primary samples for bias. For the 2012 Northshore project, 69 (7.48 percent relative to total 922 primary samples) statistically representative samples were selected for secondary check analysis at SGS Canada. The samples were analyzed using similar analytical techniques (fire assay with atomic absorption finish).

The check samples were performed on reject material from the original sample source. Therefore, some degree of variability due to the nugget effect mentioned earlier may be a factor in the repeatability of the results. However, the check sample results compared to the primary results will define any primary sample result bias.

The check sample results have been plotted within a chart displaying the difference in the reported results. The bias chart shows the difference in results and a moving average line.

**Figure 20 - SGS Results Compared to Accurassay Results - Difference**



The bias chart shows that the results reported by SGS are neither particularly greater than nor less than the primary sample results reported by Accurassay. A few samples are anomalously lower than the original reported results and I believe that these do not represent the bias but are a function of the nature of the mineralization at the Northshore project.

The average value of the check samples reported by SGS was 0.733 ppm gold and the average value of the check samples reported by Accurassay was 0.849 ppm gold. The average difference was -0.11 ppm gold. With the exclusion of the few anomalous results depicted above, the result is 0.034 ppm gold average difference.

Overall, it can be inferred through a review of the check sample results that there is no significant bias in the results reported by Accurassay.

## Conclusion and Recommendations

The QAQC procedures in place for the 2012 Exploration program at the GTA Northshore project have been sufficient to represent an inference of the quality of the results reported by the primary lab.

Initial review of the standard and blank results reported by Accurassay resulted in reanalysis of 180 samples related to 10 standard failures and 6 blank failures. All of the re-run results were assigned precedence over the original sample results.

A reasonable level of accuracy has been established within the primary sample results reported by Accurassay.

It is inferred that the re-run analysis and precedence of these results has rid the assay results from local contamination and instrumentation problems.

I recommend the use of standards 17 Pb, 61 Pb and 62 Pb in future exploration programs, as these standard materials were determined to be reliable and they are at low, mid, and high gold concentrations respectively.

In addition to the regular run of coarse blank material, I recommend the insertion of coarse blank material following a transition from an apparent high grade region of the drill core or upon the notice of visible gold.

A detailed review of field duplicate and repeat analytical results has taken place. It is apparent that the nature of the mineralization at the Northshore project is locally variable, possibly as a function of nugget mineralization. The field duplicates infer poor precision and the repeats infer very strong precision. Overall, it is my opinion that a satisfactory level of precision can be inferred for the primary sample results.

For field duplicates, I recommend pulverization of the drill core sample material prior to splitting the material into primary and duplicate samples.

It can be inferred through a review of the check sample results that there is no significant bias in the results reported by Accurassay.

In my opinion, the primary sample results have been inferred to have sufficient accuracy and precision for representing the Northshore project.



## **APPENDIX V**

### **Verification Sample Analytical Results and Laboratory Procedures**

Monday, December 5, 2011

### Certificate of Analysis

 Minorex Consulting Ltd.  
 25856-28th Avenue  
 Aldergrove, BC, CAN  
 V4W-2Z8  
 Ph#: (604) 857-0442  
 Email: minorex@shaw.ca

 Date Received: 11/04/2011  
 Date Completed: 11/21/2011  
 Job #: 201144068  
 Reference:  
 Sample #: 10

Acc #	Client ID	Au ppm	Ag ppm	Al %	As ppm	B 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	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Se ppm	Si %	Sn ppm	Sr ppm	Ti ppm	Tl ppm	V ppm	W ppm	Y ppm	Zn ppm
276920	G094422	27.583	3	0.04	17	34	8	<2	39	0.14	<4	1	61	115	0.66	0.02	<1	0.02	<100	13	0.01	103	<100	10	<5	<5	0.01	<10	8	<100	<2	4	<10	<2	138
276921	G094423	20.786	3	0.04	2	33	2	<2	29	0.08	<4	2	89	9	0.81	<0.01	<1	0.02	<100	21	0.01	161	<100	82	<5	<5	0.01	<10	5	<100	<2	7	<10	<2	<1
276922	G094424	138.294	53	0.11	12	31	11	<2	351	0.04	<4	5	100	74	1.68	0.05	<1	0.03	<100	26	0.02	172	<100	372	<5	<5	0.02	<10	<3	<100	2	8	285	<2	<1
276923	G094425	16.293	<1	0.04	5	28	8	<2	9	0.04	<4	<1	62	10	0.88	0.02	<1	<0.01	<100	14	0.01	102	<100	3	<5	<5	0.01	<10	<3	<100	5	5	112	<2	<1
276924	G094426	96.148	34	0.03	3	31	5	<2	34	0.10	<4	1	68	35	0.76	0.02	<1	0.01	<100	13	<0.01	99	<100	362	<5	<5	0.01	<10	8	<100	<2	4	<10	<2	306
276925	G094427	13.692	<1	0.15	3	26	19	<2	12	0.54	<4	7	54	11	1.44	0.07	<1	0.16	242	14	0.03	96	<100	7	<5	<5	0.02	<10	17	<100	<2	6	<10	2	<1
276926	G094428	2.296	<1	0.91	2	26	67	<2	7	2.76	<4	7	31	125	1.89	0.27	12	0.32	389	9	0.06	56	424	6	<5	<5	0.03	<10	54	<100	5	10	<10	8	<1
276927	G094429	55.244	39	0.28	13	32	10	<2	30	2.84	33	2	57	99	1.09	0.03	5	0.14	423	12	0.02	92	<100	38	<5	<5	0.02	<10	36	<100	9	5	45	4	4518
276928	G094430	1.047	<1	1.04	7	25	53	<2	8	2.15	<4	12	25	27	2.82	0.20	14	0.54	391	6	0.05	40	474	7	<5	<5	0.02	<10	55	<100	9	12	<10	6	45
276929	G094431	131.946	33	0.45	15	29	35	<2	99	0.85	50	6	75	1207	2.01	0.17	5	0.21	147	16	0.05	138	187	250	<5	<5	0.03	<10	21	<100	<2	10	72	2	4332
276930D	G094431	205.804	23	0.43	16	29	34	<2	100	0.83	49	5	78	1178	1.99	0.17	4	0.21	145	17	0.05	142	187	245	<5	<5	0.02	<10	20	<100	<2	10	70	2	4239

PROCEDURE CODES: ALP1, ALFA1, ALAR1

 Certified By:   
 Jason Moore, General Manager

 The results included on this report relate only to the items tested  
 The Certificate of Analysis should not be reproduced except in full,  
 without the written approval of the laboratory

Thursday, February 23, 2012

### Certificate of Analysis

 Minorex Consulting Ltd.  
 25856-28th Avenue  
 Aldergrove, BC, CAN  
 V4W-2Z8  
 Ph#: (604) 857-0442  
 Email: minorex@shaw.ca

 Date Received: 02/02/2012  
 Date Completed: 02/22/2012  
 Job #: 201240241  
 Reference: 201144068  
 Sample #: 8

Acc #	Client ID	Au Grav oz/t	Au Grav g/t(ppm)
21681	G094422	0.927	31.786
21682	G094423	0.731	25.044
21683	G094424	16.337	559.981
21684	G094425	0.399	13.665
21685	G094426	9.987	342.339
21686	G094427	0.249	8.536
21687	G094429	1.651	56.576
21688	G094431	14.040	481.257

PROCEDURE CODES: ALFA7

 Certified By:   
 Derek Domianluk H.Bac., Laboratory Manager

The results included on this report relate only to the items tested  
 The Certificate of Analysis should not be reproduced except in full,  
 without the written approval of the laboratory

## ASSAY PROCEDURES – GRAVIMETRIC GOLD

### Sample Preparation

The rock samples are first entered into Accurassay Laboratories' Local Information Management System (LIMS). The samples are dried, if necessary, and then jaw crushed to 70% <8 mesh and a 250 to 500 gram sub-sample is normally taken for analysis. The sub-sample is pulverized to 85% <200 mesh and then matted to ensure homogeneity. The homogeneous sample is then sent to the fire assay laboratory. Non-silica based sand is used to clean out the pulverizing dishes between each sample to prevent cross contamination.

### Gravimetric Au Analysis

For the analysis of higher grade gold samples (having approximately 3 g/t or higher of gold), each sample is mixed with a lead based flux and fused for one hour and fifteen minutes. Each sample has a silver solution added to it prior to fusion which allows each sample to produce a precious metal bead after cupellation. The fusing process results in lead buttons that contains all of the gold from the samples as well as the silver that is added. The buttons are then placed in a cupelling furnace where all of the lead is absorbed by the bone cupels and a silver bead, which contains any gold is left in each cupel. The cupels are removed from the furnace and allowed to cool. Once the cupels have cooled sufficiently, the silver bead from each is placed in an appropriately labeled porcelain cupel and digested using dilute nitric acid to remove the silver. The remaining sponge is rinsed with water and annealed using a torch to produce a gold bead. The gold bead is weighed on a microbalance. The results are checked by the technician and then forwarded to data entry. The Laboratory Manager checks the data, validates it if it is error free and a certificate is produced. The results are then forwarded to the client by E-mail, hardcopy or whatever other methods have been agreed upon.

### Calculations

Results for gravimetric analysis are available in grams-per-tonne (g/t) and ounces-per-tonne (oz/t).

$$\text{Grams-per-tonne (g/t)} = ((R/1000)/w) * 1000000$$

where R = reading from microbalance (mg)  
w = weight of assay (g)

$$\text{Ounces-per-tonne (oz/t)} = \text{g/t value} \times 0.029167$$

## **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 Accurassay Laboratories and tested by round robin with laboratories across Canada, and ISO certified calibration standards purchased from suppliers. Should any of the standards fall outside the warning limits ( $\pm 2SD$ ); reassays will be performed on 10% of the samples analyzed in the same batch and the reassay values are compared with the original values. If the values from the reassays match original assays the data is certified, if they do not match the entire batch is reassayed. Should any of the standards fall outside the control limit ( $\pm 3SD$ ) all assay values are rejected and all of the samples in that batch will be reassayed.