#### FORM 6K

# SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Report of Foreign Private Issuer Pursuant to Rule 13a – 16 or 15 d – 16 under the Securities Exchange Act of 1934

# For the month of May 2013

000-29880 (Commission File Number)

Virginia Mines Inc. 200-300 St-Paul Quebec City, QC, Canada G1K 7R1 (Address of principal executive offices) SEC Wail Processing Pontion JUN 0 4 2013

> Wasnington DC 405

Virginia Mines Inc. (Registrant)

Date: May 28, 2013

By: Name: Noella Lessard Title: Executive Secretary

Exhibit 1

Technical Report and Recommendations – Winter 2012 Drilling Program, Lac Gayot, Québec

Prepared by: François Huot, Ph.D., Geo., Senior Project Geologist; and Pascal Simard, B.Sc., Eng. Jr. – Virginia Mines Inc.

8 paper copies

# 000-29880 Commission File Number

Riginal

SEC Mail Processing

JUN 04 2013

Technical Report and Recommendations Winter 2012 Drilling Program, Lac Gayot Property, Québe@Vasnington DC 405

# VIRGINIA MINES INC. KGHM INTERNATIONAL LTD. January 2013

Prepared by:

François Huot, Ph.D., P. Geo. Senior Project Geologist Virginia Mines Inc.

Pascal Simard, B.Sc., Jr. Eng. Geological Engineer Virginia Mines Inc.

Form 43-101F1 Technical Report

. ..

÷.,

¥3

a a a

٠.\_\_

5 m

# **TABLE OF CONTENTS**

TABLE OF CONTENTS	ii
ITEM 1 SUMMARY	1
ITEM 2 INTRODUCTION	2
ITEM 3 RELIANCE ON OTHER EXPERTS	2
ITEM 4 PROPERTY DESCRIPTION AND LOCATION	2
ITEM 5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUC	TURE
AND PHYSIOGRAPHY	3
ITEM 6 HISTORY	3
6.1. Property ownership	3
6.2. Previous work	4
ITEM 7 GEOLOGICAL SETTING	6
7.1. Regional Geology	6
7.2. Geology of the Property	6
ITEM 8 DEPOSIT TYPES	8
ITEM 9 EXPLORATION	8
ITEM 10 DRILLING	12
ITEM 11 SAMPLING METHOD AND APPROACH	28
11.1. Sample security, storage and shipment	28
11.2. Sample preparation and assay procedures	28
ITEM 12 DATA VERIFICATION	29
ITEM 13 MINERAL PROCESSING AND METALLURGICAL TESTING	30
ITEM 14 MINERAL RESOURCE ESTIMATES	30
ITEM 23 ADJACENT PROPERTIES	30
ITEM 24 OTHER RELEVANT DATA AND INFORMATION	30
ITEM 25 INTERPRETATION AND CONCLUSIONS	31
ITEM 26 RECOMMENDATIONS	36
ITEM 27 REFERENCES	37
DATE AND SIGNATURE PAGES	
ILLUSTRATIONS	

. . .

۰.

# LIST OF TABLES

Table 1. Summary of previous work realized in the area of the Lac Gayot Project	4
Table 2. List of all drillholes realized during winter 2012	9
Table 3. List of all significant mineralized intervals obtained during winter 2012	10
Table 4. List of all drillholes in which the InfiniTEM survey was realized.	11

\_\_\_\_\_

# LIST OF PHOTOGRAPHS

Photo 1.	The plagioclase-phyric dacitic volcaniclastics also known as the crystal tuff unit at a depth of 140 metres (GA-12-082). At the scale of the property, these rocks have andesitic to more or less rhyolitic compositions	13
Photo 2.	Disseminated pyrrhotite with traces of chalcopyrite inside peridotite in the Nancy-East extension (GA-12-083)	14
Photo 3.	Minor pyrrhotite stringers and traces of pyrite in metasedimentary rocks at a depth of 40.40 metres (GA-12-089)	18
Photo 4.	Olivine-bearing pyroxenite from the Gagnon area. Mineralogy includes abundant fibrous tremolite and clinochlore (bluish grey) with common, large and irregular metamorphic hornblende and fine-grained magnetite. Sulphides are common and include pyrrhotite with lesser quantities of violarite, pentlandite and chalcopyrite	20
Photo 5.	Sulphide cluster including pyrrhotite (light purple-grey), violarite (pale cream with cleavages) and chalcopyrite (greenish yellow) in olivine-bearing pyroxenite. This sample was taken in one of the drillholes done in 2012 in the Gagnon area	20
Photo 6.	Several gabbroic facies with sharp intrusive contacts (chill margins) between 84 30 and 89 00 metres (GA-12-093).	21
Photo 7.	Remobilized massive sulphides (pyrrhotite, pentlandite, chalcopyrite) over 30 cm in pyroxenite at 27.10 metres (GA-12-094)	22
Photo 8.	Stringer composed of pyrrhotite, pentlandite and chalcopyrite (remobilized sulphides) at the contact between plagioclase-phyric rhyolitic volcanics and olivine-bearing pyroxenites at 64.40 metres (GA-12-098).	26
Photo 9.	Veins composed of quartz, calcite and minor hematite fracturing the gabbroic unit at a depth of about 80 metres (GA-12-101).	
Photo 10.	Large pentlandite-violarite assemblage containing chromite inclusions in mineralized peridotite at a depth of 45.40 m etres. (GA-12-083) / Reflected light	32
Photo 11.	. Pyrrhotite-violarite inclusion in a chromite crystal in mineralized peridotite at a depth of 45.40 metres. (GA-12-083) / Reflected light.	

...

#### LIST OF FIGURES AND MAPS

- Figure 1: Location of the Lac Gayot Property
- Figure 2: Location of the two blocks of claims (scale 1: 250,000)
- Figure 3: Geological map (scale 1:50,000)
- Figure 4: Location of drillholes around Nancy and Nancy-East showings
- Figure 5: Location of drillholes around the Gayot showing
- Figure 6: Location of drillholes around MIA, Gagnon and Pantoufle showings
- Figure 7: Location of drillholes around the De Champlain showing
- Figure 8: Section Nancy 4+75 E
- Figure 9: Section Nancy 5+15 E
- Figure 10: Section Nancy 6+35 E
- Figure 11: Section Nancy 6+85 E
- Figure 12: Section Nancy 7+45 E
- Figure 13: Section Gagnon 2+00 E
- Figure 14: Section Gagnon 2+25 E
- Figure 15: Section Gagnon 2+40 E
- Figure 16: Section Gagnon 3+00 E
- Figure 17: Section Gagnon 3+40 E
- Figure 18: Section Gagnon 4+25 E
- Figure 19: Section Gagnon 6+40 E
- Figure 20: Section De Champlain 11+85 N
- Figure 21: Section De Champlain 12+40 N

#### LIST OF APPENDICES

- Appendix I: List of claims
- Appendix II: Drillhole logs including lithological descriptions, sampling intervals and deviation measurements (1999-2012)
- Appendix III: Drill Assay Certificates

...

### **ITEM 1 SUMMARY**

Since 1998, Virginia Mines conducted, either solely or with exploration partners, several campaigns of prospecting, detailed mapping, trenching, geophysics and drilling over its 100%-owned Lac Gayot Property (Nunavik, Québec). These programs were efficient in establishing quite precisely the geological architecture of the Venus belt, an Archean volcano-sedimentary greenstone belt known to host komatiite-associated Ni-Cu-PGE mineralizations. Since 2011, the project is part of a joint venture with KGHM International Ltd.

Exploration activities conducted on the project during winter 2012 included two geophysical surveys (ground high-temperature SQUID, InfiniTEM Borehole) and one drilling phase involving two helicopter-supported rigs. The SQUID survey covered the Nancy Dyke west of the Pantoufle showing together with the immediate surroundings of the Gayot showing. Some interpreted conductors were drill-tested but none of them could be readily explained by encountered lithologies. Borehole geophysics detected off-hole anomalies and anomaly build-ups at the end of a few holes varying from moderate to good quality conductors in the Nancy, Gagnon, Pantoufle and Gayot areas.

Twenty holes were drilled in the Nancy, Nancy-East, MIA, Gagnon, Pantoufle, Gayot and De Champlain areas for a total of 4,263 metres. Overall, low-grade, near-surface and relatively large mineralized intervals were extended or newly-discovered along the Nancy Dyke, particularly around Nancy-East and Gagnon. At the former locality, the best interval returned 0.75% Ni, 0.11% Cu, 0.15 g/t Pt and 0.51 g/t Pd over 20.60 metres from the bedrock surface down to 25.00 metres (GA-12-085). Interestingly, this interval contains less than 1.8% S, meaning that metal content in these rocks is very high. This hypothesis is confirmed by the fact that semi-massive sulphides (14.15% S) at Gagnon returned 9.57% Ni, 0.55% Cu, 2.04 g/t Pt and 9.52 g/t Pd over 30 centimetres (GA-12-094). Addition of these new drillholes helps us better constrain the geological architecture around mineralized occurrences, a pre-requisite for any further modeling of geophysical data and 3-D imaging.

Work carried on over the property during winter 2012 needs follow-ups. First, additional ground TDEM geophysics is necessary as the SQUID survey only covered selected targets. Optimizing configurations of that survey with respect to orientation and variable nature (disseminated to massive sulphides) and widths of known Ni-Cu-PGE mineralizations is the key element for selecting the next ground geophysical method to be used on the property. More drilling is also required to explain SQUID and InfiniTEM anomalies, to extend known mineralized occurrences both laterally and at depth and, finally, to test the possibility that additional mineralized ultramafic bodies are hidden at greater depths (below 200 metres).

#### **ITEM 2 INTRODUCTION**

This report provides technical information relevant to the Lac Gayot Project and the status of the exploration program completed during winter 2012. These activities, consisting in two geophysical surveys and in a drilling campaign, were mainly focused on the Nancy Dyke west of Pantoufle showing, and on the Gayot and De Champlain showings.

The first author François Huot, Ph.D. in Marine Geosciences and senior project geologist, supervises operations done on the Lac Gayot Project since January 2008. He was previously involved in the 1998, 2003 and 2004 fieldwork campaigns on that property. Co-author Pascal Simard, B.Sc. in Geological Engineering, is involved in the project since 2011.

Opinions expressed by both authors for this report are mainly based on their personal field observations. Their comments also rely on previous reports written on this project and on any other documents from public domain sources as listed in the reference section.

#### **ITEM 3 RELIANCE ON OTHER EXPERTS**

This section is not applicable to this report.

# **ITEM 4 PROPERTY DESCRIPTION AND LOCATION**

The Lac Gayot Property is located 115 kilometres north of the Fontanges airport operated by Hydro-Québec (Fig. 1) and 330 kilometres southwest of Kuujjuaq. It includes a total of 449 claims, among which 396 are located in the Venus Block and 53 in the Marilyn Block (Fig. 2). The list of claims is available in Appendix I.

### Lac Gayot Project

The camp coordinates and maps covered by the project are:

Latitude:	55°33' 42'' N
Longitude:	71°09' 19'' W
NTS:	23 M/09, 10, 11
UTM:	NAD 27, Zone 19
Easting:	364 050 E
Northing:	6 159 200 N

# ITEM 5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

The access to the project area is by float or ski-equipped aircraft from the Mirage outfitting camp some 255 kilometres southwest of the camp or from the Air Saguenay-owned Lac Pau base 115 kilometres to the southeast. The Coulon camp, owned by Virginia Mines, provides an easy access to the Lac Gayot camp too. All three sites are accessible by the Transtaiga gravel road among which Mirage and Coulon are accessible all-year round. Fontanges and Caniapiscau airports, accessible by the Transtaiga road, are the nearest facilities for aerial transportation from southern Québec.

In the surroundings of the Venus belt, the landscape is somewhat irregular with altitudes ranging from 420 to 570 metres. The highest elevations correspond to rocky, tundra-like plateaus located west and east of the volcano-sedimentary belt. The belt itself is mostly contained in an irregular valley extending in a NE-SW direction. The northeastern end of this valley extends into a roughly circular topographic depression with a diameter of at least 6.5 kilometres in the centre of which is located a small hill. The drainage basin of the whole property is limited to small lakes and rivers covering less than 15% of the property. Vegetation is typical of taiga with its open-spaced black spruce forests mainly occupying lower terrains whereas higher parts of the plateaus are quite similar to tundra.

# **ITEM 6 HISTORY**

# 6.1. Property ownership

Since its early days, the Lac Gayot Property is 100%-owned by Virginia Mines (previously Virginia Gold Mines Inc.). Under the terms of an agreement dated on January 17<sup>th</sup>, 2000, Billiton Resources Canada Inc., a subsidiary of Billiton Plc., had concluded a CA\$750,000 private placement (in Virginia Gold Mines) at \$1.00 per share by which Billiton was granted an exclusive right to exercise an option to gain a 50% interest in the Lac Gayot Property in return for CA\$4.5 M in exploration work. Billiton had until November 30<sup>th</sup>, 2003, to fulfill its obligations. In June 2006, having previously met all its obligations, Billiton Resources Canada ceased back its 50% interest in the property to Virginia Mines.

Then in August 23<sup>rd</sup>, 2007, Virginia Mines and Breakwater Resources entered into an agreement in which that latter company had the option to earn a 50% interest in the property in exchange for

#### Lac Gayot Project

CA\$10 M in exploration work over a 9-year period and cash payments totalling CA\$170,000. During spring 2010, financial difficulties forced Breakwater Resources to drop the earn-in options on the property.

On June 8<sup>th</sup>, 2011, Virginia Mines and Quadra FNX Mining Ltd. (now KGHM International Ltd.). signed an agreement in which the latter company has the sole and exclusive right to earn 50% beneficial interest in the property in exchange of CA\$10 M in exploration work over a 9-year period and cash payments totalling CA\$100,000.

#### 6.2. Previous work

Table 1 summarises geological work realized in the project area over the last decades.

Table 1. Summary of previous work realized in the area of the Lac Gayot Project.

#### Geological Survey of Canada (1961-63)

- Reconnaissance mapping at a scale of 1:1,000,000 by Stevenson.

Geological Survey of Canada (1966)

- Mapping programs in the areas of Caniapiscau and Fort George Rivers.

Geological Survey of Canada (1980's)

- Aeromagnetic survey of the Ungava peninsula.

#### Geological Survey of Canada (1989 to 1992)

- Mapping of a transect of the Ungava peninsula by Percival and his teams; Identification of the Goudalie Domain and the Vizien greenstone belt.

#### Ministry of Natural Resources of Québec (1997)

- Geochemical survey of the lake sediments of the Ungava peninsula.

#### Ministry of Natural Resources of Québec (1998)

-Geological mapping of the NTS sheet 23M, at a scale of 1:250,000.

#### Virginia Gold Mines (1998)

- Reconnaissance mapping and prospecting on the Lac Gayot Property.

- Helicopter-borne EM-Mag survey by Sial Geosciences Inc.

#### Virginia Gold Mines-SOQUEM-Cambior JV (1998)

- Reconnaissance, mapping and prospecting of MEP's 19-11, 19-13a, 19-13b, 19-14 and 19-15, acquired based on results from the geochemical survey of the Ungava peninsula lake sediments.

Virginia Gold Mines, Cambior and/or SOQUEM (1999)

- Reconnaissance, mapping and prospecting of MEP's 1429, 1433 and 1437 (Project 23M).

#### Virginia Gold Mines (1999)

<u>June</u>

- Reconnaissance, mapping and prospecting on the Lac Gayot Property.
- <u>Fall</u> - Mapping at a scale of 1:5,000 of the NE and Main grids.
- Max-Min and ground magnetic surveys over the two grids.
- Diamond drill program of 15 holes over 10 setups totalling 1,037 m.

#### Virginia Gold Mines and Billiton (2000)

#### January to February

- 297.5 km of line cutting, 301 km of ground magnetic survey, 10.3 km of IP test and 154.2 km of TDEM survey. March to April
- Diamond drill program of 21 holes over 20 setups totalling 3,086 m. June to August
- Geological mapping of the entire 2000 grid at a scale of 1:5,000.
- Discovery of Western boulder field, and Nancy and De Champlain showings.
- Borehole Pulse EM (Geonix system) in holes GA00-01, 03b, 09, 10 and 20.
- October
- Dynamite trenching and detailed geology over L and Gagnon areas.
- Discovery of MIA, Pantoufle and Gagnon-extension showings and massive sulphides at De Champlain showing. November-December
- Diamond drill program of 16 holes over 12 setups totalling 1,530 m.
- Borehole Pulse EM (Geonix system) in holes GA00-11, 17, 22, 23b, 24 and 25b.

#### Virginia Gold Mines and BHP Billiton (2001)

February-March

- Diamond drill program of 18 holes over 12 setups totalling 2,187 m.
- Borehole Pulse EM (Crone system) in holes GA01-35, 38, 39, 40, 41, 42, 44 and 45. June to August
- Trenching and geological mapping (132 trenches for a total of about 2,460 m). October
- Helicopter-borne EM-Mag AeroTEM survey by Aeroquest Ltd, over Blocks A (MEP 1493), B (MEP 1495), C (MEP 1495) and test lines over the Nancy, Gayot, Gagnon and L Showings.

#### Virginia Gold Mines and BHP Billiton (2002)

February

- Snowmobile Beep Mat and blasting prospection over AeroTEM anomalies found on Blocks A (MEP 1493) and C (MEP 1495)

March-April

- Diamond drill program of 8 holes over 8 setups totalling 1,563 m (Nancy, Nancy-East, L and Gagnon areas)
- Borehole Pulse EM (Crone system) in holes GA02-51, 52, 53, 55, 56, 57 and 58.
- SiroTEM survey over L-De Champlain trend and Western Boulder Area. Two other surveys over Grid A and C on Blocks A (MEP 1493) and C (MEP 1495), respectively.
- July - Geological reconnaissance over the area of interest of the Lac Gayot Joint Venture; geological mapping and prospecting of Blocks A and C.
- Discovery of Pistolaté and Malorie showings (Block A).

#### Virginia Gold Mines and BHP Billiton (2003)

Winter

- Diamond drill program of 9 holes over 9 setups totalling 1,766 meters. Summer
- Geological reconnaissance, prospecting, trenching and sampling on Block A, Area 03 North and Lac Gayot Extension.
- Shallow drilling (X-ray Boyles) on Block A.

#### Virginia Gold Mines and BHP Billiton (2004)

Winter

- Diamond drill program of 14 holes over 14 setups totalling 2,742 meters.

#### Virginia Mines (2007)

<u>Spring</u>

- InfiniTEM ground survey over selected areas in the southwestern portion of the main grid.

#### Virginia Mines and Breakwater Resources (2007)

#### Fall

...

- Heli-borne Colibri magnetic survey by NovaTEM over main grid and the western portion of Block A.

#### Virginia Mines and Breakwater Resources (2008)

Summer

-Reassessment and resampling of all known showings, with particular attention to mineralization styles and geological features related to mineralization.

#### Virginia Mines and Breakwater Resources (2009)

Winter

-Relogging of 82 drillholes out of a total of 101 (11,014 m out of 13,913 m) (Internal Report).

#### Virginia Mines and Quadra FNX Ltd. (2011)

Summer

- Reassessment and resampling of all known showings, with particular attention to mineralization styles and geological features related to mineralization.

# **ITEM 7 GEOLOGICAL SETTING**

#### 7.1. Regional Geology

The Lac Gayot Property lies at the junction of three lithotectonic domains of the Superior Province, namely the Archean sub-provinces of La Grande, Ashuanipi and Minto. The La Grande sub-province and the Goudalie domain, which is part of the Minto sub-province, were considered by Gosselin and Simard (2000) as belonging to the same tectono-stratigraphic entity, the so-called "Goudalie - La Grande assemblage". Both contain several Archean volcano-sedimentary belts. However, Simard et al. (2008), in a compilation work of the northeastern Superior Province, do not refer to this informal assemblage anymore.

Several Archean greenstone belts of pluri-kilometric dimensions were also mapped in the 23M NTS sheet (Gosselin and Simard, 2000). All of them are grouped under the term "Gayot Complex". They are composed of basalts, felsic to intermediate tuffs, metasediments, iron formations, exhalites and common ultramafic lithologies (Gosselin and Simard, 2000; Huot et al., 2003; Savard, 2000).

#### 7.2. Geology of the Property

The Lac Gayot Project is mainly centered on the Venus volcano-sedimentary belt which is the largest one in the area stretching 30 kilometres long by up to 10 kilometres wide. The project also includes portions of the Marilyn belt (the geological features of that belt are not described in this report because no work was done in the Marilyn area during summer 2011). Besides the Venus belt itself, the property is dominated by a large variety of intermediate to felsic intrusive rocks. According to Gosselin and Simard (2000), most of these rocks correspond to tonalite of the Favard Suite. Other felsic rocks, with compositions ranging from granodiorite to granite, are late intrusions belonging to the Maurel and Tramont suites.

#### Lac Gayot Project

...

Detailed mapping carried out in the Venus belt since the early days of the exploration history allowed to define its internal stratigraphy which, at least on a large scale, appears to be a homoclinal sequence facing towards the east and southeast. The geological map of the property is shown in figure 3. Gosselin and Simard (2000) and Lafrance (2001) conducted mapping on the belt too. On its northwestern side, the belt is bordered by gneissic tonalites of the Favard Suite with lesser amounts of gabbros and diorites. Minor remnants of metabasalts have been preserved in this intrusive assemblage suggesting that the Favard Suite intruded the lower part of the Venus belt. Radiometric ages support such a relationship since the Favard Suite has been dated between 2,766 and 2,740 Ma whereas felsic rocks in the Venus belt are as old as 2,880±2 Ma (Simard et al., 2008). Assuming this hypothesis is true, tonalites in the northwestern part of the property are not part of an Archean basement onto which the Gayot Complex would have formed, but may be considered as younger felsic intrusions injected into the lower volcano-sedimentary package.

In a broad sense, the Venus belt is divided in two lithostratigraphic sequences. The lower portion of the belt is dominated by a relatively thick intermediate to felsic volcano-sedimentary package including some detrital units, and silicate and sulphide-facies exhalites. That sequence contains several extensive and relatively wide ultramafic sills and dykes known to host significant Ni-Cu-PGE mineralizations. The highly magnetic exhalative horizons seem to be restricted to the upper portion of this lower sequence and are commonly structurally juxtaposed to spinifex komatilitic basalts of the thick upper sequence. These magnesium-rich volcanics are interbedded with and overlain by basalts and their metamorphosed equivalents (amphibolites and mafic gneisses). A large oxide-facies iron formation, consisting in at least two distinct and folded horizons, is stratigraphically interlayered in the uppermost basaltic flows. Recent mapping confirmed that this magnetite-rich iron formation - with thicknesses ranging between 5 and 15 metres - is Archean in age rather than Proterozoic as suggested by Chapdelaine (2000a).

Huot et al. (2008) proposed that the upper and lower sequences may be juxtaposed along a thrust fault. Such a structural feature has yet to be observed on the field. That hypothesis was suggested due to the discrepancies in the magnetic signature between both sequences. Elliptical low magnetic zones in the southwestern part of the property may correspond to "dome-like" structures or tectonic windows. In such case, the whole lithological package would be folded despite being homoclinal at the scale of the property.

Early interpretations considered that all ultramafic rocks of the lower volcano-sedimentary package were emplaced as thick flows with the exception of the Nancy ultramafic unit thought to be a large feeder cutting across the "homoclinal" sequence. The 2007 NovaTEM airborne magnetic survey coupled with recent fieldwork allowed us to re-interpret the whole architecture of the ultramafic lithologies. There seems to be a sharp contrast in the mechanisms of emplacement of ultramafic rocks depending on their location with respect to the sulphide-bearing exhalative horizons. Southeast of the exhalites (upper sequence), we consider that ultramafic rocks were emplaced as komatilitic flows and that they are contemporaneous with high-magnesian basalts and common basalts. Such a setting is reminiscent of the Kambalda-style architecture. Stratigraphically below the exhalites, all ultramafic rocks appear to be intrusive, being either sills or dykes. Our interpretation is based on internal structures of such entities and their intrusive relationships with adjacent volcano-sedimentary horizons. The thick sills and dykes are fractionated with compositions varying from peridotite (rarely dunite) to gabbro. Locally, primary igneous textures are preserved, showing rare adcumulate (oAC) to augite and plagioclase

cumulate (apgC) resulting from fractionation processes. The Nancy Dyke, trending in an eastwest direction, is divided into a northern and a southern flank. The two flanks correspond to the magnetic features visible on the vertical magnetic gradient map in the western half between the Nancy and Gagnon showings (Fig. 4).

Refer to the technical reports and recommendations on the Lac Gayot Project which include geological mapping, trenching and drilling for details related to Ni-Cu-PGE or any other types of mineralizations on the property (Chapdelaine, 1999, 2000a, 2000b, 2001a, 2001b; 2002a, 2002b; Chapdelaine and Archer, 2003; Huot et al., 2003, 2004, 2008; Huot and Simard, 2012; and Savard and Chapdelaine, 1999). Refer to Huot et al. (2008) for a more detailed description of the Venus belt.

# **ITEM 8 DEPOSIT TYPES**

The Lac Gayot Project is known for its Ni, Cu and PGE mineralizations associated to ultramafic sills and dykes and, very rarely, to komatiitic flows and surrounding rocks. In these types of deposits, ore may have magmatic, hydrothermal/metamorphic or tectonic origins (Barnes, 2006). In a broad sense, magmatic mineralization is typically found at the base of the ultramafic units, trapped in channels, troughs and/or structural embayments (faults) and even as disseminations in larger bodies. Hydrothermal/metamorphic and tectonic mineralizations are commonly associated to magmatic ones but are found, respectively, in veins in the adjacent metasedimentary or volcanic footwall and in shear zones and fold hinges remobilized away from the host rocks.

Komatiite-associated orebodies are relatively small (sometimes less than one million tons each) but they tend to form clusters which turn them into economic deposits. Moreover, they contain high nickel tenors that are commonly coupled with high contents in platinum-group elements and copper. Some of the best known examples to date are found in the Archean Yilgarn Craton of Western Australia and in the Proterozoic Raglan belt in northern Québec.

#### **ITEM 9 EXPLORATION**

The winter 2012 exploration work consisted in three main types of activities: a ground geophysical survey, a diamond drilling campaign and an InfiniTEM borehole survey. Field activities on the project spanned from February 7<sup>th</sup> with mobilization of one of our technicians and the cook from Quebec to April 24<sup>th</sup> with final demobilization of the staff. In about two months and a half, more than 100 ski-equipped Otter flights operated by Air Roberval were done between the Coulon and Lac Gayot camps for transportation of fuel drums, grocery, equipment and people.

Mobilization of the staff from Discovery International Geophysics began on February 7<sup>th</sup> from Saskatoon (Saskatchewan). The survey itself was initiated on February 15<sup>th</sup> and ended on March 9<sup>th</sup>. The survey was realized on the Nancy Dyke from its western extremity in the gneissic tonalite of the Favard Suite to its eastern extremity in the surroundings of MIA, Gagnon and Pantoufle showings. Some survey lines were also extended towards south to cover the Gayot

showing. Read the report written by Kuttai (2012) for more information relevant to this survey. Some of the detected conductors were modeled and drill-tested during the winter.

Drilling operations began on March 10<sup>th</sup> with one rig mobilized from the Coulon Project. It was settled on GA-12-082 at Nancy. Twelve days later, a second rig was mobilized on the property and was positioned on GA-12-088 in the Gagnon area. A helicopter A-350 B2 operated by Heli-Inter arrived at Lac Gayot on March 15<sup>th</sup> and was used for mobilization of the rigs, crew and various equipment. The heavier loads were transported to the drill sites by the Coulon-based A-350 B3 helicopter also operated by Heli-Inter. Drilling operations ended on A pril 12<sup>th</sup> with demobilization of the drillers. One drill-rig with its accessories was sent to another project while the other one was left on hole GA-12-101 at De Champlain. Twenty holes were drilled for a total of 4,263 metres (Table 2).

		Easting	Northing	Elevation	Azimut	Dip	Length
DDH #	Area	(m)	(m)	(m)	(°)	(°)	(m)
GA-12-082	Nancy	363537	6162210	535	164	-50	210
GA-12-083	Nancy-East	363729	6162138	534	159	-46	141
GA-12-084	Nancy-East	363709	6162186	533	157	-49	225
GA-12-085	Nancy-East	363794	6162128	535	149	-44	156
GA-12-086	Nancy-East	363847	6162127	536	147	-46	177
GA-12-087	Gagnon	365396	6162438	499	160	-70	333
GA-12-088	Gagnon	365351	6162414	503	167	-53	210
GA-12-089	MIA	365295	6162491	501	159	-46	102
GA-12-090	MIA	365273	6162480	499	161	-45	99
GA-12-091	MIA	365276	6162538	503	159	-70	210
GA-12-092	Gagnon	365473	6162389	495	160	-55	255
GA-12-093	Gagnon	365453	6162437	495	161	-57	294
GA-12-094	Gagnon	365463	6162300	496	159	-47	120
GA-12-095	Nancy	363508	6162325	526	156	-59	312
GA-12-096	Pantoufle	365583	6162338	493	158	-59	375
GA-12-097	Nancy-East	363688	6162236	530	159	-50	264
GA-12-098	Gagnon	365494	6162347	496	158	-51	183
GA-12-099	Gayot	363959	6161590	528	160	-59	273
GA-12-100	De Champlain	370235	6166120	440	248	-51	174
GA-12-101	De Champlain	370167	6166146	450	247	-50	150
						Total (m):	4,263

Table 2. List of all drillholes realized during winter 2012.

In March and April, we collected 932 samples from these drillcores. After evaluation of the geochemical data, we noticed that more sampling was required to be sure that all mineralized intervals were properly and entirely sampled. In September, we completed the sampling by adding 93 samples to the winter database for a total of 1025. See Table 3 for all significant mineralized intervals obtained from this 2012 winter campaign.

. ..

٠

••

Hole	Easting Nad 27 / Z19	Northing Nad 27 / Z19	Azimuth (°)	Dip (°)	Length (m)		From (m)	To (m)	Length (m)	Ni (%)	Cu (%)	Pt (g/t)	Pd (g/t)	
GA-12-082	363537	6162210	164	-50	210		No significant value							
GA-12-083	363729	6162138	159	-46	141		38.00	50.00	12.00	0.69	0.11	0.13	0.45	
		(1(010)	1.67		0.05		76.00	92.00	16.00	0.52	0.09	0.15	0.46	
GA-12-084	363709	6162186	157	-49	225	incl.	77.00	81.00	4.00	0.91	0.16	0.26	0.88	
							4.40	25.00	20.60	0.75	0.11	0.15	0.51	
						incl.	5.00	9.00	4.00	1.04	0.15	0.22	0.74	
GA-12-085	363794	6162128	157	-44	156	incl.	15.00	23.00	8.00	1.04	0.18	0.22	0.75	
							32.00	36.00	4.00	0.89	0.21	0.23	0.80	
							137.50	139.00	1.50	0.54	0.08	0.18	0.49	
		(1)(0)07	1.65		1.77		10.00	14.00	4.00	0.34	0.06	0.08	0.24	
GA-12-086	363847	6162127	157	-46			33.00	36.00	3.00	0.35	0.03	0.07	0.23	
GA-12-087	365396	6162438	160	-70	333		No significant value							
GA-12-088	365351	6162414	167	-53	210			N	o signific	ant va	lue			
GA-12-089	365295	6162491	159	-46	102		56.00	56.75	0.75	0.38	0.12	0.08	0.30	
GA-12-090	365273	6162480	161	-45	99			N	o signific	ant va	lue			
GA-12-091	365276	6162538	159	-70	210			N	o signific	ant va	lue			
GA-12-092	365473	6162389	160	-55	255		101.40 115.00 13.60 0.36 0.05 0.06				0.21			
GA-12-093	365453	6162437	161	-57	294		128.70	135.70	7.00	0.21	0.03	0.06	0.18	
G + 10 004	265462	(1(0000	150	47	120		26.95	30.00	3.05	1.36	0.09	0.46	1.27	
GA-12-094	305403	6162300	159	-4/	120	incl.	26.95	27.25	0.30	9.57	0.55	2.04	9.52	
GA-12-095	363508	6162325	156	-59	312		243.00	244.00	1.00	0.07	0.20	0.01	0.25	
GA-12-096	365583	6162338	158	-59	375			N	o signific	ant va	lue			
GA-12-097	363688	6162236	157	-50	264			N	o signific	ant va	lue			
GA-12-098	365494	6162347	158	-51	183		64.55	79.00	14.45	0.52	0.07	0.12	0.35	
GA-12-099	363959	6161590	160	-59	273			N	o signific	ant va	lue			
GA-12-100	370235	6166120	248	-51	174		108.00	115.00	7.00	0.15	0.11	0.01	0.05	
							126.00	135.90	9.90	0.18	0.15	0.02	0.06	
							140.00	148.00	8.00	0.26	0.10	0.03	0.14	

Table 3. List of all significant mineralized intervals obtained during winter 2012.

Lac Gayot Project

ľ						150.00	151.80	1.80	0.16	0.09	0.02	0.08
GA-12-101	370167	6166146	247	-50	150	 108.00	110.00	2.00	0.18	0.17	0.06	0.22

Rock samples collected during the 2012 w inter program were obtained to determine the elemental concentrations in a quantitative way by ALS Chemex, Val-d'Or. These included mineralized rocks as well as others which were barren but of interest for lithological controls. Samples were all collected from drillcores using a rock saw.

All samples were placed in individual bags with their appropriate tag number and sealed with fibreglass tape. Individual bagged samples were then placed in shipping bags. The authors are not aware of sampling factors that would impact the reliability of the samples. The even distribution of the sulphides in both massive and disseminated sampled ores ensured that samples were of high quality and representative of the material or mineralization being sampled.

The borehole InfiniTEM survey was done in two separate phases in ten holes drilled during winter 2012. Three of these holes (GA-12-088, GA-12-093, GA-12-097) were blocked and could not be monitored. Table 4 lists the seven drillholes that were pulsed, including the interval surveyed in each of them. All information relevant to this survey can be found in Dubois (2012).

		Easting	Northing	Elevation	Azimut	Dip	Length	Surveyed Interval
DDH #	Area	(m)	(m)	(m)	(°)	(°)	(m)	(m)
GA-12-087	Gagnon	365396	6162438	499	160	-70	333	20-310
GA-12-091	MIA	365276	6162538	503	159	-70	210	20-190
GA-12-092	Gagnon	365473	6162389	495	160	-55	255	20-240
GA-12-095	Nancy	363508	6162325	526	156	-59	312	20-275
GA-12-096	Pantoufle	365583	6162338	493	158	-59	375	20-350
GA-12-099	Gayot	363959	6161590	528	160	-59	273	20-260
GA-12-100	De Champlain	370235	6166120	440	248	-51	174	20-160

Table 4. List of all drillholes in which the InfiniTEM survey was realized.

The staff changed regularly during the course of the operations. Virginia Mines' employees included François Huot (senior project geologist), Pascal Simard (junior geological engineer), David de Champlain, Normand Côté and Martin Gagnon (technicians), and Jason St-Amant and Yves Brisson (cooks). Another technician, Yves Savard from Explorations Nord-Sud, worked on the project for more than a month. During the geophysical surveys, there were six persons from Discovery International Geophysics Inc. (Squid Survey) and three persons from Abitibi Geophysics (Borehole Survey). Ten drillers from Chibougamau Diamond Drilling Ltd. stayed at the camp during drilling operations. Cyrilda Guay, a nurse from Services et Organisation de Soins Inc., was present on-site during the entire drilling operations. Three people from Services Technominex Inc. were also involved in the early phase of activities by building two dormitories and one first-aid facility. These guys were also helpful in assisting our technician in repairing many things on the camp site and in making the runway smoother for the Otter. An Astar 350 B2, operated by Héli-Inter, was used on a daily basis during drilling operations. The pilot and mechanic stayed at the camp too.

#### **ITEM 10 DRILLING**

This section describes information relevant to all 20 dr illholes done during the 2012 winter program. It includes information such as geological and geophysical data, including grades for each significant mineralized interval where applicable. Detailed geological description for each drillhole together with assay results from sampling intervals and deviation measurements using the FlexIT instrument are given in Appendix II. This appendix includes data from the 2012 drillholes and all those that were relogged in 2009. Drill assay certificates are included in Appendix III. The document entitled "Légende générale de la carte géologique, édition revue et augmentée (MB-96-28)" by Sharma (1996) was used for nomenclature. Figures 4 to 7 show the location of all drillholes whereas figures 8 to 21 refer to cross-sections. Note that the relative Ni content for each sampling interval is shown in red rectangles on the right side of each drillhole.

#### GA-12-082

This first hole of the campaign targeted known mineralization in the vicinity of the Nancy showing and was located 50 metres behind GA-01-048 where one interval graded 0.59% Ni and 0.77 g/t Pt-Pd over 5.1 metres. From 6.00 to 84.40 metres, lithologies in GA-12-082 mainly include pyroxenites and very minor olivine-bearing pyroxenites with one gabbroic interval and another one consisting in felsic metasediments. The normalized MgO content<sup>1</sup> of these ultramafic rocks is fairly constant between 18 and 21% and nickel tenors do not exceed 800 p pm. The gabbro has a heterogeneous texture and could represent a late crosscutting dyke. From 84.40 metres down to 204.60 metres, the lithological package includes a variety of intermediate to felsic metasediments and plagioclase-phyric volcaniclastics (also referred as crystal tuff) (Photo 1). Contacts between ultramafic lithologies of the Nancy Dyke and the intermediate to felsic host rocks are most commonly sharp and intrusive.

Owing to mechanical problems, the hole was stopped at 210 metres in an olivine-bearing pyroxenite (28% MgO) interpreted as the barren NE-SW sill. The upper edge of that sill was hit at 204.60 metres. Mineralization in the entire hole is limited to trace amounts and, locally, up to 1% disseminated pyrrhotite in ultramafic lithologies. These rocks also contain trace amounts of chalcopyrite very locally. No mineralized interval was crosscut by this drillhole. Hole GA-12-082 appears to have cut across the northern flank of the Nancy Dyke which extends from the surface down to 84.40 metres. After that depth, the hole did not intersect the deep extension of the southern flank of the dyke.

<sup>&</sup>lt;sup>1</sup> All oxide values given in the text correspond to tenors normalized to 100% on an anhydrous basis.



Photo 1. The plagioclase-phyric dacitic volcaniclastics also known as the crystal tuff unit at a depth of 140 metres (GA-12-082). At the scale of the property, these rocks have andesitic to more or less rhyolitic compositions.

#### GA-12-083

This hole was planned to test the possible western extension of Nancy-East showing on a new vertical section. After a 3.65 metre-thick overburden, the hole entered into a plagioclase-phyric crystal tuff down to 34.85 metres. A 1 metre-thick fault gauge marks the beginning of a large peridotitic body that extends down to 115.23 m. This lithology, interpreted as the Nancy Dyke, contains 2% pyrrhotite and pentlandite with traces of chalcopyrite between 38 and 50 m etres (Photo 2). The mineralized interval returned 0.69% Ni, 0.11% Cu, 0.13 g/t Pt and 0.45 g/t Pd over 12.00 metres.

Pyroxenite, occurring on the lower edge of the peridotitic body, has a sharp intrusive contact with the felsic metasedimentary rock at 116.25 m. That latter unit extends down to the end of the hole at 141.0 m etres, with the exception of one intrusive pyroxenitic injection from 118.50 to 124.10 metres.

The mineralized occurrence described above is similar, in terms of grades and host rocks, to the one found in the main Nancy trench or at the northern extremity of the Nancy-East trench. However, it differs from the southern extremity of the latter trench where mineralized rocks have composition typical of olivine-bearing pyroxenites. Hole GA-12-083 ended at 141 metres.



Photo 2. Disseminated pyrrhotite with traces of chalcopyrite inside peridotite in the Nancy-East extension (GA-12-083).

#### GA-12-084

This hole is located 50 metres behind GA-12-083 and tested the vertical continuation of the mineralized interval found in that latter hole. Moreover, data collected in hole GA-12-084 yielded more information allowing to geologically link lithologies at Nancy and Nancy-East.

After a 4.80 metre-thick overburden, the first encountered lithology corresponds to wacke with intermediate to felsic composition. A pyroxenitic injection intrudes the upper wacke at 15.60 metres. The lower contact of this amphibole-rich unit with a fine-grained gabbro is marked by a biotite-rich shear zone at 18.60 metres. The gabbro is intruded at 20.60 metres by a peridotitic unit containing between 29 and 32% MgO and between 1,150 and 1,350 ppm Ni. The last 1.50 metres (48.50-51.00 m) correspond to a pyroxenitic margin in contact with a fine-grained mafic horizon that is interpreted to be mafic volcanics. This entire first and unmineralized ultramafic sequence (20.60 to 51.00 m) is thought to represent the NE-SW sill.

The mafic volcanics, containing 53-56% SiO<sub>2</sub>, grade into plagioclase-bearing felsic tuff at a depth of 65.80 metres. A second large interval of ultramafic rocks was crosscut from 74.60 to 138.00 metres. Its upper contact with the felsic tuff is intrusive, unsheared and shows contact metamorphism over two centimetres. More specifically, this package includes weakly-mineralized olivine-bearing pyroxenites from 74.60 to 80.00 m, weakly-mineralized peridotites from 80.00 to 92.00 metres, barren peridotites from 92.00 to 116.50 metres and olivine-bearing pyroxenites from 116.50 to 138.00 metres. The lower contact is slightly sheared as shown by the presence of biotite-chlorite schist with calcite in the underlying felsic unit. The mineralized ultramafic horizon includes 2-3% disseminated and widely distributed pyrrhotite and pentlandite with trace amounts of chalcopyrite. It returned 0.52% Ni, 0.09% Cu, 0.15 g/t Pt and 0.46 g/t Pd

over 16.00 metres (76.00-92.00 m), including 0.91% Ni, 0.16% Cu, 0.26 g/t Pt and 0.88 g/t Pd over 4.00 metres (77.00-81.00 m). This interval of primary sulphides is similar to that intersected in GA-12-083. The MgO content in this second ultramafic interval systematically increases from 23% to 34% from 74.60 to 116.50 metres, suggesting that the base of the Nancy dyke is located on the southern side.

At greater depth, the hole cut across plagioclase-phyric felsic volcaniclastics (138.00-180.00 m) and wacke (180.00-225.00 m). Anomalous values in platinum (66 ppb) and palladium (149 ppb) were obtained in the upper portion of the felsic volcaniclastics from 138.50 to 140.50 metres. A 5-metre thick olivine-bearing pyroxenitic dyke intruded the wacke horizon from 186.25 t o 191.20 metres. Hole GA-12-084 ended at 225 metres.

# GA-12-085

The hole targeted the Nancy-East showing right under trench TR-01-3839 where channel sampling returned 1.10% Ni, 0.28% Cu and 1.32 g/t Pt+Pd over 19.9 metres. After a 4.40 metre-thick overburden, the hole enters into a large massive peridotitic unit down to 126.10 metres. Disseminated mineralization, consisting in 2-3% pyrrhotite and pentlandite with traces of chalcopyrite, is present from 4.40 to 28.00 metres. This first interval grades 0.75% Ni, 0.11% Cu, 0.15 g/t Pt and 0.51 g/t Pd over 20.6 metres (4.40 to 25.00 m). This zone includes two horizons with higher metal values which contain 1.04% Ni, 0.15% Cu, 0.22 g/t Pt and 0.74 g/t Pd over 4.00 metres (5.00-9.00 m) and 1.04% Ni, 0.18% Cu, 0.22 g/t Pt and 0.75 g/t Pd over 8.00 metres (15.00-23.00 m). Another mineralized interval with the same distribution of sulphides intersected from 32.0 t o 36.0 m etres grades 0.89% Ni, 0.21% Cu, 0.23 g /t Pt and 0.80 g /t Pd over 4.00 metres. These two mineralized horizons are similar to those intersected in holes GA-12-083 and GA-12-084.

The large peridotitic unit, interpreted as the Nancy Dyke, also includes a horizon of strongly sheared olivine-bearing pyroxenites from 36.00 to 39.50 metres and a strongly fractured gabbroic unit from 56.80 to 60.00 metres. Pyroxenites found between 126.10 and 137.50 metres mark the unsheared and gradual lower edge of the Nancy Dyke. The hole ended at 156 metres in a crystalbearing intermediate to felsic tuff (approximately 63% SiO<sub>2</sub>). The uppermost part of this volcaniclastic unit returned 0.54% Ni, 0.08% Cu, 0.18 g/t Pt and 0.49 g/t Pd over 1.50 metres (137.50-139.00 m).

# GA-12-086

This hole was testing the eastern extension of the Nancy-East showing at depth between the surface and hole GA-04-078 that only returned 0.24% Ni, 0.05% Cu, 0.06 g/t Pt and 0.18 g/t Pd over 3.50 metres (38.00-41.50 m). After a 8.65 metre thick overburden, we intersected peridotites from the bedrock surface down to 132.60 metres. Two mineralized zones with anomalous metal contents were hit in this magnesium-rich unit. The shallower one returned 0.34% Ni, 0.06% Cu, 0.08 g/t Pt and 0.24 g/t Pd over 4.00 metres (10.00-14.00 m) and the deeper one 0.35% Ni, 0.03% Cu, 0.07 g/t Pt and 0.23 g/t Pd over 3.00 metres (33.00-36.00 m). Occurrence of sulphides is limited to 1-2% disseminated pyrrhotite and pentlandite locally. The peridotitic unit evolves gradually into olivine-bearing pyroxenites (132.60 to 147.70 m) and into massive and homogeneous pyroxenites down to 150.70 metres. That entire ultramafic package, interpreted as

the Nancy Dyke, intruded a felsic volcaniclastic unit containing plagioclase phenocrysts intersected down to 156.30 metres. From that depth until the end of the hole at 177 metres, the rock sequence consists of felsic metasediments (probably wacke) with the exception of two narrow pyroxenitic dykes (160.30-162.40 m and 165.20-166.35 m).

# GA-12-087

This hole was the first one done during winter 2012 in the Gagnon area. It tested the upper edge of the Nancy Dyke that was found to be mineralized in holes GA-00-010, GA-00-019 and GA-01-044 along the same section. From the top to 129.60 metres, we intersected a large sequence of gabbros and a few pyroxenitic dykes a few metres wide. These intrusive rocks were injected into horizons of felsic metasediments. Contacts between gabbros and pyroxenites are gradual and both lithologies appear to be genetically linked. On the other hand, contacts of these rocks with metasediments are sharp and intrusive.

The upper portion of the Nancy Dyke, characterized by pyroxenites, was hit at a d epth of 129.60 metres. The internal composition of this dyke evolves into olivine-bearing pyroxenites from 139.25 to 165.00 metres before becoming peridotitic from 165.00 to 225.00 metres. The deeper portion of this first ultramafic package (225.00-230.10 m) corresponds to olivine-bearing pyroxenites in sharp contact with a wacke horizon. At 234.60 metres, the hole entered into a second ultramafic package beginning with peridotites down to 251.80 metres where the rock assemblage gradually evolves into olivine-bearing pyroxenites down to 302.00 metres. A gabbroic unit was crosscut down to the end of the hole at 333 metres. This gabbro is highly-strained and has a well-developed schistosity. It also contains anomalous percentages of biotite, is injected by 2-5% millimetric quartz veinlets and has up to 1% disseminated pyrrhotite with traces of chalcopyrite. No mineralized horizon was intersected.

The InfiniTEM borehole survey showed that there is a possible anomaly build-up at the end of this hole which is visible on the X component and on c hannels 7 t o 20. This geophysical signature seems to be the same source as the anomaly build-up visible at the end of GA-12-092 (Dubois, 2012). This author recommends extending GA-12-087.

#### GA-12-088

Drillhole GA-12-088 was done right under the main Gagnon trench and is located 50 metres behind GA-01-049 into which anomalous Ni (up to 0.32%) and Pt-Pd (0.42 g/t) values were obtained at a depth ranging from approximately 30 to 60 metres. The Gagnon showing graded up to 0.98% Ni, 0.22% Cu and 1.07 g/t Pt+Pd over 25.85 metres in channel sampling (Chapdelaine, 2000). One of the two metric lenses of massive sulphides sampled in 2011 in the main trench graded up to 9.26% Ni, 0.58% Cu, 1.49 g/t Pt and 1.80 g/t Pd (Huot and Simard, 2012).

Lithologies described in GA-12-088 match pretty well with the interpreted geological section based on GA-01-049, GA-99-004A and GA-99-004B. A large horizon of vari-textured gabbros was intersected from 2.40 to 47.30 metres, followed by pyroxenites (47.30-53.60 m), felsic arenite-wackes (53.6-66.1 m) and back to gabbroic varieties down to 78.70 metres. These gabbros have a fairly homogeneous texture but their modal percentage varies particularly with respect to the abundance of plagioclase. This variation gives gabbros a sensu-stricto composition

to a pyroxenitic appearance supporting the idea that these mafic and ultramafic intrusive rocks are genetically linked. Moreover, the grain size of these gabbros commonly decreases near their contacts suggesting these finer-grained zones could correspond to chill margins.

From 78.70 down to 201.00 metres, the hole cuts across a large package of ultramafic rocks belonging to the Nancy Dyke and into minor gabbros. These magnesium-rich rocks, varying from olivine-bearing pyroxenites to peridotites, are most commonly devoid of sulphides. The only notable exception is found in the uppermost one metre (around 79 m) of the ultramafic package where there is up t o 2% disseminated pyrrhotite. Pyroxenites mark the lower edge of this ultramafic package (172.30-201.00 m) and the uppermost one metre (78.70-79.70 m). The hole was stopped at a depth of 210 metres in a brecciated rhyolite with 72.51% SiO<sub>2</sub>. This last unit is characterized by stretched centimetric to decametric felsic fragments containing less biotite than the matrix. No mineralized horizon was intersected.

This hole was supposed to be pulsed during the InfiniTEM survey but the dummy probe blocked at a depth of 160 metres.

# GA-12-089

Hole GA-12-089 was planned to test mineralization associated to the MIA showing assuming a north-dipping stratigraphy and a 60° e astern plunge as deduced from field observations. This showing, discovered in 2000, corresponds to disseminated to semi-massive sulphides hosted in a narrow pyroxenitic dyke. This dyke is adjacent to felsic rocks (northern side) and gabbros (southern side). Channel sampling on the MIA showing returned up to 1.07% Ni, 0.61% Cu and 0.93 g/t Pt-Pd over 6.0 metres (Chapdelaine, 2001a). One grab sample taken in massive sulphides graded 14.11% Ni, 0.11% Cu and 7.0 g/t Pt-Pd (Chapdelaine, 2000b). The hole was stopped at 102 metres without hitting any significant mineralization or major ultramafic intervals. Two narrow metric pyroxenitic dykes were intersected at the contact between the upper package of rhyolitic rocks and lower gabbros occurring on the southern side of the MIA trench (55.20-56.75 m and 58.90-60.65 m). These pyroxenitic dykes, which only contain traces of pyrrhotite and pyrite, are thought to be the eastern vertical extension of the MIA ultramafics. The only anomalous interval was obtained in the shallower dyke and graded 0.38% Ni, 0.12% Cu, 0.08 g/t Pt and 0.30 g/t Pd over 0.75 metres (56.00-56.75 m). Very minor sulphides are present in metasedimentary rocks at shallow depth (Photo 3).

A third narrow pyroxenitic dyke was intersected in the gabbroic sequence from 89.00 to 92.30 metres. We observed up to 3% pyrrhotite and traces to 1% pyrite in stringers in the felsic metasediments between 40.05 and 44.80 metres. None of the samples collected in this latter interval returned significant grades.



Photo 3. Minor pyrrhotite stringers and traces of pyrite in metasedimentary rocks at a depth of 40.40 metres (GA-12-089).

#### GA-12-090

This hole is located 50 metres north of MIA showing and tested mineralization right under the trench. The whole lithological package contains as eries of felsic plagioclase-phyric volcanoclastics and metasediments with gabbros and pyroxenites. Felsic rocks have a rhyolitic composition with about 70% SiO<sub>2</sub>. Mafic dykes were crosscut from 4.70 to 5.75 metres, from 67.40 to 74.10 metres, and from 76.10 to 99.00 metres (end of the hole). Two additional dykes with more magnesian compositions, interpreted as the vertical extension of the MIA pyroxenite, exist from 39.40 to 54.10 metres and from 58.10 to 62.35 metres. These latter dykes have compositions typical of pyroxenite and mela-gabbro. Variations between these two lithologies are subtle inside each of these dykes. Mineralization is scarce with locally up to 1% pyrrhotite and pyrite and traces of chalcopyrite. Very minor sulphide stringers also occur. Similar distribution of sulphides is also present in felsic rocks between 34.00 and 35.50 metres. No mineralized horizon with anomalous metal grades was intersected in this hole which suggests that the MIA showing does not exist at shallow depth.

#### GA-12-091

Hole GA-12-091 tested a SQUID conductor interpreted to be located at approximately 175 metres along the drillcore. This first portion of the hole contains plagioclase-phyric felsic tuffs from the bedrock surface (2.10 m) down to 122.30 metres. These rocks, having a rhyolitic composition (71-73% SiO<sub>2</sub>), contains <1% garnet porphyroblasts and traces of disseminated sulphides. They locally have a brecciated texture and contain minor quartz-calcite veinlets. A sub-metric mela-gabbroic dyke crosscuts the felsic unit around 45.85 metres.

#### Lac Gayot Project

The MIA pyroxenite was intersected between 122.30 and 125.90 metres. It consists in a green and medium-grained actinolite-rich rock bearing disseminated pyrrhotite and pyrite in trace amounts. The MgO content is 22%, very close to that of an olivine-bearing pryroxenite. The lower portion of the drillhole consists in a large sequence of gabbros down 210 metres (end of the hole). This gabbroic interval is massive and homogeneous and only locally contains traces of pyrite. Decimetric pyroxenitic dykes have been described in this dominantly mafic sequence.

No mineralized interval was intersected in this hole. The interpreted SQUID conductor estimated at 175 metres remains unexplained. The hole was pulsed during the InfiniTEM survey and no nearby anomaly was interpreted (Dubois, 2012). Overall, along this section, dipping of the lithological assemblage perfectly fits between holes GA-12-089 and GA-12-091, and the MIA showing.

#### GA-12-092

Hole GA-12-092 was positioned on a new section located between Gagnon and Pantoufle showings. It tested the possible lithological link between both showings and the interpreted eastern plunge of the Gagnon mineralization. As expected, gabbros were hit over a wide interval down to 77.70 metres after a 1.90 metre thick overburden. Biotite is only present where the rock has been mylonitized. The hole intersected pyroxenites from 77.70 to 85.50 metres followed by plagioclase-phyric rhyolitic volcaniclastics from 85.50 to 101.40 metres. A large sequence of ultramafic rocks was intersected from 101.40 to 187.80 metres, with the exception of a gabbroic interval from 153.00 to 169.60 metres. This first magnesian-rich package includes magnetic olivine-bearing pyroxenites and peridotites that are thought to be part of the Nancy Dyke. One relatively large mineralized zone was intersected from 101.40 to 115.00 metres. Pyrrhotite, pentlandite and chalcopyrite form unevenly distributed irregular clusters found in both types of ultramafic lithologies (Photos 4 and 5). These partially recrystallized sulphides seem to have a primary magmatic origin. Metal contents, limited to anomalous tenors, grade 0.36% Ni, 0.05% Cu, 0.06 g/t Pt and 0.21 g/t Pd over 13.60 metres. From 125.30 to 127.20 metres, schistosed pyroxenites and olivine-bearing pyroxenites mark the locus of a shear zone that locally contains very minor chalcopyrite clusters. Sampling returned 0.25% Cu over 0.9 metres.

After a rhyolitic horizon between 187.80 and 219.50 metres, the hole intersected massive and homogeneous pyroxenites down to 235.40 metres. That ultramafic dyke intruded a wacke interval with rhyolitic composition down to the end of the hole at 255 metres. Another olivine-bearing pyroxenitic dyke was injected into that biotite-rich sedimentary rock that locally contains 1-2% garnet porphyroblasts and narrow bands with plagioclase phenocrysts.

According to the InfiniTEM borehole survey, there is an anomaly build-up at the end of this hole visible on the X and Y components and on channels 5 to 20. This signature seems to be the same source as the anomaly build-up visible at the end of GA-12-087 (Dubois, 2012). This author recommends extending GA-12-092.



Photo 4. Olivine-bearing pyroxenite from the Gagnon area. Mineralogy includes abundant fibrous tremolite and clinochlore (bluish grey) with common, large and irregular metamorphic hornblende and fine-grained magnetite. Sulphides are common and include pyrrhotite with lesser quantities of violarite, pentlandite and chalcopyrite / Crossed nicols light.



Photo 5. Sulphide cluster including pyrrhotite (light purple-grey), violarite (pale cream with cleavages) and chalcopyrite (greenish yellow) in olivine-bearing pyroxenite. This sample was taken in one of the drillholes done in 2012 in the Gagnon area / Reflected light.

#### Lac Gayot Project

#### GA-12-093

Hole GA-12-093 was positioned 50 metres behind GA-12-092. It also targeted the interpreted eastern plunge of the Gagnon mineralization and helped our understanding of the geological architecture of the area. A large horizon of vari-textured gabbros was intersected from the bedrock surface (2.70 m) down to 125.70 metres. There are very nice evidences of magmatic pulses of several gabbroic compositions with well-preserved chill margins (Photo 6). The Nancy Dyke was hit from 125.70 to 271.80 metres. Its shallowest portion consists in pyroxenites, and very minor gabbros, with disseminated pyrrhotite (up to 1%) from 125.70 to 129.10 metres. The lower contact of this pyroxenitic unit is marked by several centimetric wide zones of biotite schist. Relatively massive and homogeneous peridotites with very minor zones of phlogopiteserpentine schist (153.00-155.20 m and 178.10-178.60 m) were encountered from 129.10 to 212.00 metres. The only mineralized interval in this hole was obtained from 128.70 to 135.70 metres and graded 0.21% Ni, 0.03% Cu, 0.06 g/t Pt and 0.18 g/t Pd over 7.0 metres. At a depth of 212.00 metres, the rock evolves into an olivine-bearing pyroxenite. This latter lithology was intersected down to 294 m (end of hole), except for a gabbroic interval between 237.50 and 253.50 metres and for a metasedimentary horizon between 271.80 and 273.40 metres. No significant mineralization was described in this entire hole as it is limited to disseminated pyrrhotite locally. The hole was supposed to be pulsed but the dummy probe blocked at a depth of 90 metres.



Photo 6. Several gabbroic facies with sharp intrusive contacts (chill margins) between 84.30 and 89.00 metres (GA-12-093).

#### GA-12-094

This hole tested the possible lithological link between Gagnon and Pantoufle showings. It was positioned 55 m etres in front of GA-00-010 that intersected a narrow mineralized horizon grading 0.34% Ni and 0.20 g/t Pd over 0.90 metres in 2000. After a 5.60 metre thick overburden,

#### Lac Gayot Project

hole GA-12-094 crosscut plagioclase-phyric felsic volcanics down to 12.80 metres. That portion of the core is highly broken due to brittle fracturing. A narrow pyroxenitic dyke was intersected from 12.80 to 14.50 metres, followed by fine-grained metasediments having a rhyolitic composition down to 26.95 metres. A 90 centimetre wide diorite-like interval (56% SiO<sub>2</sub>) is present in these metasediments.

A mineralized pyroxenitic horizon, with a varying modal content in serpentinized olivines, was intersected from 26.95 to 30.15 metres and then from 37.30 to 43.70 metres. The upper mineralized interval gradually evolves into medium-grained gabbros hit between 30.15 and 37.30 metres. The ultramafic-hosted mineralization is mainly disseminated and includes 1% pyrrhotite and <1% chalcopyrite. A 30-cm wide irregular lens of massive sulphides containing abundant pyrrhotite and pentlandite with traces of chalcopyrite is present from 26.95 to 27.25 m etres (Photo 7). The mineralized interval returned 1.36% Ni, 0.09% Cu, 0.46 g/t Pt and 1.27 g/t Pd over 3.05 metres (26.95-30.00 m), including 9.57% Ni, 0.55% Cu, 2.04 g/t Pt and 9.52 g/t Pd over 0.30 metres (26.95-27.25 m). This occurrence of massive sulphides strongly supports the hypothesis that more substantial mineralization exists in the area. Moreover, the 30-cm thick massive sulphides yielded 0.45 g/t Rh and 0.58 g/t Ru. Girard (1999) reported the occurrence of several varieties of PGE-rich minerals (eg. palladium-bearing bismuthinite, merenskyite, froodite) in samples from this showing in association with pyrrhotite, pentlandite, bravoite, violarite and chalcopyrite. At 43.70 metres, there is a sharp intrusive contact between the ultramafics and the underlying plagioclase-phyric rhyolitic volcanics. The rest of the lithological sequence down to 120 metres (end of hole) alternates between plagioclasephyric volcanics and metasediments having rhyolitic compositions.



Photo 7. Remobilized massive sulphides (pyrrhotite, pentlandite, chalcopyrite) over 30 centimetres in pyroxenite at 27.10 metres (GA-12-094).

### GA-12-095

Hole GA-12-095, done on a small frozen lake in the Nancy area, was planned to test the vertical extension of two mineralized intervals intersected in GA-03-059 located 50 m etres to the southeast. Hole GA-03-059 intersected 2.15% Ni, 0.22% Cu, 0.23 g/t Pt and 1.21 g/t Pd over 1.30 metres from 200.00 to 201.30 m etres and 0.66% Ni, 0.08% Cu, 0.19 g/t Pt and 0.53 g/t Pd over 7.45 metres from 206.40 to 213.85 metres.

After a 6.50 metre thick overburden, hole GA-12-095 entered into arenites/wackes down to 27.20 metres. These metasediments with an andesitic composition are followed by weakly mineralized gabbros containing less than 2% pyrite and pyrrhotite with traces of chalcopyrite from 27.20 to 40.40 metres. From that depth down to 121.20 metres, the sequence, made up of dacitic and rhyolitic flows, is intruded by three unmineralized pyroxenitic dykes with thicknesses ranging from 3 to 18 metres. The intrusive relationships between the dykes and the host rock are well-preserved with sharp and primary contacts, locally clearly crosscutting foliation of the felsic rocks. Contact metamorphism exists too. Rhyolitic rocks contain both plagioclase and quartz phenocrysts whereas dacitic lithologies only contain plagioclase phenocrysts. This modal composition explains the higher SiO<sub>2</sub> content (>70%) in rhyolites.

A large ultramafic intrusive horizon is present from 121.20 to 216.10 metres with compositions varying between pyroxenites and olivine-bearing pyroxenites. No peridotitic composition with MgO higher than 27% was intersected. Most of this ultramafic unit is devoid of sulphides except for traces of pyrrhotite observed locally. The lower edge of the horizon consists in pyroxenites from 202.00 to 216.10 metres. That horizon is in sharp contact with a heterogeneous breccia composed of felsic angular fragments enclosed in a wacke matrix which is present from 216.10 to 262.00 metres. This breccia, containing traces to locally up to 1% garnet porphyroblasts, is intruded by a 3-metre wide unmineralized pyroxenitic dyke (233.90-236.50 m). It is thought that this breccia has a sedimentary origin but that its fragments are derived from the dismemberment of a volcanic unit. From 243.00 to 247.20 m, there is less than 1% stringers of pyrrhotite and chalcopyrite in the breccia. Anomalous values of 0.2% Cu and 0.25 g/t Pd over 1.0 m etre (243.00-244.00 m) were obtained. This weakly-mineralized interval may be spatially linked with one of the mineralized horizons intersected in GA-03-059. From 262.00 to 312.00 metres (end of hole), the rock sequence alternates between arenites/wackes and plagioclase-phyric felsic volcanics. These rocks have a dacitic composition with  $SiO_2$  between 64 and 67%. The hole was stopped before reaching the NE-SW ultramafic sill.

The borehole survey picked up two off-hole anomalies named EM-12-01 and EM-12-02 located at downhole depths of 230 and 250 metres, respectively. These anomalies could define the same subvertical conductor (EM-06) interpreted from a previous ground InfiniTEM survey realized in 2007 (Malo Lalande, 2007). Both borehole anomalies, visible on channels 10 to 20, have typical signatures of semi-massive to massive sulphide mineralizations. They are likely to define the same subvertical source located between 15 and 20 metres west of the drillhole (Dubois, 2012). This author recommends follow-up drilling on these anomalies.

# GA-12-096

This hole was proposed following preliminary interpretation of the SQUID survey. It targeted a conductor estimated at a depth of 235 metres downhole on the eastern edge of a high mag related to the ultramafics of the Pantoufle showing. After a 5-metre thick overburden, the hole cut across medium-grained gabbros down to 156.75 m etres. This mafic unit intruded foliated and finegrained rhyolites preserved from 48.05 to 51.80 metres and dacites from 53.15 to 59.50 metres. Ultramafic rocks, ranging from pyroxenites to peridotites, are present discontinuously from 156.75 to 221.90 metres. These rocks appear to have intruded plagioclase-phyric rhyolitic volcaniclastics preserved from 167.35 to 172.75 metres, from 185.30 to 199.85 metres and from 221.90 to 235.70 metres. There is a low content in pyrrhotite and chalcopyrite in the lowermost portion of one of the pyroxenitic dykes adjacent to the felsic rocks. Mineralization found as dissemination and in stringers returned 0.11 g/t Pt and 0.19 g/t Pd over 1.0 m etre (166.35-167.35 metres). At 235.70 metres, mafic to intermediate rocks were injected into pale grey arenite-like metasediments down to 285.00 metres. Mineralization occurs from 270.25 t o 322.10 metres in felsic volcanics, diorites and wackes. In this 50-metre thick interval, sulphides commonly reach up to 4-5% and are found disseminated and in millimetric stringers. Pyrite and pyrrhotite are the most common sulphides whereas chalcopyrite is only found in trace amounts. However, no anomalous metal values were obtained. An olivine-bearing pyroxenitic unit, hit between 322.10 and 330.90 metres, intruded the upper wackes and a lower dacitic flow extending down to 352.10 metres (except one narrow gabbroic dyke between 343.25 and 345.35 m). Below 352.10 metres, the hole intersected plagioclase-bearing felsic tuffs and an arenitic interval. This hole was stopped at 375 metres.

There is no explanation for the interpreted SQUID anomaly at 235 metres. The InfiniTEM borehole survey detected one off-hole anomaly (EM-12-03) at a downhole depth of 330 metres visible on c hannels 10 to 20. The signature of the anomaly is typical of massive sulphide mineralization or graphitic unit. The anomaly could be caused by the same conductor (EM-09) interpreted from the 2007 ground InfiniTEM survey (Malo Lalande, 2007). Dubois (2012) recommends follow-up drilling in the vicinity of this hole.

#### GA-12-097

Hole GA-12-097 is located 50 metres behind GA-12-084 in the Nancy-East area. Holes GA-12-083 and GA-12-084, drilled on t he same section, intersected disseminated sulphides in ultramafics over more than 15 metres underneath the Nancy-East showing. After a 4.10-metre thick overburden, hole GA-12-097 intersected many varieties of ultramafic rocks down to 242.60 metres. A first olivine-bearing pyroxenitic interval was crosscut from 4.10 to 44.75 metres followed by pyroxenites from 44.75 to 50.05 metres. The transition between these two units is gradual whereas the lower contact of the pyroxenites is sharp with the plagioclase-phyric tuffs. Gabbroic dykes intrude this tuff sequence and an underlying wacke from 54.00 to 57.30 metres and from 76.60 to 79.30 metres.

The NE-SW ultramafic sill, consisting in peridotites, was intersected from 79.30 to 103.20 metres. Its deeper edge is composed of a one-metre thick pyroxenite in contact with arenites, followed by a gabbroic dyke and plagioclase-bearing tuffs. The Nancy Dyke was continuously intersected from 122.25 to 190.65 metres. Its internal lithological architecture

includes a two-metre thick pyroxenite followed by peridotites (124.00-180.00 m), olivine-bearing pyroxenites (180.00-185.10 m) and pyroxenites (185.10-190.65 m). A sequence of wacke with andesitic to dacitic composition underlies the ultramafic dyke down to 231.15 metres where it is intruded by a partially metasomatized gabbroic dyke. Locally, up to 35% garnet porphyroblasts were described in this mafic lithology in contact with an additional peridotitic unit from 235.25 to 242.05 metres. The deepest lithology hit in this hole stopped at 264.0 metres corresponds to a metasedimentary rock with dacitic to rhyolitic composition.

The mineralized horizon defined in the uppermost part of the Nancy Dyke in holes GA-12-083 and GA-12-084 was not intersected in GA-12-097. It appears that the mineralized zone along this new section is constrained between the surface and a depth intermediate between holes GA-12-084 and GA-12-097. On the other hand, this latter hole confirms that the Nancy Dyke is extensive at depth.

The hole was supposed to be pulsed by the InfiniTEM survey but the dummy probe blocked at a depth of 55 metres.

# GA-12-098

Hole GA-12-098 is located 47 metres in front of GA-12-092 and 53 metres behind GA-01-050 between Gagnon and Pantoufle showings. The hole tested the area between the two showings. As expected, it first entered into a gabbroic unit on the northern side of the ultramafics that were hit at 36.70 metres. At that depth, gabbros gradually evolve into pyroxenites (36.70-43.50 m) injected into plagioclase-phyric rhyolitic tuffs (43.50-64.55 m).

The eastern extension of the Nancy Dyke was hit from 64.55 to 90.7 metres. These ultramafics include, from top to bottom, olivine-bearing pyroxenites (64.55-69.00 m), peridotites (69.00-79.00 m) and olivine-bearing pyroxenites (79.00-90.70 m). A weakly-mineralized zone, containing 2% pyrrhotite and traces of chalcopyrite, is present from 64.55 to 79.00 metres. Mineralization occurs mostly as stringers and also as blebs. Photo 8 shows the most important veinlet of the interval containing pyrrhotite, pentlandite and chalcopyrite at the contact between ultramafics and the upper felsic sequence. Assay results are 0.52% Ni, 0.07% Cu, 0.12 g/t Pt and 0.35 g/t Pd over 14.45 metres.

Following this large ultramafic unit, the hole cut across gabbros (90.70-103.40 m), dacites (103.40-105.05 m), pyroxenites (105.05-106.35 m) and wackes (106.35-113.50 m). A second significant ultramafic package is present from 113.50 to 142.85 metres. Both contacts with the host rock are sharp whereas the contact between the upper olivine-bearing pyroxenites (113.50-132.90 m) and the lower pyroxenites (132.90-142.85 m) is transitional. The final lithology hit by this hole corresponds to rhyolitic rocks with variable amounts of plagioclase phenocrysts and rare garnet porphyroblasts. This unit may also have a sedimentary origin. The hole was stopped at 183 metres.



Photo 8. Stringer composed of pyrrhotite, pentlandite and chalcopyrite (remobilized sulphides) at the contact between plagioclase-phyric rhyolitic volcanics and olivine-bearing pyroxenites at 64.40 metres (GA-12-098).

#### GA-12-099

This hole was designed to test a SQUID target under the Gayot showing. The expected conductor was estimated at a downhole depth of 175 metres. After a 2.30-metre thick overburden, the hole intersected a series of ultramafic and gabbroic horizons in a package of plagioclase-phyric felsic volcaniclastics, rhyolites and wackes interpreted as the host-rock to the mafic-ultramafic intrusions. Most of these latter dykes are limited to a thickness of a few metres to a maximum of approximately 10 metres. A heterogeneous interval comprised between 169.00 and 213.80 metres includes a series of mafic and ultramafic lithologies without any felsic host-rock. The ultramafic components in this entire hole include pyroxenites, olivine-bearing pyroxenites and peridotites with MgO content as high as 37% around 175 metres. One olivine-bearing pyroxenitic horizon, occurring from 184.9 to 194.5 metres, contains traces of pyrrhotite, reaching up t o 1-2% in stringers over one metre. None of the lithologies contain enough sulphides to explain the interpreted SQUID conductor.

The last intersected unit corresponds to plagioclase-phyric felsic volcanics from 213.80 to 274.60 metres (end of the hole). The sulphide content includes 1% pyrite and traces of pyrrhotite and chalcopyrite with local increased quantities (up to 2-3%). These sulphides are mainly found in millimetric stringers and also as disseminations.

The extension of GA-12-099 is recommended by Dubois (2012) because of a possible anomaly build-up at the end of the hole visible on the X and Y components and on channels 5 to 10 of the InfiniTEM borehole survey.

#### Lac Gayot Project

#### GA-12-100

This hole, testing mineralization under the De Champlain showing, is located 52 metres behind GA-03-064. After a 3.70-metre thick overburden, the hole cut across a large and strongly faulted gabbroic unit down to 100.70 metres, except for a horizon of plagioclase-phyric felsic volcanics from 28.30 to 45.90 metres. Hematization is common in both lithologies.

Further down, hole GA-12-100 intersected an ultramafic horizon down to 151.80 metres before ending in metasedimentary rocks at 174.00 metres. Only one single and narrow plagioclase-phyric felsic volcaniclastic interval was preserved (137.05-139.20 m) in this roughly 50-metre thick ultramafic dyke. According to the chemical compositions, the ultramafic interval consists mainly in olivine-bearing pyroxenites with minor pyroxenite and peridotite. Most of the ultramafic interval contains 1-2% disseminated pyrrhotite with chalcopyrite in trace amounts. Four mineralized intervals with anomalous metal grades were obtained. From top to bottom, they returned 0.15% Ni, 0.11% Cu, 0.01 g/t Pt and 0.05 g/t Pd over 7.00 metres (108.00-115.00 m), 0.18% Ni, 0.15% Cu, 0.02 g/t Pt and 0.06 g/t Pd over 9.90 metres (126.00-135.90 m), 0.26% Ni, 0.10% Cu, 0.03 g/t Pt and 0.14 g/t Pd over 8.00 metres (140.00-148.00 m) and 0.16% Ni, 0.09% Cu, 0.02 g/t Pt and 0.08 g/t Pd over 1.80 metres (150.00-151.80 m).

This hole was pulsed with the InfiniTEM system and no nearby anomaly was detected (Dubois, 2012).

#### GA-12-101

This hole, also testing mineralization under the De Champlain showing, is located 50 m etres NNW of GA-03-064. It was designed to test the vertical extension of known mineralization in the northernmost trenches of this area. The location of the hole took into consideration the fact that all structural elements around De Champlain are plunging toward the northwest. After a 2.0-metre thick overburden, the hole cut across four different gabbroic units down to 113.00 metres. These gabbroic dykes only contain trace amounts of pyrrhotite with local chalcopyrite and contain quartz-calcite-hematite veins (Photo 9). This fracture-controlled alteration is more common between 64.20 and 85.60 metres giving a brecciated texture to the gabbros. Only one narrow interval with anomalous values was intersected in a gabbroic to slightly pyroxenitic horizon. The assay results are 0.18% Ni, 0.17% Cu, 0.06 g/t Pt and 0.22 g/t Pd over 2.0 metres (108.00-110.00 m).

The host rock to the mafic intrusives consists in plagioclase-phyric felsic tuffs, pegmatites and foliated medium-grained tonalites. The metamorphic overprint is more important in this part of the property and it is possible that this last unit of the hole may be a recrystallized felsic volcano-sedimentary rock. It seems that the ultramafic horizon we were targeting, if it did exist along this section, may have been obliterated by the pegmatites intersected from 85.60 to 107.90 metres.

# Lac Gayot Project



Photo 9. Veins composed of quartz, calcite and minor hematite fracturing the gabbroic unit at a depth of about 80 metres (GA-12-101).

# ITEM 11 SAMPLING METHOD AND APPROACH

#### 11.1. Sample security, storage and shipment

All samples were collected by Virginia Mines' employees. They were immediately placed in plastic sample bags, tagged and recorded with their unique sample numbers. All samples were initially stored at the camp site. They were not secured in locked facilities; this precaution deemed unnecessary due to the remoteness of the camp. Sealed samples were then placed in shipping bags, which in turn were sealed with fibreglass tape. Shipping bags were then shipped by helicopter to Coulon Camp (another Virginia-owned facility) where they were loaded in a truck for transportation to ALS Chemex sample preparation facility in Val-d'Or. The bags remained sealed until they were opened by the ALS Chemex's staff.

#### **11.2.** Sample preparation and assay procedures

After logging in, the samples were crushed in their entirety at the ALS Chemex preparation laboratory to 70% passing two millimetres (ALS Chemex Procedure CRU-31). From these coarse rejects a sub-sample of 200 t o 250 grams was split and pulverized to 85% passing 75 micrometres (200 mesh - ALS Chemex Procedure PUL-31). From each such pulp, a 100-gram sub-sample was split and shipped to the ALS Chemex laboratory for assay. The remainder of the pulp (nominally 100 t o 150 grams) and the rejects are held at the processing lab for future reference.

Samples were analyzed by the Gole, Au+Scan or WRC package depending on the expected type of mineralization and scientific interest as deduced by the field geologists. The Gole package

includes quantitative detection of Ag, Co, Cu, Ni, Au, Pt, Pd, S, SiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, Fe<sub>2</sub>O<sub>3</sub>, CaO, MgO, Na<sub>2</sub>O, K2O, Cr<sub>2</sub>O<sub>3</sub>, TiO<sub>2</sub>, MnO, P<sub>2</sub>O<sub>5</sub>, SrO, BaO and LOI. The Au+Scan package includes Au, Ag, Al, As, B, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, Ga, Hg, K, La, Mg, Mn, Mo, Na, Ni, P, Pb, S, Sb, Sc, Sr, Th, Ti, Tl, U, V, W and Zn. The WRC package includes SiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, Fe<sub>2</sub>O<sub>3</sub>, CaO, MgO, Na<sub>2</sub>O, K<sub>2</sub>O, Cr<sub>2</sub>O<sub>3</sub>, TiO<sub>2</sub>, MnO, P<sub>2</sub>O<sub>5</sub>, SrO, BaO, LOI, Y, Zr, Zn, Cu, Au. A selection of ten samples were also assayed by the Au+PGE package, which included quantitative detection of Pt, Pd, Au, Os, Ru, Ir and Rh.

For the Gole package, the base metals of economic interest (Ni, Cu, Co) and Ag were determined using ALS Chemex Geochemical Procedure ME-AA61, a four-acid digestion followed by atomic absorption spectrometry (AAS). The upper limit for the base metals determined by this method is 1%. Samples showing higher values were re-assayed using a 0.4-gram aliquot and an AAS finish. The precious metals Au, Pt and Pd were determined by ALS Chemex Geochemical Procedure PGM-ICP23, a 30-gram fire assay followed by ICP-AES finish. Elements of more general and geochemical interest such as Si, Al, Fe, Ca, Mg, Na, K, Cr, Ti, Mn, P, Sr and Ba were determined using ALS Chemex Geochemical Procedure ME-XRF06, a lithium metaborate fusion followed by XRF. Total sulfur was determined using a Leco sulfur analyzer (Geochemical Procedure S-IR08). The sample (0.5 to 5.0 grams) is heated to approximately 1350°C in an induction furnace while passing a stream of oxygen through the sample. Sulfur dioxide released from the sample is measured by an IR detection system and the total sulfur result is provided.

For the Au+Scan package, all elements except Au were determined by ALS Chemex Geochemical Procedure ME-ICP-41, an aqua regia leach followed by ICP-AES. Gold was determined by ALS Chemex Geochemical Procedure Au-AA-23, a 30-gram fire assay followed by AAS.

As for the WRC package, gold was determined using ALS Chemex Geochemical Procedure Au-AA23. Elements Zn and Cu were assayed following ALS Chemex Geochemical Procedure AA45, an aqua regia digestion followed by atomic absorption spectrometry. Elements of more general and geochemical interest such as Si, Al, Fe, Ca, Mg, Na, K, Cr, Ti, Mn, P, Sr and Ba were determined using ALS Chemex Geochemical Procedure ME-XRF06. Elements Y and Zr were determined using ALS Chemex Geochemical Procedure ME-XRF05 which consists in forming a pressed pellet using ground sample powder (20-gram minimum) subsequently analyzed by XRF spectrometry. Loss on ignition was done at 1000°C.

The ten richest samples in nickel were re-assayed for the whole suite of PGE's following ALS Chemex Geochemical Procedure PGM-NAA26. This procedure corresponds to a 30-gram fire assay with nickel sulphide collection and neutron activation analysis. Assays were done by Becquerel Laboratories Inc. in Mississauga (Ontario). Gold is not quantitative by this method.

# **ITEM 12 DATA VERIFICATION**

The two authors were involved in collecting, recording, interpreting and presenting the data in this report and the accompanying maps. Data has been reviewed and checked by the authors and is believed to be accurate.

For a matter of analytical reliability, we introduced a QAQC procedure in our sampling. For each batch of 20 s amples we introduced two standards and one blank and also requested one predetermined quarter split and one duplicate. Four types of standards were used depending on the expected grades in nickel. These standards bought from OREAS include 13b (2,247 ppm Ni), 70p (2,730 ppm Ni), 73a (1.41% Ni) and 74a (3.14% Ni). The blank material corresponds to commercial dolomite bought in a local hardware.

As part of their standard quality control, ALS Chemex introduced duplicate check samples and standards in the samples series. No sample was assayed at other laboratories.

After checking the assay results, we confirm that all metal tenors, except cobalt, reported by ALS Chemex fall inside the tolerance limits described in certificates of analysis of the OREAS standards. Cobalt tenors in our samples appear to be lower than standard values in a few assay certificates. ALS Chemex will re-assay cobalt with problematic tenors shortly after the writing of this report. However, the low cobalt tenors do not have any effect on the evaluation of the Ni-Cu-PGE mineralization on this project.

# ITEM 13 MINERAL PROCESSING AND METALLURGICAL TESTING

This section is not applicable to this report.

# **ITEM 14 MINERAL RESOURCE ESTIMATES**

This section is not applicable to this report.

# **ITEM 23 ADJACENT PROPERTIES**

This section is not applicable to this report.

# **ITEM 24 OTHER RELEVANT DATA AND INFORMATION**

This section is not applicable to this report.

# **ITEM 25 INTERPRETATION AND CONCLUSIONS**

The 20 new drillholes allowed refining our interpretation at depth and laterally in the Nancy-Nancy-East, MIA-Gagnon-Pantoufle, Gayot and De Champlain areas. All new drillhole crosssections are included in figures 8 to 21 of this report. The naming of each section refers to computer-drawn gridlines shown in figures 4 to 7 and does not match the grids made on the field in 1999 and 2000. We decided to define the cross-sections based on the hypothetical grids for two reasons: the old grid is now difficult to see on the ground and its position appears to be inaccurate with uncertainties as high as 45 metres compared to GPS positioning. Interpretations will be discussed in four separate parts referring to the Nancy-Nancy-East, MIA-Gagnon-Pantoufle, Gayot and De Champlain showings.

# Nancy and Nancy-East showings

Five new sections were elaborated taking into account the seven drillholes completed in this area in 2012 together with relogging and additional sampling of previous holes. Three significant ultramafic entities are present and are, herein, informally named the northern Nancy Dyke, the southern Nancy Dyke and the NE-SW sill. These magnesium-rich rocks intruded a sequence of mostly intermediate volcaniclastics and metasedimentary rocks with minor dacitic components (rhyolitic lithologies are scarce at Nancy). Common primary igneous contacts between ultramafics and the host package are preserved; otherwise these contacts correspond to relatively narrow shear zones made up of biotite with more or less phlogopite, talc, carbonates and serpentine (lizardite and antigorite).

The metamorphic overprint obliterated most of the original features making it d ifficult to determine unequivocally the true nature of the host-rock sequence which appears to contain abundant volcaniclastics and epiclastics. Some volcanic flows may be present as shown on the section. Brecciated felsic rocks and lithic tuffs were described but the close-association with east-west mylonitic corridors also suggests tectonic brecciation for these lithologies.

As a general statement, it appears that mineralization is by far more important in the southern flank of the Nancy Dyke. At least two mineralization styles are described. One of them corresponds to disseminated sulphides (pyrrhotite, pentlandite, violarite, chalcopyrite) in peridotites, olivine-bearing pyroxenites and sensu-stricto pyroxenites. These sulphide occurrences are commonly found from the surface down to a vertical depth of about 100 metres along several sections. Northwest-southeast brittle faults, dissecting the magnetic features into several blocks, may be responsible for the local absence of such mineralizations (eg. Section Nancy 5+15 E). The best of these intervals graded up to 0.75% Ni, 0.11% Cu, 0.15 g/t Pt and 0.51 g/t Pd over 20.60 metres with sub-intervals higher than 1% Ni over several metres (GA-12-085). Photo 10 shows an example of the sulphidic assemblage in peridotite from GA-12-083. Surprisingly, the low sulfur content of these rocks (<1.8%) suggests that sulphides are extremely rich in metals. Pentlandite inclusions (partially transformed to violarite) in chromite confirm that at least part of the sulphide precipitation occurred prior to the crystallisation of the chromiumrich oxide (Photo 11). The other style of mineralization corresponds to disseminated to semimassive sulphides commonly hosted in pyroxenite containing variable amounts of serpentinized olivines. The intermediate to felsic host-rock very locally contain such mineralization with grades up to 1.99% Ni, 0.49% Cu, 0.29 g/t Pd and 12.33 g/t Pd over 4.00 metres (GA-00-028). Our

#### Lac Gayot Project

understanding of the geological architecture around Nancy showing is that the western part of the southern flank of the Nancy Dyke is a shallow feature less than 100 metres deep. However, around Nancy-East and further east, drilling confirms that the ultramafic dyke is at least 200 metres deep. Its surface width is also larger (between 100 and 150 metres).

The vertical extension of the northern flank of the Nancy Dyke below the elliptical high magnetic feature, just northeast of the Nancy showing, is explained by the large package of olivine-bearing pyroxenite and pyroxenite intersected down to a vertical depth of 150 metres. Gabbroic dykes crosscut the ultramafic sill on several sections and may have been injected along a fault zone. Unfortunately, this ultramafic horizon lacks significant mineralization. Only one of the sections in this report (Nancy 4+75 E) shows sub-economic intervals in olivine-bearing pyroxenite crosscut by holes GA-02-052 and GA-03-061. These intervals could be the lateral extensions of the wider mineralized zones found at surface in the Nancy trenches. If this hypothesis is confirmed by latter work, it could prove that the northern and southern flanks of the Nancy Dyke are part of the same feature.

The NW-SE ultramafic sill, composed of a central peridottie and bordered by pyroxenite with more or less serpentinized olivines, is now fairly well constrained by drillholes. No significant mineralization has ever been obtained in this rather linear sill that, we think, is crosscut by the Nancy Dyke.



Photo 10. Large pentlandite-violarite assemblage containing chromite inclusions in mineralized peridotite at a depth of 45.40 metres. (GA-12-083) / Reflected light.

# Lac Gayot Project



Photo 11. Pyrrhotite-violarite inclusion in a chromite crystal in mineralized peridotite at a depth of 45.40 metres. (GA-12-083) / Reflected light.

#### MIA, Gagnon and Pantoufle showings

Six new sections were drawn for those that included new drillholes. Two of these sections give the first-ever vertical geological interpretation below the MIA showing. All three holes drilled towards the southeast under that showing intersected a sequence of intermediate to felsic metasediments and volcanics before penetrating into a narrow pyroxenitic sill interpreted as the MIA ultramafics. Only one of these holes encountered minor mineralization (0.38% Ni, 0.12% Cu, 0.08 g/t Pt and 0.30 g/t Pd over 0.75 metre) considered as the extension of the MIA showing located some 45 metres upwards. These drillholes ended in a large package of varitextured gabbros as was suggested by surficial mapping.

These gabbros, locally injected by narrow pyroxenitic sills, are ubiquitously present on all crosssections referring to the Gagnon and Pantoufle showings. The mafic package is then followed by the intermediate to felsic volcano-sedimentary rocks into which the Nancy Dyke was intruded. In this part of the property, felsic rocks commonly contain plagioclase and quartz phenocrysts and more than 70% SiO<sub>2</sub> suggesting these lithologies have a rhyolitic rather than a dacitic composition, the latter variety being more typical of the Nancy area.

Lithologies of the Nancy Dyke around Gagnon showing include a large outer pyroxenitic shell with variable amounts of serpentinized olivines surrounding a massive peridotitic inner portion. As of now, along drill cross-sections, mineralization is only known in pyroxenites and olivine-bearing pyroxenites of the upper part of the dyke. This situation contrasts with the mineralization style in the Nancy area which contains significant disseminated sulphides in shallow peridotites. One occurrence of sulphide-bearing peridotites is known at Gagnon, just around the collar of GA-00-011.

Overall, metal grades at Gagnon are lower than those obtained at Nancy despite the presence of intervals that returned 0.61% Ni, 0.11% Cu, 0.15 g/t Pt and 0.47 g/t Pd over 19.40 metres (GA-00-019). Interestingly, hole GA-12-094 hit a 30-centimetre thick massive sulphide lens hosted in weakly mineralized pyroxenites at shallow depth between Gagnon and Pantoufle showings. The sample taken in this interval, composed of 50% massive sulphides and 50% pyroxenite with disseminated sulphides, returned 9.57% Ni, 0.55% Cu, 2.04 g/t Pt and 9.52 g/t Pd over 0.30 metres. Recalculation to 100% sulphides gives nickel tenors higher than 20% and palladium tenors above 20 g/t. The presence of this minor, but metal-rich, lens of massive sulphides strongly supports the idea that more significant mineralized horizons have yet to be discovered in this portion of the property.

The addition of three new holes behind GA-01-050 along section 3+90 E confirms the eastward extension of the Nancy Dyke and the link between Gagnon and Pantoufle showings. The dyke apparently widens with depth, dips moderately towards the north and plunges at a low angle towards the east. Mineralized horizons are unknown below 120 metres. Gabbroic and hornblende-phyric dioritic dykes crosscut the ultramafic rocks in all sections. They were described in close proximity to shear zones and mylonitized contacts.

Hole GA-12-096 done along the easternmost section, east of Pantoufle showing, only intersected minor ultramafic horizons. Common stringers of pyrite and pyrrhotite with traces of chalcopyrite in felsic and intermediate volcano-sedimentary rocks and in a dioritic dyke are present from 270.25 to 322.10 metres. This sulphide-bearing horizon is deeper than the SQUID-detected EM anomaly which was estimated at a depth of 235 metres downhole. No base or precious metal values were obtained in what appears to be a mineralization style unlinked to Ni-Cu-PGE occurrences.

# **Gayot showing**

The three holes done in 1999 to test mineralization under the Gayot showing were stopped immediately after penetrating the targeted ultramafic unit. At that time, it was assumed that the favourable horizon was restricted to the northern edge of these ultramafics as it was observed at surface. None of these holes intersected mineralization. In 2012, we tested a possible SQUID anomaly at a downhole depth of 175 m etres with GA-12-099. At that depth, we hit highly tectonized and barren ultramafics which could be the vertical extension of the targeted unit. The hole was pushed even further deep to make sure that the whole ultramafic package was crosscut. The magnetic features in the vicinity of this showing show NW-SE breaks (brittle faults) and possible folding adding to the complexity of the 3D geological architecture. At the actual state of knowledge, it appears that the main ultramafic horizon hosting the Gayot showing suffered from tectonic events and may be structurally disrupted at depth.

# **De Champlain showing**

With only one drillhole testing the De Champlain showing since the existence of the project, we needed to get more information on the vertical extension of known mineralization. Two holes were added assuming a northwest-trending and near-vertical dip of the units together with a moderately-plunging mineral lineation towards northwest. The two interpreted cross-sections are characterized by a large and shallow gabbroic unit containing slivers of volcano-sedimentary

rocks. These gabbros are followed by a nearly 50-metre thick olivine-bearing pyroxenitic body containing very fine-grained and disseminated sulphides (pyrrhotite, pentlandite, chalcopyrite). The sulphide occurrences spanned over several metres produced Ni and Cu anomalous intervals (eg. GA-03-064 and GA-12-100). Felsic volcano-sedimentary rocks form the structural footwall of the ultramafics. Multi-phased dioritic dykes intruded the whole lithological package, even crosscutting mineralized intervals.

Surficial mapping and drilling revealed the presence of late coarse-grained felsic intrusions (tonalite and pegmatite) in this part of the property. Such types of intrusions, unknown south of the Baseline showing, crosscut potentially interesting ultramafics at De Champlain as shown on cross-section 12+40 N.

# **ITEM 26 RECOMMENDATIONS**

The winter 2012 drilling and geophysical programs helped us to better understand the geological architecture of the ultramafic horizons and nearby lithologies in several parts of the Lac Gayot Property. Significant mineralized intervals have been extended laterally and at depth in areas such as Nancy-East, Gagnon and De Champlain. However, our work seems to confirm that there is no de ep extension of mineralization at MIA and that ultramafics below Nancy and Gayot showings have a limited vertical extension diminishing the potential of finding additional mineralization.

Before proceeding to additional drilling, we need to review the SQUID data and optimize our interpretation. Were the technical parameters optimal for the types of mineralization where the survey was completed? Was this type of geophysical survey the best that we could use? Once we have answers to these questions, we could think about trying another ground EM method, if necessary. If we do so, we could test known showings with different geophysical configurations, optimizing the instrument response before applying it at the scale of the property.

The list of comments below resumes why more drilling is needed on the property:

- ✓ Unexplained SQUID anomalies still need to be tested;
- ✓ Off-hole anomalies and anomaly build-ups at the end of holes, varying from moderate to good quality conductors, were detected by the borehole InfiniTEM survey in the Nancy, Gagnon, Pantoufle and Gayot areas;
- ✓ Recent drilling results and new interpretation of cross-sections confirm possible extension of some mineralized horizons;
- ✓ Several known Ni-Cu-PGE occurrences have not been drill-tested since reassessment of the geological interpretation done after 2008 (eg. L, Area 03, Baseline, Western Area);
- ✓ Ultimately, we should commit ourselves to evaluate potential at depths greater than 200 metres along the Nancy Dyke. One of the hypotheses for the pinching out of ultramafic horizons at depths is related to vertical tectonic boudinage. Such deformation style is known horizontally and could be present vertically. Other ultramafic bodies tectonized lithons according to Hronsky (2008) could well be hidden below shallower ones.

## **ITEM 27 REFERENCES**

Barnes, S. J., 2006, Komatiite-hosted sulphide deposits: geology, geochemistry, and genesis. *In* Nickel deposits of the Yilgarn Craton: geology, geochemistry, and geophysics applied to exploration. *Edited by* Barnes, S.J. Special Publication Number 13, Society of Economic Geologists, pp. 51-97.

Chapdelaine, M., 1999. Projet Gayot, Rapport technique des travaux, été 1998. Mines d'Or Virginia, 7 p.

Chapdelaine, M., 2000a. Rapport des travaux d'automne 1999, Projet Gayot. Mines d'Or Virginia, 13 p.

Chapdelaine, M., 2000b. Progress report on Summer and Fall 2000 Mapping and Geophysical Program, Project Gayot. Virginia Gold Mines, 26 p.

Chapdelaine, M., 2001a. Report on Summer 2001 Trenching and geological mapping program. Virginia Gold Mines, 28 p.

Chapdelaine, M., 2001b. Report on Fall 2000 Drilling and geophysical program. Virginia Gold Mines, 22 p.

Chapdelaine, M., 2002a. Report on Winter 2002 Drilling and Geophysical Program. Virginia Gold Mines, 26 p.

Chapdelaine, M., 2002b, Report on Summer 2002 geological reconnaissance program, Gayot project (Technical Report). Virginia Gold Mines, 23 p.

Chapdelaine, M., and Archer, P., 2003, Technical Report and Recommendations, Winter 2003 Drilling Program, Gayot Project, Québec. Mines d'Or Virginia and BHP Billiton, 26 p.

Dubois, M., 2012. Logistics and Interpretation Report on a Borehole InfiniTEM Survey (12N017), Lac Gayot Project, by Abitibi Geophysics, 17 p.

Girard, R., 1999. Minéragraphie et pétrographie d'échantillons provenant des indices Gagnon, Gayot et autres, Propriété Gayot, Territoire du Nunavik (Internal Report). IOS Services Géoscientifiques. 105 p.

Gosselin, C., and Simard, M., 2000, Géologie de la region du Lac Gayot (SNRC 23M). Ministère des Ressources naturelles, Québec. RG 2000-03, 28 p.

Hronsky, J., 2008. R eport on Field Visit to NiS Project, Quebec (Internal Memorandum). Western Mining Services. 16 p.

Huot, F., Chapdelaine, M. and Archer, P., 2003, T echnical report and recommendations; Reconnaissance program, Gayot project, Québec. Mines d'Or Virginia and BHP Billiton, 24 p.

Huot, F., Chapdelaine, M. and Archer, P., 2004, Technical report and recommendations; Winter 2004 drilling program, Gayot project, Québec. Mines d'Or Virginia and BHP Billiton, 33 p.

Huot, F., Lafrance, I. and Chartrand, C., 2008. Technical Report and Recommendations 2008; Reconnaissance Program, Lac Gayot Property, Québec. Virginia Mines and Breakwater Resources, 24 p.

Kuttai, J., 2012. Geophysical Report on a HT Squid Moving-Loop TEM Survey, Lac Gayot, by Discovery Int'l Geophysics Inc., 36 p.

Lafrance, I., 2001. Caractérisation des minéralisations nickélifères associées aux komatiites de la Ceinture archéenne de Vénus, Nouveau-Québec. Mémoire de maîtrise, Université du Québec à Montréal, Montréal (Québec), 185 p.

Malo Lalande, C., 2007. Rapport d'interprétation sur un levé InfiniTEM de surface (07N015), Projet Lac Gayot, par Abitibi Géophysique inc., 12 p.

Savard, M., 2000. Technical Report on the Permit 1423, Makamikex Property (Fall 2000). Mines d'Or Virginia, 5 p.

Savard, M., et Chapdelaine, M., 1999. Projet Gayot, Rapport technique des travaux, été 1999. Mines d'Or Virginia, 6 p.

Simard, M., Labbé, J.Y., Maurice, C., Lacoste, P., Leclair, A., Boily, M., 2008, S ynthèse du nord-est de la Province du Supérieur. Ministère des Ressouces naturelles, Québec. MM 2008-02, 196 p.

Sharma, K.N.M., 1996, Légende générale de la carte géologique, édition revue et augmentée (MB 96-28). Ministère des Ressources naturelles du Québec, 89 p.

# **DATE AND SIGNATURE PAGES**

# **CERTIFICATE OF QUALIFICATIONS**

I, François Huot, resident at 4174 rue D'Estrées, Québec, Qc, G2A 3P2, hereby certify that:

- I am presently employed as a Senior Project Geologist with Virginia Mines Inc., 300 St-Paul, Suite 200, Québec, Qc, G1K 7R1.
- I received a Ph.D. in Marine Geosciences from the Université de Bretagne Occidentale (Brest, France) in 2001, a M.Sc. in Earth Sciences from Laval University (Québec) in 1997, and a B.Sc. in Geology in 1994 from Laval University (Québec).
- I have been working as a mineral exploration geologist since 1994.
- I am a professional geologist presently registered to the board of the Ordre des Géologues du Québec, permit number 502.
- I am a qualified person with respect to the Lac Gayot Project in accordance with section 5.1 of the National Instrument 43-101.
- I have been working on the property during summers 1998 and 2003, winter 2004 and more recently from during summer 2008.
- I am responsible for writing the present technical report in collaboration with the other author, utilizing proprietary exploration data generated by Virginia Mines Inc. and information from various authors and sources as summarized in the reference section of this report.
- I am not aware of any missing information or changes, which would have caused the present report to be misleading.
- I do not fulfill the requirements set out in section 5.3 of the National Instrument 43-101 for an « independant qualified person » relative to the issuer being a direct employee of Virginia Mines Inc.
- I have been involved in the Lac Gayot Project in 1998, 2003-2004, and since January 2008.
- I read and used the National Instrument 43-101 and the Form 43-101A1 to make the present report in accordance with their specifications and terminology.

Dated in Québec, Qc, this 16<sup>th</sup> day of January 2013.

"François Huot"

François Huot, Ph.D., P. Géo.

# **CERTIFICATE OF QUALIFICATIONS**

I, Pascal Simard, resident at 1492, 4e Avenue, Québec, Qc, G1J 3B8, hereby certify that:

- I am presently a Junior Geological engineer with Virginia Mines Inc., 300 St-Paul, Suite 200, Québec, Qc, G1K 7R1.
- I received a B.Sc. in Geological engineering from the Université du Québec à Chicoutimi in 2008.
- I have been working as a junior geological engineer in mineral exploration since June 2008.
- I am an active junior professional geological engineer presently registered to the board of the Ordre des Ingénieurs du Québec, permit number 5002937.
- I am not a qualified person with respect to the Lac Gayot Project in accordance with section 5.1 of the National Instrument 43-101.
- I have worked on the property during summer 2011.
- In collaboration with the other author, I have worked on the database and maps of this report utilizing proprietary exploration data generated by Virginia Mines Inc. and information from various authors and sources as summarized in the reference section of this report.
- I am not aware of any missing information or change, which would have caused the present report to be misleading.
- I do not fulfill the requirements set out in section 5.3 of the National Instrument 43-101 for an «independant qualified person» relative to the issuer being a direct employee of Virginia Mines Inc.
- I have been involved in the Lac Gayot Project since June 2011.
- I read and used the National Instrument 43-101 and the Form 43-101A1 to make the present report in accordance with their specifications and terminology.

Dated in Québec, Qc, this 16<sup>th</sup> day of January 2013.

"Pascal Simard"

Pascal Simard, Jr. Eng.

# **ILLUSTRATIONS**

•

- \_



Figure 1. Location of the Lac Gayot Property.







e persona a consecuta da consecu Nomenta da consecuta Nomenta da consecuta da consecuta







ار ا<sup>مری</sup>ک والد کا ماده شده امریک از مادار از معاد کارد ک<sup>رد</sup> کار میرود در می در است. امریکی کار د

9





an di sana di s Sana di sana di



ψk









ę





10-

nan Marya

![](_page_60_Figure_0.jpeg)

₩

350mRL

300mRL

162 500mM.

ú

![](_page_60_Figure_1.jpeg)

162 300mN

è

365.400mE

162.350mN

ò

162.250mN

à

365 350mE 6.162 400mN

162 450mN

Intermediate to Felsic Volcano-Sedimentary Rock [V-S]

162.200mN.

ŵ

. 350mRI

irgissa hitnes I KöhlM Läs (Sayot Project Bertian Glagsion 2+42 E Figura 15

![](_page_61_Figure_0.jpeg)

![](_page_62_Figure_0.jpeg)

![](_page_63_Figure_0.jpeg)

 $\frac{1}{2}$ 

![](_page_64_Figure_0.jpeg)

and a second second

te per l'ante anna 1996 an

![](_page_65_Figure_0.jpeg)

![](_page_66_Figure_0.jpeg)

# **APPENDICES I, II AND III**

· · · · ·

-

# AVAILABLE UPON REQUEST SUBMITTED TO VIRGINIA MINES INC.

info@minesvirginia.com