

# **Title Page**

**COMPANY: MAYNE MINBERALS INC.**

## **TECHNICAL REPORT ON THE BELL GRAPHITE PROJECT**

**NATIONAL INSTRUMENT  
FORM 43-101F1 TECHNICAL REPORT**

**PROJECT: BELL GRAPHITE PROJECT**

**LOCATION: BUCKINGHAM, QUEBEC, CANADA  
SNRC: 31G11**

**QUALIFIED PERSON: CHRISTIAN DEROSIER P. Geo, M.Sc., D.Sc.**

**DATE: FEBRUARY 15th, 2021**

**EFFECTIVE DATE: FEBRUARY 15th, 2021**

## Signature Page

DATE: **FEBRUARY 15th, 2021**



**Christian Derosier  
D.Sc. Geologist**

# TECHNICAL REPORT ON THE BELL GRAPHITE PROJECT

BUCKINGHAM AREA, QUEBEC  
CANADA

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FEBRUARY 15th, 2021

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# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

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# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 1: SUMMARY

On January 1st, 2021, Mr Robert Rosenblat, Chairman and CEO of Mayne Minerals inc.. (MMI), commissioned **Christian Derosier Géologue-Conseil inc.** to prepare an independent, NI 43-101 compliant technical report (Report) on its 100% owned Bell Graphite Project (Project), located in the municipalities of l'Ange-Gardien, Masson and Lochaber, Buckingham area, Quebec, Canada.

The Author visited the Project area at multiple times and supervised the 2017 diamond drilling program which took place in April and May 2017 and in September 2017.

The Bell Graphite Property is located 135 km west of Montreal, Quebec, and 30 km northeast of Ottawa, Ontario; immediately east of the town of Buckingham. It consists of 29 CDCs (claims désigné sur carte) or map staked claim designated cells, for a total area of 1,745.24 ha.

Historically, the Bell Graphite Mine produced about 6,700 tons of graphite between 1906 and 1912 while the New Québec Mine produced 2,500 tons of graphite from 1912 to 1920. Exploration drilling using a standard drill machine with EXT core size, was performed in the early fifties for a total length of 1,497.02 m. This drilling campaign defined the downward extension of the Bell graphite deposit.

A historical mineral estimation demonstrated the existence of 185 100 tons of mineral resources grading 9.4% graphite (1952, not compliant with NI 43-101). The mineralization is found at a depth of less than 80 m, with an average mining width of 4.2 m. Frobisher Ltd. concluded that sufficient ore of commercial grade was present to support an operation on the scale of 100 to 150 tons per day for at least a decade.

The property is found in the Central Metasedimentary Belt of the Grenville Geological Province, with regional metamorphism reaching upper amphibolite grade and granulite facies locally. The Buckingham Property is mostly underlain by different types of paragneisses intermixed with large bands and lenses of marble and quartzite with a SW-NE to NS orientation.

Known graphite mineralization consist of multiple narrow bands trending NNE (020°). At the Bell Mine open stopes, these bands occur in paragneisses in association with disseminated pyrite. They were found within a working thickness from 1 to 5 m and have been followed over a strike length of 660 m. Its extension at depth has been demonstrated by drilling. At the New Quebec Graphite mine, in smaller pits, the graphite was found in association with a grey calcite-biotite gneiss, devoid of sulfides. One of the pit follows a one metre thick highly schistozed zone, enriched with flaky graphite over a 10 m strike length and is well exposed at its northern end.

The digitalization of the diamond drill records permits now to draw different types of sections, make 3D pictures of the graphite deposit and better plan the next exploration and development phases.

The digitalization has highlighted the lack of information concerning the hole deviation, the core recovery, the angles of bedding and structures and some interpretation and sampling mistakes.

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## ITEM 1: SUMMARY (cont.)

The 2017 Drilling program totaled 1,338 m in length. Eleven holes were bored to confirm the lateral and deep extensions of the graphite deposit and in addition to check the assay results of the previous drill holes. The 2017 drill holes were bored with the NQ core size and down hole surveys were conducted using a Reflex tool. Core logging, sampling preparation, transportation and sample assaying were made in conformity with NI-43-101. Bulk density and RQD were verified and reported. Two Standards and one Blank were inserted at random in order to insure the Quality Control and Quality Assurance. The Laboratory Assay Controls and Duplicates were verified. The original DDH entries were adjusted to compensate for different location and grade deficiencies. Results were considered as adequate.

The Carbon content of the previous holes has been adjusted because, at the time, the assays did not make a difference between organic, carbonate and graphitic carbon.

Adjacent 2017 and 1952 holes were compared and adjusted. The modeling of the mineralization has been made in 3D and new cross-sections have been built. It was determined that the graphite bearing system is oriented at 200° with a dip of -60°. The February 2021 drilling program showed that the mineralization does not extend north of the Brady Creek.

After several methodology tests, it has been determined that the Inverse Distance Weighting (IDW) interpolation was the most adequate method to evaluate the resources. Several low cut-off grades were chosen and applied for the block model. With a prioritization of the grade and considering the optimization of the continuity of the mineralized zone, the low cut-off grade of 3.5% Cgp was retained. This permits to calculate a mineral resource of 1 950 000 tonnes averaging 5.1% Cgp. This scenario is also identified as the base case for an Indicated Mineral Resource.

The author considers that the Bell Graphite Project is a reasonable prospect for an eventual economic extraction. The zone is heavily transposed but there is a good continuity even at high cut-off grade. However, the dip and plunge of the graphite deposit as well as the topography are not very favorable for a larger open pit extraction.

Based on results obtained during the 2017 drilling program and the 2013-2018 geophysical surveys on the Rosenblat' claims, **C.D.G.C.** recommends an exploration program on the Bell property as well as a follow-up drill program using NQ calibre drills to test for along strike and down dip extension to a depth of 200 m.

At this stage, it is very important to survey meticulously all the old workings and have some surveyed bench marks established around the main mineral zones for a better control of the coordinates and elevations. It is also recommended to dig several trenches across the recently discovered mineralized zones situated West of the main zone and to check the best conductive anomalies located in the eastern part of the property. This will economically valorize the known resource and will permit to extract several little bulk samples.

The total cost for the 2021 recommended drilling and exploration program is estimated at CAD\$ 600,000.00.



# MAYNE MINERALS INC.



FIGURE No 1: LOCATION OF THE BELL GRAPHITE MINING PROPERTY

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 2: INTRODUCTION

On January 1st, 2021, Mr. Robert Rosenblat, Chairman & CEO of **MAYNE MINERALS inc.** (“**MMI**”), from Vancouver, British Columbia, Canada, mandated **Christian Derosier Geologue-Conseil Inc.** (“**C.D.G.C.**”) to undertake a Technical Report on the Bell Graphite mining property located in the Buckingham area, Outaouais region of Quebec, Canada (**Figure No 1**).

### 2.1 Scope of Work

In 2016 and 2017, **Saint Jean Carbon inc.** (“**SJL**”) executed some exploration work on the Bell Graphite mining property located approximately 2.5 km east of the town of Buckingham. The Company performed an helicopter-borne geophysical survey, a ground geophysical survey, some rock sampling and a diamond drilling program on the Site. This last was preceded by the digitalization of all previous drill holes. Since the acquisition of the property, **SJL** had commissioned the supervision of the work to **C.D.G.C.** under instructions of representatives of **SJL**.

At that time, **C.D.G.C.** was retained to complete a Technical Report in compliance with National Instrument 43-101 of the Canadian Securities Administrators (“**NI 43-101**”) and the guidelines in Form 43-101 F1. The Author is a “Qualified Person” within the meaning of National Instrument 43-101.

It is intended that this report be filed with the British Columbia Securities Commission, the Canadian Stock Exchange administration as a fulfillment for a Qualified Transaction, and the Ministère de l'Énergie et des Ressources naturelles du Québec for assessment work.

The scope of services commissioned by **Mayne Minerals inc.** included the following terms:

- \* Examination of all previous work executed on the property;
- \* Locate on map the previous exploration work;
- \* Compilation and plan drafting of all the geological information;
- \* Review the past mineral resource estimation delineated by the previous and recent drilling programs;
- \* Propose an exploration program that will permit to better delineate and qualify the mineral resources;
- \* The exploration program will also permit to investigate the geophysical anomalies recorded outside the Bell and New Quebec mineral deposits.

**C.D.G.C. Inc.** reviewed some company reports provided by **SJL** and **GeoMega** as listed in Item 27 and consulted the files of the **MERNQ** in Quebec City.

**C.D.G.C. Inc.** started to work on the Bell Graphite mining project on June 1st, 2016 and Christian Derosier P.Geo., M.Sc., D.Sc. visited the property for the first time at this date. His last visit of the site was made on February 14th, 2021.

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 2: INTRODUCTION (cont.)

### 2.2 Terms and Definitions

“**MMP**” refers to Mayne Minerals inc. from Vancouver, BC, Canada;

“**SJL**” refers to **SAINT JEAN CARBON INC.** from Calgary, Alberta, Canada;

“**GEOMEGA** “ refers to **GEOMEGA RESOURCES INC.** from St-Lambert, Québec, Canada;

“**MERNQ.**” refers to the **Ministère de l'Énergie et des Ressources naturelles du Québec**;

“**C.D.G.C.**” refers to **Christian Derosier Géologue-Conseil Inc.** from Saint-Lazare, Quebec, Canada.

### 2.3 Units and numerical system

Units in the **C.D.G.C. Inc.** 's report are in metric units unless as otherwise specified.

Precious metal content is reported in grams of metal per metric tonne (g/T Au or Ag) except as otherwise stated. Tonnage figures are dry, metric tonnes unless otherwise stated. Reference to base metals reported in weight percent or in parts per million (ppm) metal. Graphite or Organic Carbon (Cg) content is expressed in weight percent.

The weight, the measurement as well as the currency convention which is used in the course of this study is in conformity with the nomenclature of the international system (IS).

The cartographic reference system used for local mapping and drawing is Universal Transverse Mercator / 3° Gauss-Kruger zone 18T. SNRC: 31G11 0101. Datum: UTM NAD 83 zone 18, IGRF-12(2015).

Geoid Elevation: -31.960m, CGG2013a

Magnetic Declination: 14° 47.10' W changing by 0° 3.2' E per year.

UTM Grid Declination: 13° 16.44' W.

Old Plant Location: W 75° 21' 56.1" N 45° 36' 01.6" / 471489mE 5049721mN

Ellipsoid Elevation: 111m. Orthometric Elevation: 142.960m

### 2.4 Author Information

Dr. Christian Derosier is a professional geologist who is providing worldwide services in geology and exploration for industrial minerals, precious and base metals since 1969. He has been involved in numerous graphite projects from the exploration through to production in the region from 1988 to 2017 and others in Canada and abroad. He is independent from **Mayne Minerals inc.** and its interests regarding all Project components.

Dr. Christian Derosier is responsible for all Items of this Report.

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 2: INTRODUCTION (cont.)

### 2.5 Statement

The Author believes the information used to prepare the Report and to formulate its conclusions and recommendations is valid and appropriate considering the status of the Project and the Report purpose. The technical data are judged appropriate for producing a NI 43-101 mineral resource/reserve estimate on the Bell Graphite Project.

The Author, Dr. Christian Derosier, by virtue of his technical review of the project's exploration potential, certify that the work program and recommendations presented in the Technical Report, are in accordance with NI 43-101 and CIM technical standards.

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 2: INTRODUCTION (cont.)

**TABLE No 1**

### TABLE OF CONVERSION

#### WEIGHT

1 oz (troy)	=	31.103 grams (g)	1 oz (troy) by short ton (t)	=	34.286 g/T
1 pound (lb)	=	0.454 kg	1 pound (lb)	=	1.215 troy pound
1 short ton (t)	=	0.907 Tonne (T)	1 short ton	=	2,000 pounds (lbs)
1 metric Tonne	=	1,1023 short ton	1 pound	=	16 oz = 0.454 kg
1 pound	=	14.5833 troy ounces			

#### LENGTH

1 inch	=	2.54 cm	1 foot	=	0.3048 m
1 mile	=	1.6093 km	1 mile	=	1,609.3 m
1 metre	=	3.2808 ft			

#### AREA

1 square mile	=	259 hectares	1 square mile	=	640 acres
1 square km	=	247.105 acres	1 acre	=	4,047 sq m
1 sq ft	=	0.0929 sq m	1 sq m	=	0.000247 acre

#### ABBREVIATIONS

g	=	Grams	Kg	=	Kilograms
T	=	Metric Tonne	g/T	=	Grams per Tonne
oz	=	Troy ounces	oz/st	=	ounces per short ton
ppm	=	parts per million	ppb	=	parts per billion
st	=	short ton	mm	=	millimetre
m	=	metre	Km	=	kilometre
'	=	foot / feet	"	=	inches
USD\$	=	US dollar	CAD\$	=	Canadian Dollar



# MAYNE MINERALS INC.

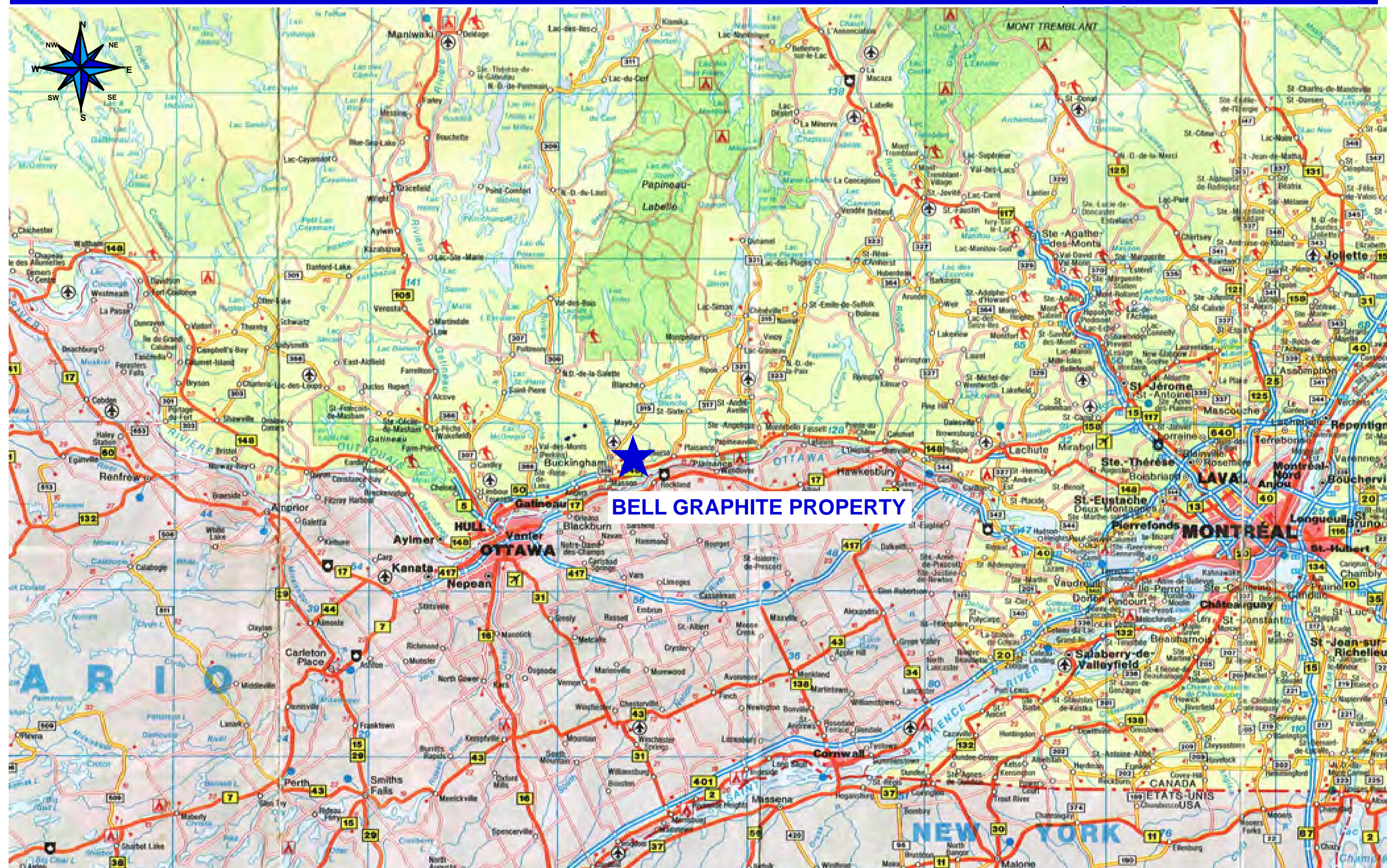


FIGURE No 2: ACCESS TO THE BELL GRAPHITE PROJECT

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 3:

### RELIANCE ON OTHER EXPERTS

The Author, Qualified and Independent Person as defined by NI 43-101, is authorized by **MMI** to study technical documentation relevant to the report and to recommend a work program. The author reviewed the mining titles status, any agreements and technical data supplied by **MMI** (or its agents), and any public sources of relevant technical information.

Information regarding mining titles and option supply agreements were received from **MMI**. The author also consulted the **GESTIM** government claim database regarding ownership and the status of mining titles. Although the author reviewed of all option agreements and available claim status documents, the author is not qualified to express any legal opinion with respect to the property titles or current ownership and any possible future legal disputes.

Many of the geological and technical reports for projects in the vicinity of the Bell Graphite Project were prepared before the implementation of National Instrument 43-101 in 2001 and NI 43-101 in 2005. The authors of such reports appear to have been qualified, and the information prepared according to standards that were acceptable to the exploration community at the time. Those reports are listed in **ITEM 27: References**. However, the data are incomplete in some cases and do not fully meet the current requirements of NI 43-101.

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 4: PROPERTY DESCRIPTION AND LOCATION

The Buckingham Property is located 135 km west of Montreal, Quebec, and 30 km northeast of Ottawa, Ontario; immediately east of the town of Buckingham (**FIGURE No 2**). It consists of 29 CDC (claim désigné sur carte) or map staked claim designated cells, for a total area of 1,745.24 ha. The claims are in good standing.

Twenty six are entirely owned (85%) by Mr R. Rosenblat and Mr G. Hryniw (15%) who recently signed a transfer form in favour of **MMI**.

The past exploitation pits and tailings of the former Bell Mine have not been restored and are now naturally reforested. No environmental liabilities are applicable to the claim holders. There are no other known significant factors and risks besides noted in the technical report that may affect access, title, or the right or ability to perform the recommended exploration program. Most of the property is found in Buckingham Township, except for the East portion which includes claims located in Lochaber Township. It lies within SNRC sheet number 31G11 and hosts two historical graphite mines: Bell and New Quebec mines.

### 4.1 Mining Property (**FIGURES No 3 and 4**)

The Claims, depicted in **FIGURE No 3**, cover private lands distributed in three different municipalities, namely: Gatineau, L'Ange-Gardien and Lochaber West. The former municipality of Buckingham has been recently amalgamated to Gatineau (Hull).

Assessment work requested during the period of validity of the claim amount \$ 1,200.00 for 19 claims and \$ 1,800.00 for 10 claims. There is a very little amount of credit left.

Thirteen claims must be renewed between April 17, 2021 and June 5th, 2021. Mining rights amount \$ 67 per claim over a two years period. Total mining rights to be paid before October 14th, 2022 amount \$1,943.00.

The total cost of assessment work to be performed before August 14th, 2022 is \$ 40,800.00.

**TABLE No 2** presented on the next page list all the claims constituting the Bell Graphite Project, with their location on the claims map, their respective area and expiry date.



# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 4: PROPERTY DESCRIPTION AND LOCATION (cont.)

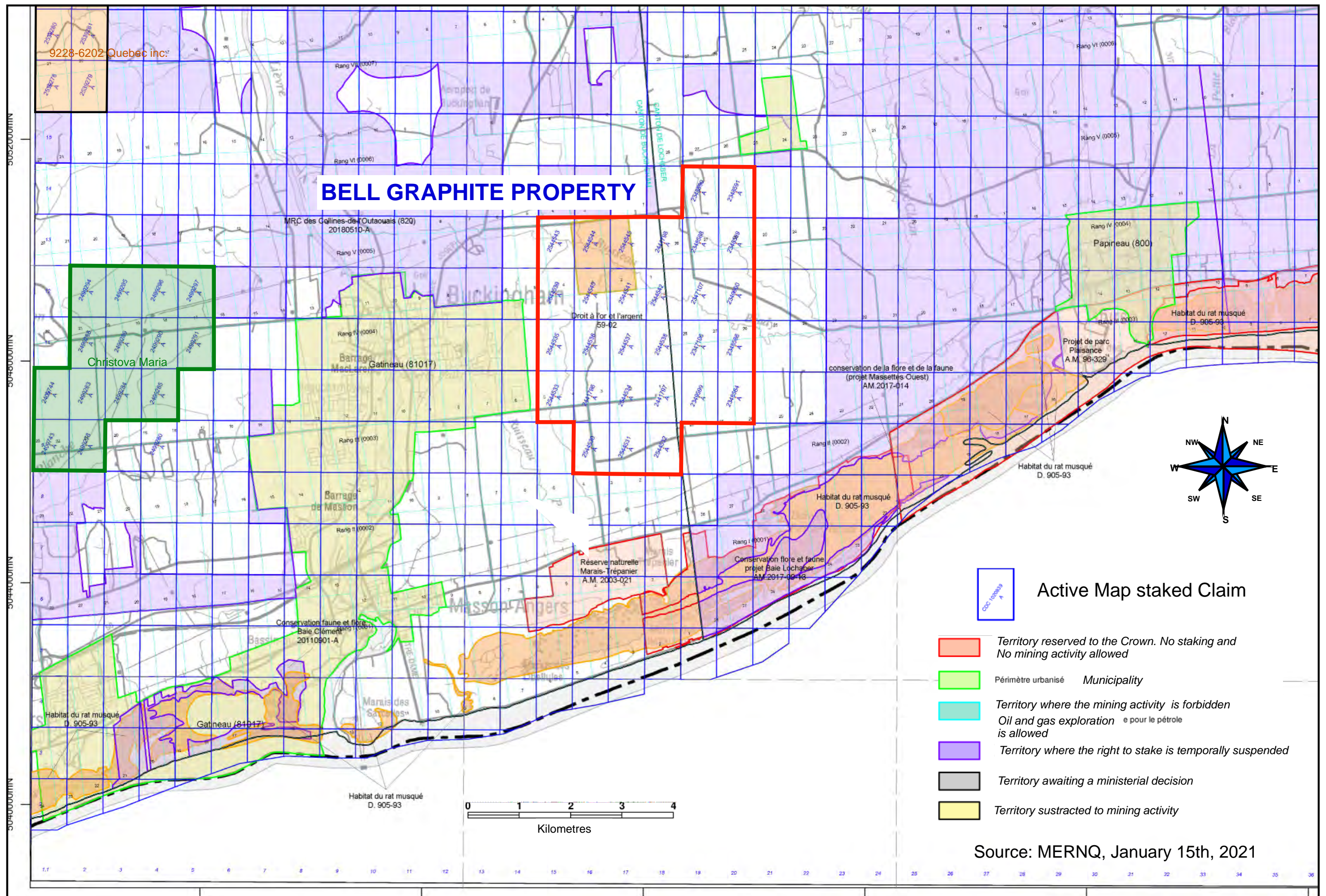
**TABLE No 2**

### CLAIM LIST

Claim #	NTS	Sheet row	Column	Area(ha)	Expiry Date
2347106	31G11	0011	0019	60.18	2021-05-28
2347107	31G11	0012	0019	60.18	2021-05-28
2348584	31G11	0010	0020	60.19	2021-05-31
2348586	31G11	0011	0020	60.18	2021-05-31
2348588	31G11	0013	0019	60.17	2021-05-31
2348589	31G11	0013	0020	60.17	2021-05-31
2348590	31G11	0014	0019	60.16	2021-05-31
2348591	31G11	0014	0020	60.16	2021-05-31
2349599	31G11	0010	0019	60.19	2021-06-05
2349600	31G11	0012	0020	60.18	2021-06-05
2441796	31G11	0010	0016	60.19	2021-04-17
2441797	31G11	0010	0018	60.19	2021-04-17
2441798	31G11	0013	0018	60.17	2021-04-17
2544530	31G11	0009	0016	60.20	2022-10-14
2544531	31G11	0009	0017	60.20	2022-10-14
2544532	31G11	0009	0018	60.20	2022-10-14
2544533	31G11	0010	0015	60.19	2022-10-14
2544534	31G11	0010	0017	60.19	2022-10-14
2544535	31G11	0011	0015	60.18	2022-10-14
2544536	31G11	0011	0016	60.18	2022-10-14
2544537	31G11	0011	0017	60.18	2022-10-14
2544538	31G11	0011	0018	60.18	2022-10-14
2544539	31G11	0012	0015	60.18	2022-10-14
2544540	31G11	0012	0016	60.18	2022-10-14
2544541	31G11	0012	0017	60.18	2022-10-14
2544542	31G11	0012	0018	60.18	2022-10-14
2544543	31G11	0013	0015	60.17	2022-10-14
2544544	31G11	0013	0016	60.17	2022-10-14
2544545	31G11	0013	0017	60.17	2022-10-14
<b>TOTAL</b>		<b>29 Claims</b>		<b>1,745.24 ha</b>	



# MAYNE MINERALS INC.



**FIGURE No 3: CLAIMS MAP OF THE BUCKINGHAM AREA, PART OF 31G11**



# MAYNE MINERALS INC.

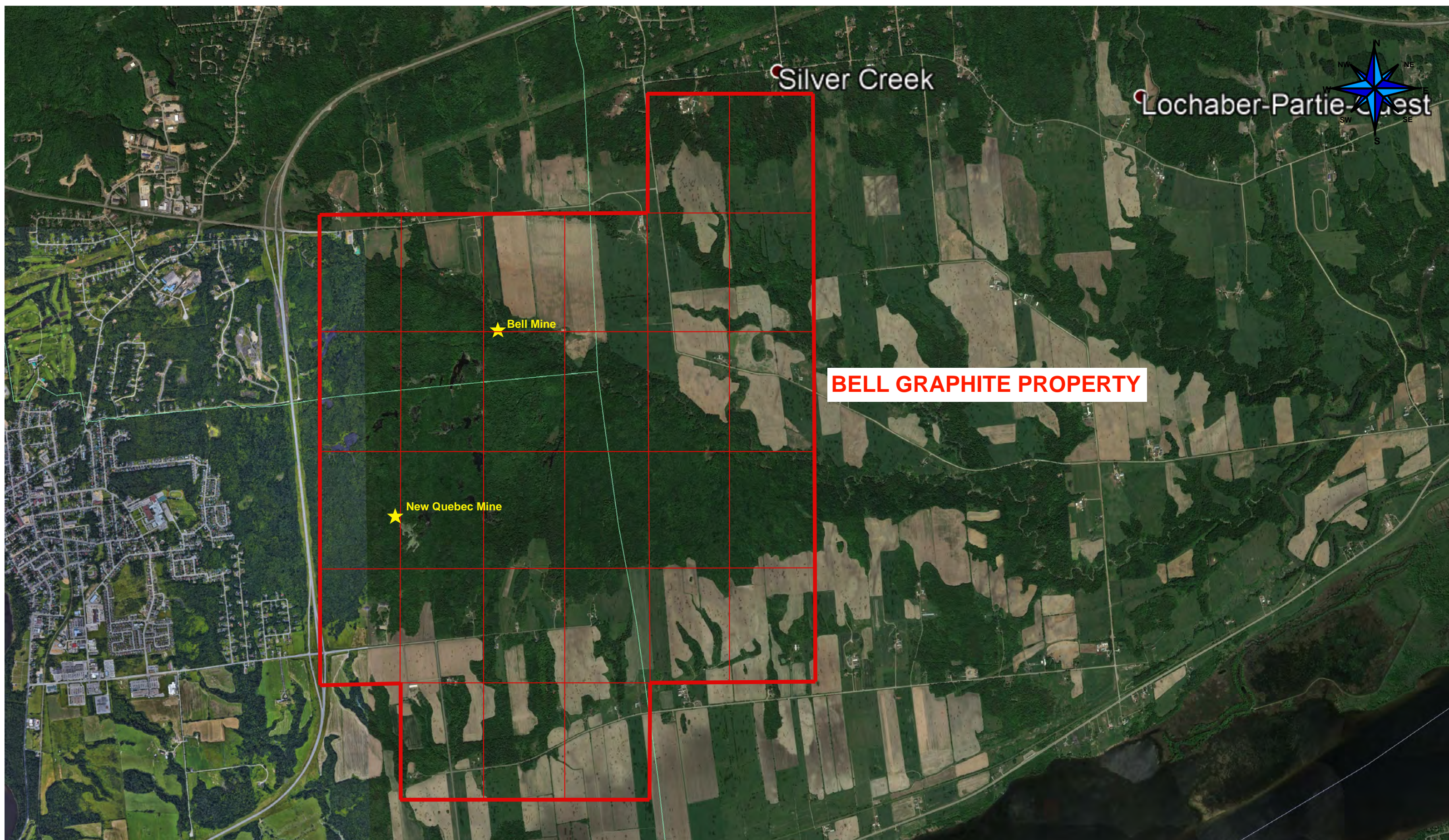


FIGURE No 4: CLAIMS MAP AND PHYSIOGRAPHY OF THE BELL GRAPHITE PROPERTY



# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 4: PROPERTY DESCRIPTION AND LOCATION (cont.)

### 4.2 Acquisition of the property

On February 14th, 2021, an agreement has been signed between the Company and two prospectors, for the acquisition of a 100% interest in the Bell Graphite Project. Terms of the option agreement that comprises cash and ordinary shares payments as well as convained exploration expenditures and a royalty, are as follows:

#### 4.2.1. Exploration Expenditures

In order to exercise the Option, the Optionee shall do the following:

Complete exploration and development expenditures on the Property in amounts as follows:

- i. \$100,000 within the earlier of one year of the Optionee becoming a reporting Issuer in a Province of Canada or 18 months from execution of this Agreement;
- ii. an additional \$150,000 within the earlier of 24 months from the Optionee becoming a reporting Issuer in a Province of Canada or 30 months from execution of this Agreement;
- iii. an additional \$200,000 within the earlier of 36 months from the Optionee becoming a reporting Issuer in a Province of Canada or 42 months from execution of this Agreement;
- iv. an additional \$250,000 within the earlier of 48 months from the Optionee becoming a reporting Issuer in a Province of Canada or 52 months from execution of this Agreement;
- v. an additional \$300,000 within the earlier of 60 months from the Optionee becoming a reporting Issuer in a Province of Canada or 66 months from execution of this Agreement; and
- vi. an additional \$350,000 within the earlier of 72 months from the Optionee becoming a reporting Issuer in a Province of Canada or 78 months from execution of this Agreement;

The total of exploration expenditures amounts to \$ 1,250,000.00 over a period of 6.5 years.

#### 4.2.2. Cash Payments

Make cash payments as described below:

- i. \$10,000 on execution of this Agreement;
- ii. \$10,000 on the earlier of the Optionee becoming a reporting Issuer in a Province of Canada or 6 months from the date of execution of this Agreement;
- iii. \$40,000 on the earlier of one year from the date of the payment under paragraph 2(b)(ii) above or the Optionee commencing the expenditures described in paragraph 2(a)(ii) above;
- iv. \$60,000 on the earlier of two years from the date of the payment under paragraph

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 4: PROPERTY DESCRIPTION AND LOCATION (cont.)

2(b)(iii) above or the Optionee commencing the expenditures described in paragraph 2(a)(iii) above;

- v. \$80,000 on the earlier of three years from the date of the payment under paragraph 2(b)(iv) above or the Optionee commencing the expenditures described in paragraph 2(a)(iv) above;
- vi. \$100,000 on the earlier of four years from the date of the payment under paragraph 2(b)(v) above or the Optionee commencing the expenditures described in paragraph 2(a)(v) above; and
- vii. \$120,000 on the earlier of five years from the date of the payment under paragraph 2(b)(vi) above or the Optionee commencing the expenditures described in paragraph 2(a)(vi) above;

The cash payments to be made during the option agreement totals \$ 420,000.00.

### 4.2.3. Issuance of Common Shares of the Optionee

Issue common shares of the Optionee as constituted on the date hereof, as described below:

- i. 100,000 shares on the earlier of the Optionee becoming a reporting Issuer in a Province of Canada or 18 months from the date of execution of this Agreement;
- ii. 150,000 shares on the earlier of the date that is one year from the date in paragraph 2(c)(i) or the Optionee commencing the expenditures described in paragraph 2(a)(ii) above;
- iii. 175,000 shares on the earlier of on the date that is two years from the date in paragraph 2(c)(i) or the Optionee commencing the expenditures described in paragraph 2(a)(iii) above;
- iv. 200,000 shares on the earlier of the date that is three years from the date in paragraph 2(c)(i) or the Optionee commencing the expenditures described in paragraph 2(a)(iv) above; and
- v. 225,000 shares on the earlier of the date that is four years from the date in paragraph 2(c)(i) or the Optionee commencing the expenditures described in paragraph 2(a)(v) above.

Over the first four years of the option agreement, the total issuance is 850,000 common shares.

### 4.2.4. Royalty

The Optionors shall retain a net sales royalty (the “Royalty”) of 3% on production from the Property.

The Optionee may at any time purchase 50% of the Royalty or 1.5 points of the net sales Royalty Interest from the Optionors for \$1,000,000 reducing the Royalty to 1.5% of net sales.

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 4: PROPERTY DESCRIPTION AND LOCATION (cont.)

### 4.3 Land Holding

The Bell Graphite Property covers lots which have an Agricultural Zonation. Most of the property is found in Buckingham Township, except for the East portion which includes claims located in Lochaber Township. Those lots do not have the same width than the conventional lots because they results of an adjustment of colonial surveying.

At the time of the land distribution, each colonial lot measured one mile in length ( 1,609 m) by 852 feet in width (259.60 m). Each lot had an area of 41.78 hectares (103.25 acres).

The total area of the Bell Graphite Property is 4,312.43 acres, equivalent to 1,745.24 hectares.

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 5: ACCESSIBILITY, LOCAL RESOURCES, INFRASTRUCTURE, PHYSIOGRAPHY AND CLIMATE

The property is readily accessible by various roads traversing the property, such as Doherty road (Chemin Doherty to the north and Lépine road (Chemin Lépine) to the south. The Belter Road connects the center of Buckingham to the west portion of the property. This last access starts as a street of Buckingham, passes under Highway # 50 and changes for a 4x4 accessible trail. Most of the mining property is covering private properties and within those last, the owners have tractor or ATV trails.

Most of the land covering the property is forested and is used for recreational use (ATV and horse trails). The eastern portion of the land covering the property is used for agriculture and it is limited to the north-east and south extremities. Old apple trees observed in the centre west portion indicate that the land use for agriculture was probably more important in the past.

The Buckingham area was developed by the lumber and paper industries (Buckingham and Masson) which use the water and power of the Lievre River. Manpower could be easily available from the immediate area. Local resources are available at nearby localities, notably Gatineau. Transportation and housing are available nearby and a local work force should be suitable to support a mining operation. Two small airfields are present at less than 15 km from the property. Gatineau Airport is mainly used by private aviation, helicopter companies and is served by one small airline company. Buckingham airport is mainly used by private airplanes.

The property is located at the transition between the flat valley of the St Lawrence Platform and Laurentian hills of the Grenville Province. The south portion and northeast corner are rather flat whereas the north center of the property becomes more rugged, with steep-sided hills (**Figure No 4**). Southern Québec is characterized by a fresh and humid continental climate. Drainage in the property is partly disturbed by beaver dams that were observed in the center of the property. Main features is the Ruisseau Brady or formerly named McNaughton Creek that follows the north contour of the northern hill and flows southeastward, into the Ottawa River.

According to Environment Canada, the average mean annual temperature in the area range in Summer from 14° to 25°C while in Winter, the average temperature varies from -13°C to -4°C. Typically, the land is free of snow from April to late November.

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 6: HISTORY

Graphite is among the first substances mined in Canada as it appears on the first reports from the Geological Survey of Canada and Crown Lands Department of Quebec. The Buckingham region has been recognized since the middle of 1800's to host several feldspar, mica and graphite deposits, including the Bell Graphite Mine and the New Québec Graphite Mine both located on the property.

Spence (1920) described the graphite deposits of the Buckingham region as being present in two distinct forms:

- 1) Compact (veins or seams), or
- 2) Disseminated in the hosting rock (gneiss), in proportion from 10 to 50%.

Graphite deposits were worked from the 1860's to around 1920. They reached maximum production in 1916, as a consequence of increasing demand of the material for war manufacturers during World War I and prices being 3 to 5 times those which ruled in 1914 (Denis and Mailhiot 1918).

Based on its historical graphite production, the region of Buckingham has undergone additional phases of exploration in the fifties and in the eighties and more recently, as a response of the market demand for this substance. Historical works regarding the property of Buckingham are summarized in **TABLE No 3**.

From 1906 to approximately 1920, graphite was extracted on the property by the Bell Graphite Mine and the New Quebec Graphite Co, respectively located on the north and central portions of the Bell Graphite Project.

**TABLE No 3**  
**PREVIOUS WORKS**

Company/Reference	Works	Results
Bell Graphite Co Spence 1920	Graphite Production :	6 700 tons of graphite were produced on an intermittent basis from 1906 to 1912.
New Quebec Graphite Co.		Graphite production 2500 tons @ 14% Cg
Frobisher Ltd GM01599A-B GM02357A-B	Drilling 26 holes ; 1497.02 m Laboratory test work	In 1952, An historical mineral resources of about 185 100 tons @ 9.4% graphite was estimated from 30m to 80m in vertical depth.
GM19761:(1965) Lot 5A Rg III GM19767:SW part lot 4b Rg IV	Drilling G-33-36; 34 m Drilling G-33-37; 32 m	Brecciated carbonated siltstone? From 12m to 41m crystalline limestone (or marble) was observed. Described as pyroxenite.
GM35140:(1968) Lot 2A, Rg IV	Drilling 29-25-68; 67 m	Gneiss.



# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 6: HISTORY (cont.)

In 1989, the MERNQ published a brochure prepared by G. Simandle (MB-89-05) in which several graphite deposits of the Mont-Laurier- Hull- Lachute area are compiled and described. Bell and New Quebec deposits were classified as disseminated graphite hosted in marbles and paragneisses. Seldom occurrence of Crystalline graphite of the lump variety was mentioned at New Quebec Graphite deposit.

### 6.1 Bell Graphite Mine

The Bell Graphite Mine was operated from 1906 to 1912 during which 6,700 tons of flake graphite were produced. Graphite was as disseminated flakes found in a bed of paragneiss, on lot 2W ½ of range V. The graphite ore was distributed in a layer 600 m in length and 3 to 4 m thick.

In 1910, a mill, which consisted of a large, 3-storey wooden structure was erected at the foot of the hill. It was located about the center of the lot, on the south bank of McNaughton Creek from which the supply of water was obtained. Mining operation were confined to the northeasterly trending escarpment of the hill located on the north centre of the property and were transported to the mill via a tramway.

In the face of this bluff, a series of overlying, short open stopes have been run in on a 3.7 m thick ore-body having a northerly trend and a dip of 60° to the west (H.S. Spence 1920). The horizontal distance from which the graphitic band has been traced is stated to be about 600 m. The mined graphite was said to be disseminated in a gneiss and to be accompanied by a white feldspathic rock. The graphite content of the ore was reported to have averaged 8%. Spence 1920 reports that the best ore is stated to have been found at the base of the hill, from which point good showings are said to have been found on the northerly extension of the ore-body, below the present workings.

### 6.2 New Quebec Graphite mine (1912-1918)

About 800 m south of the Bell Mine, the New Quebec Graphite Co started to mine graphite in 1912 and erected a mill. Most of the ore treated at the mill was obtained from a number of surface openings, the majority being on lot 3. The operations took place from 1912 to 1918 but operations were suspended in the latter year, pending alterations to the mill. The average mill-feed was stated to run 14% graphite (H.S. Spence 1920).

All the graphite was of the disseminated flake type and occurred in a series of bands in calcareous gneiss. Graphitic bands are usually narrow, a thickness of 2.75 m being the extreme. A total of 2,500 tons of graphite is reported to have been produced from these workings. In I. Dressler and B.T. Denis 's RG-20, Volume III, Geology of Quebec, 1951, it is mentioned that two 70 ft deep shafts have been sunk on the New Quebec Graphite mining concession. The mill of the New Québec Graphite Co resumed its operation in May 1920, after a prolonged shut down of the mine to allow the installation of a new process of flotation to the mill. Graphite production seemed to have ceased that year as only shipments from stockpiles are reported afterwards and the company went to liquidation in 1923 (Obalsky 1920; Obalsky 1923).

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 6: HISTORY (cont.)

### 6.3 1951-1952 Exploration works and definition drilling

In the early fifties, Frobisher Ltd attempted to establish a mineral resource by drilling 26 holes (1,497.02 m) that would intersect the extension of the graphitic bands of the Bell Mine pit (**TABLE No 3**). Based on the premise that the best ore encountered in the original operation was found at the base of the hill, it was decided to drill the ore zone at regular intervals of 30.5 m (100 feet) from south to north over the entire length of the old mine. All drill holes were located west of the Mine and were oriented at 118° and distributed over 7 sections as displayed in Figure No 5. Holes B-11 and B-24 terminated in the mineralization.

The location of these drill holes that is shown in **FIGURE No 5** was adjusted by the author, based on the plan of drilling provided by Frobisher (GM2357-B) and geological map which locate the diabase dyke intersected in holes B-1 and B-2. The characteristics of each hole are listed in **TABLE No 4**.

This pre 43-101 estimation demonstrated the existence of an exploration target of 185 100 tons of ore grading 9.4% graphite. The mineralization is found at a depth of less than 80 m, over an average mining width of 4.2 m. They concluded that sufficient ore of commercial grade was present to support an operation on the scale of 100 to 150 tons per day for at least a decade.

They also tested the material through core sample rejects. It was noted to possibly recover a final concentrated in which approximately 30 to 40% by weight will fall in the plus 80 mesh size range although considerable grinding was required to raise the carbon of this coarse material to satisfactorily meet lubricating requirements, which was the main application that was sought for from Frobisher Ltd.

### 6.4 Period from 1952 to 2011

All activity seems to have ended at the end of 1952. The mining property was dormant until 1965. From 1965 to 1968, three diamond drill holes were bored within the present property. Those holes were bored for water supply of farm houses. Only the records are provided with a brief description of the lithology.

GM19761(1965)	Drilled on Lot 5A, Range III, at -90° in Paleozoic siltstones and then in crystalline limestone. It is 112 ft deep.
GM19767 (1965)	Bored in the SW portion lot 4b Range IV. 95 feet deep, vertical hole in calcareous pyroxenite.
GM35140 (1968)	Bored on lot 2A, Range IV; Hole 29-25-68 is vertical and 200 ft deep. Rock intersected is a qtz-feldspar-biotite gneiss.

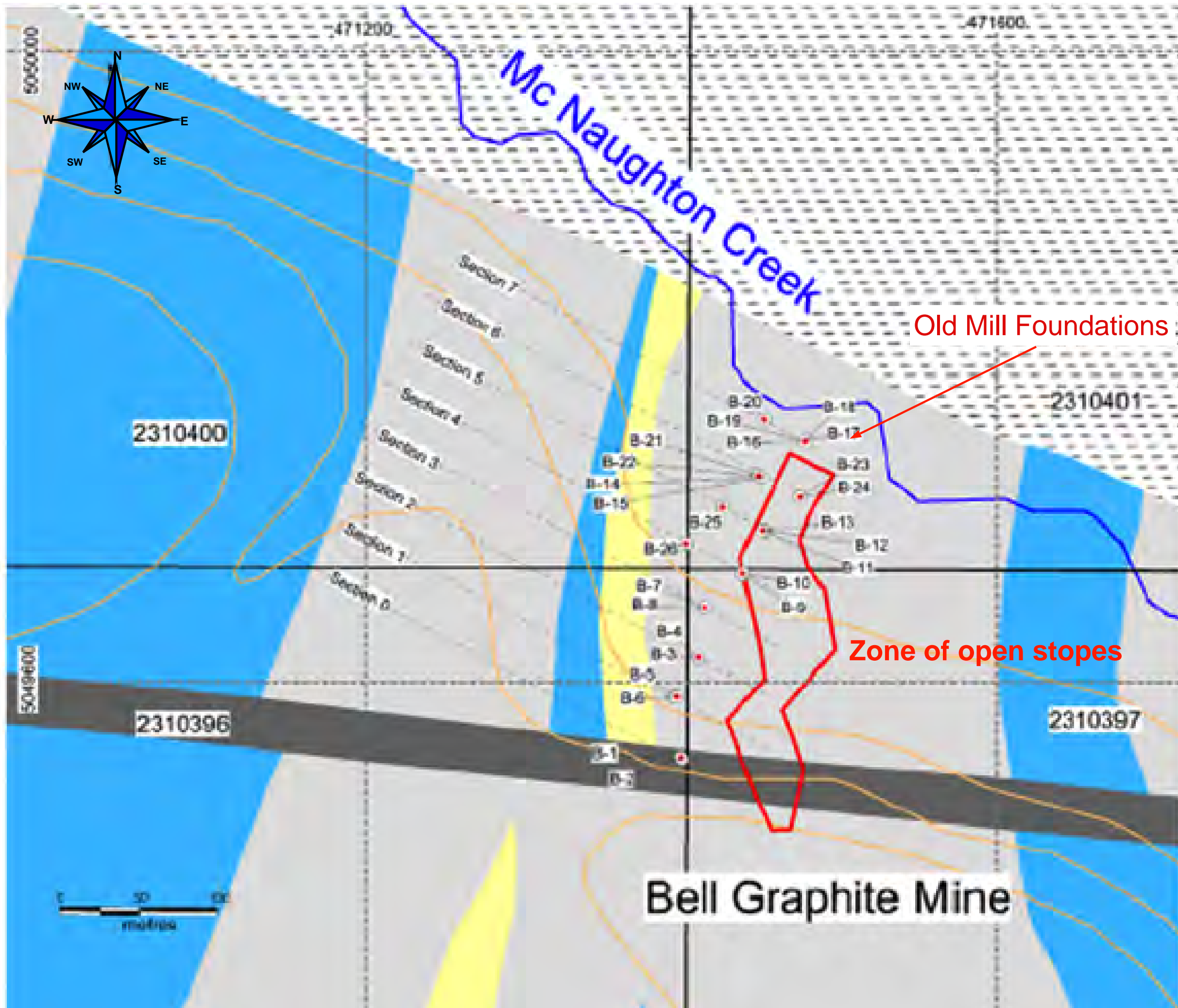
### 6.5 Period from 2011 to 2015

In 2011, the Bell Graphite Project was staked by GéoMégA Resources inc.. A NI 43-101 compliant technical report was prepared by Consultants Inlandsis in June 2015. From 2011 to 2015, GéoMégA made some limited reconnaissance work (prospecting and sampling).

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

**TABLE No 4**  
**Frobisher DDHs**

Hole No.	Section	Angle °	Depth m	Graphite Intersections From (m) To (m)		Thickness m	Graphite Content C %
B-1	N-0	-35	53.34				
B-2	N-0		-58.5	60.96			
B-3	N-2	-35	38.40	28.04	30.79	2.74	8.9
B-4	N-2	-58.5	43.59				
B-5	N-1 -	-35	47.55				
B-6	N-1	-58.5	55.78	34.75	39.01	4.27	5.8
B-7	N-3	-35	55.47	34.75	40.23	5.49	7.3
B-8	N-3	-72	73.46	41.15	46.94	5.79	8.3
B-9	N-4	-70	64.31	31.70	37.19	5.49	10.7
				47.55	50.44	2.90	10.8
B-10	N-4	-90	79.86	47.40	55.17	7.77	10.5
				69.49	69.80	0.31	8.6
B-11	N-5	-45	54.86	22.86	27.43	4.57	11.2
				34.75	37.4	2.29	12.8
B-12	N-5	-70	52.43	26.52	32.62	6.10	12.7
				42.98	45.12	2.13	8.9
B-13	N-5	-90	60.96	40.39	48.46	8.08	12.1
B-14	N-6	-45	38.10				
B-15	N-6	-70	58.52	35.97	42.06	6.10	13
				52.73	53.49	0.76	13.2
B-16	N-7	-45	68.28				
B-17	N-7	-70	46.94	34.14	43.89	9.75	10.3
B-18	N-7	-90	70.41	50.90	63.25	12.34	8.90
B-19	N-7	-50	55.93	28.96	32.61	3.66	11.7
B-20	N-7	-75	96.01	85.34	93.12	7.77	9.50
B-21	N-6	-90	96.01	75.29	76.2	0.91	7.60
				83.52	92.66	9.10	11.7
B-22	N-6	-75	76.50	51.05	57.00	5.94	12.5
				68.28	73.15	4.88	4.90
B-23	N-6	-90	60.96	26.06	31.70	5.64	7.00
				43.59	50.90	7.32	5.50
B-24	N-6	-54	50.29	19.50	22.56	3.04	12.3
				24.68	26.52	1.83	9.50
B-25	N-5	-75	98.15	69.64	76.96	7.31	11.6
				88.84	92.96	4.11	3.40
B-26	N-4	-70	47.85				



Source R. Charbonneau, P. Geo., 2015

**FIGURE No 5: LOCATION OF 1951-1952 DIAMOND DRILL HOLES**

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

**TABLE No 5**

**Description of GeoMegA's sampling (May 2015).**

Sample No	Location	Description with visual graphite content
BG15-01	Small Pit	Paragneiss intermixed with carbonated bands. 3-5% graphite flakes (up to 2 mm) with 2% of sulphides
BG15-02	Small Pit	Carbonated gneiss, grey to brown in color, medium-grained. 2-3% graphite with traces of sulphides
BG15-03	Bell Graphite Mine	Paragneiss intermixed with carbonated rock (marble). Gray to brown in color, medium grained. 10-15% large flake (2-3 mm) of graphite.
BG15-04		
BG15-05	New Qc Graphite Co.	West pit (block from stockpile) Marble or carbonated paragneiss. Fine to medium grained gray rocks. Calcite mineral (10-15%) with diopside (2%). 10-15 % graphite
BG15-06	New Qc Graphite Co.	West pit (block from stockpile) Pegmatite (quartz and feldspath). Very large graphite flake (2-5%). Seems to fill micro fractures at some places.
BG15-07	New Qc Graphite Co.	East pit (block from stockpile) Schistozed gneiss. Gray in color. Calcite mineral. React to HCl.
BG15-08	New Qc Graphite Co.	East pit (block from stockpile). Strongly schistozed gneiss. Black in color. 15-20% graphite (mostly large flake).

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 6: HISTORY (cont.)

During Spring 2013, prospecting works were performed from May 21st to 26th 2013 by GéoMégA's personal with the aids of beep mats (BM4+). The main trench dug by Bell Graphite Mine was mapped as well as 4 small trenches and pits in the area of New Quebec Graphite Co exploitation. A total of 44 outcrops was described, out of which 39 were sampled (Gauthier and Cayer 2013). In addition, 8 grab samples collected nearby the exploration trenches were analyzed. Out of the 47 assays, eleven (11) returned more than 9% organic carbon (Corg). Organic Carbon is generally taken as equivalent to graphitic carbon (Cg) in such high grade metamorphic rocks. Graphite mineralization is commonly hosted in paragneiss, although marble may also contain graphite mineralization. Most outcrops show paragneiss or marble with less frequent quartzite and monzonite.

In May 2015, R. Charbonneau, P.Geo., visited the property with special attention being paid to the former pits and trenches of Bell Graphite Mine and New Quebec Graphite Co. Eight graphite samples were collected from nearby test pits (**TABLE No 5**). A small pit that was not recently mapped was found 400 m west of the Main Zone of Bell Graphite Mine where samples BG15-01 and BG15-02 have been taken. The pit dug in paragneiss with carbonated bands measures about 10 m in diameter. From 3 to 5% graphite was observed and is associated with sulfides. The Main Pit of the Bell Mine was also visited and it shows abundant remnant of graphite mineralization hosted in rusty paragneiss.

Prospecting works were also directed to verify a graphite occurrence that was mapped by Hébert (1988) and north-south mineralized trend that could exist between the Bell and New Quebec Graphite mines (Gauthier and Cayer 2013). Three of the four small pits of the New Quebec Mine that were mapped by GéoMégA have been visited and sampled. Grey gneiss intermixed with calcite bands is found in the area of these pits. In the west pit, disseminated graphite flakes are associated with calcite and a green mineral (possibly diopside).

A “pegmatite” block from the stockpile also displayed Graphite mineralization in very large flake distributed in somewhat parallel planes, as if the graphite was filling cavities or fractures. In fact, this pegmatite was found to be a quartzite.

Marble occurrence was observed NW of small New Quebec Graphite pits and a strongly schistozed graphite-rich grey gneiss was observed in the stockpile nearby the easternmost pit of the New Québec Mines. The later rocks present abundant calcite, as revealed by acid test. Outcrop lithologies were also noted, whenever present, along the followed pathways.

## 6.6 Saint Jean Carbon inc. (2016-2019)

### 6.6.1. Digitalization of previous drill holes

From 1951 to the end of 1952, 26 drill holes were bored on the Bell Graphite for a total length of 1,497.02 m (**TABLE No 4 on page 18**).



## BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.



**PICTURE No 1:** Remnants of the Mill foundations



**PICTURE No 2:** Few pieces of core found at an ancient drill site

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 6: HISTORY (cont.)

Frobisher Ltd' diamond drill records were obtained from "Examine", from the MERNQ. They are archived in GM 1599-B (1951) and GM 2357-B (1952) respectively.

At the time (1951-1952), the drilling was made using the standard method which consisted to pull all the rods every time the core barrel was full of core (10 feet). This was a long and costly process since the rods were to be re-screwed and pull down with the risk to have some loosen pieces of rock blocking the hole. In addition, at this period of time, the tubage mainly used was the EXT standard giving a core diameter of 0.9 inch (2.29 cm) (**PICTURE No 2**).

The geologist's report mentions that despite the core size, high recovery was obtained and the ore samples recovered from the core were therefore considered as being quite representative.

The drill logs from the 1951 and 1952 drilling campaign are very succinct. The name of the drilling contractor is not mentioned. There is no mention if the casings were removed or left in place. During our reconnaissance of the property, we have visited the drill sites and found nothing marking the hole location. We found some pits where water was kept for drilling purposes and few pieces of core.

There is no test of deviation (acid test or Pajari test) reported. The standard drilling method was known for its huge deviations, especially with the smallest bit size.

The structures observed on the core are not reported. Bedding, schistosity, shear zone, joints, etc. We have to observe the hand drafted cross-sections to evaluate the angles of the contacts and possible deviation of some holes.

It has been observed in the logs that the mineralized intersections were not all assayed. Hole B-26 ends in the mineralization. Shoulders of mineralized zones have not been sampled despite the presence of graphite and pyrite mentioned.

During the first drilling campaign, the author described a dark grey to black fine grained intrusive rock as a minette. Those dikes and dikelets are largely confined to the vicinity of the graphitic ore zones. Thin sections made by the University of Toronto, Department of Mineralogy found that the minette was in fact a micro-diorite. The coarse grained intrusion intersected on section N-0 and named monzonite in 1951 is in fact a transversal diorite dike.

In order to be consistent with the better rock description made in 1952, we have changed the titles of the 1951 drill holes.

Frobisher did not provide the certificates of analysis nor mentioned the name of the laboratory which processed the core. There is also no mention concerning an eventual topographic survey of the grid.



# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 6: HISTORY (cont.)

The 1951-1952 logs were exactly copied into GEOTICLOG without making any interpretation or changes.

### 6.6.2. GeoticLog

Since 2002, Geotic offers specialized software for the mining industry. From the drilling data capture to 3D modeling, the software is an integrated, safe and easy to use solution. The GeoticLog application is used to input drilling information. Its user-friendly interface greatly accelerates data input by allowing users to enter titles, summaries and even typical descriptions with the help of dictionaries. These dictionaries, can be edited by the users themselves. They allow data to be validated when input, minimizing the need for subsequent corrections and ensuring exceptional data quality at all times. The information is input and organized in a simple and logical way, making the work even easier

The application also generates personalized reports according to your needs. The application includes a users' rights management interface to control data access and make data secure. Data is saved in Microsoft Ms-Access or SQL format and organized in an intuitive schematic diagram, making it easier to produce charts and thematic plans. These databases can then be used by GeoticGraph to create sections and plan views or they can even be exported to other applications.

Lastly, modules for batch imports/exports, calculating composites, calculating adjusted structures, and QAQC and drilling core photo management integrated with your environment, greatly increase the application's potential.

The software comprises a complete validation of all data entries, the use of standard and personalized dictionaries, descriptions for six geological levels plus RQD, magnetism, assaying, geochemistry and geophysics, definition of an infinite number of coordinate systems, zone weighted average calculations, Import/export of data, Export to Gemcom, Printing of high quality logs, Integration and linearization of drilling core photos, management of assay certificates, tracing of QAQC graphs, personalized data tables, integration and calculation of adjusted structures, addition of calculated fields in the assay table, direct access to GeoticGraph's section creation wizard, and planning and monitoring of a drilling campaign.

The drill plans edited with the Frobisher's reports were scanned and imported into MapInfo/Discover in order to localise the holes in the UTM coordinate system.

As said earlier, the geological contacts interpreted by the Frobisher's geologist, were measured on his cross-sections and incorporated into the data base.

### 6.6.3. GeoticGraph

Once the digitalization was completed, the author used the software GeoticGraph for the prepara-

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 6: HISTORY (cont.)

tion of cross sections and level plans. Cross sections produced show colored lithology and geological interpretation as well as the assay results.

The principal lithologies described in the logs are:

Intrusive rocks: Micro-dabase, Diabase, Gabbro, Pegmatite granite, and Pegmatite.

Metasedimentary rocks: Gneiss, Paragneiss, Schist, Limey sediments, Micaschist, Marble and Quartzite (this last was described as a pegmatite).

The Mineralizations described are: Graphite and Pyrite.

Concerning the mineralization, three colors have been adopted:

Black for grades of Carbon ranging from 1 % to 6 % Cg;

Green for grades ranging from 6 % to 10% Cg; and,

Red for grades higher than 10% Cg.

The codes for lithology are marked on the right side of the drill holes while the assay results are listed on the left side when sufficient space is available.

### 6.6.4. TDEM and Magnetic Helicopter-borne surveys (FIGURES No 6 & 7)

In 2016, SJL conducted helicopter-borne magnetic and TDEM surveys. The surveys were contracted to Prospectair Geoservices from Gatineau, Quebec. The surveys covered 129 linear kilometres of lines, which were flown at 100 m line spacing with orthogonal tie lines at 1000 m spacing. Lines were oriented East-West and were perpendicular to the stratigraphy.

The heliborne magnetometer Geometrics G-822A was used. Both the ground and heliborne systems use a non-oriented (strap-down) optically-pumped Cesium split-beam sensor. These magnetometers have a sensitivity of 0.005 nT and a range of 15,000 to 100,000 nT with a sensor noise of less than 0.02 nT. The heliborne sensor is mounted in a bird made of non-magnetic material located 25 m below the helicopter when flying. Total magnetic field measurements are recorded at 10 Hz in the aircraft. The ground system is recording magnetic data at 1 sample every second. A GEM GSM-19 Overhauser magnetometer, a computer workstation and a complement of spare parts and test equipment serve as the base station. Prospectair established a base station in a secure location with low magnetic noise. The GSM-19 magnetometer has resolution of 0.01 nT, and 0.2 nT accuracy over its operating range of 20,000 to 100,000 nT. Its data output rate is 1 Hz.

Prospectair Geosurveys developed the ProspecTEM. It is a powerful lightweight system adapted for small size helicopters and easy manoeuvrability enabling the system to be flown as close to the ground as safely possible and ensuring maximum data resolution.

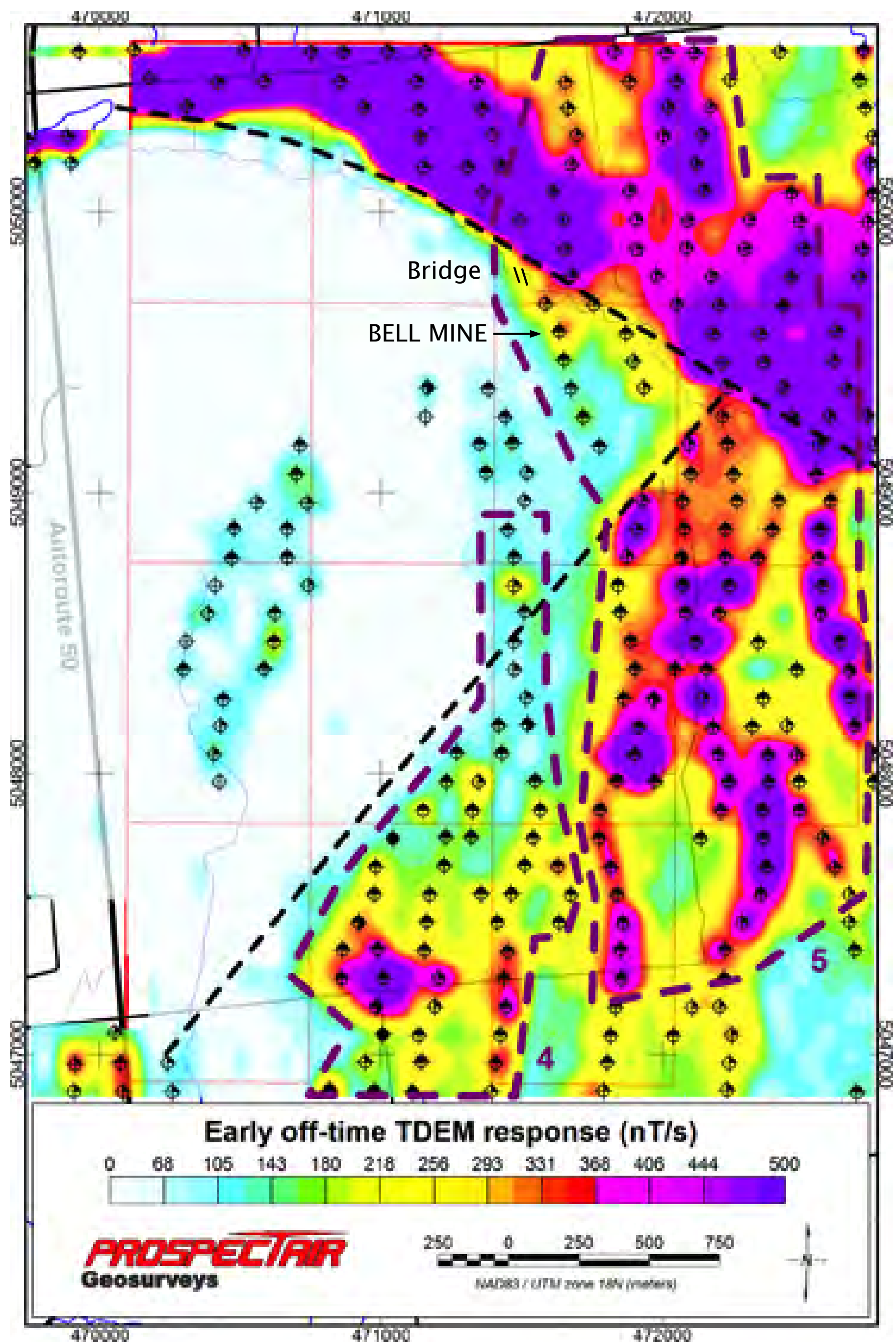


Figure No 6: 2016 TDEM helicopter-borne survey

# MAYNE MINERALS INC.

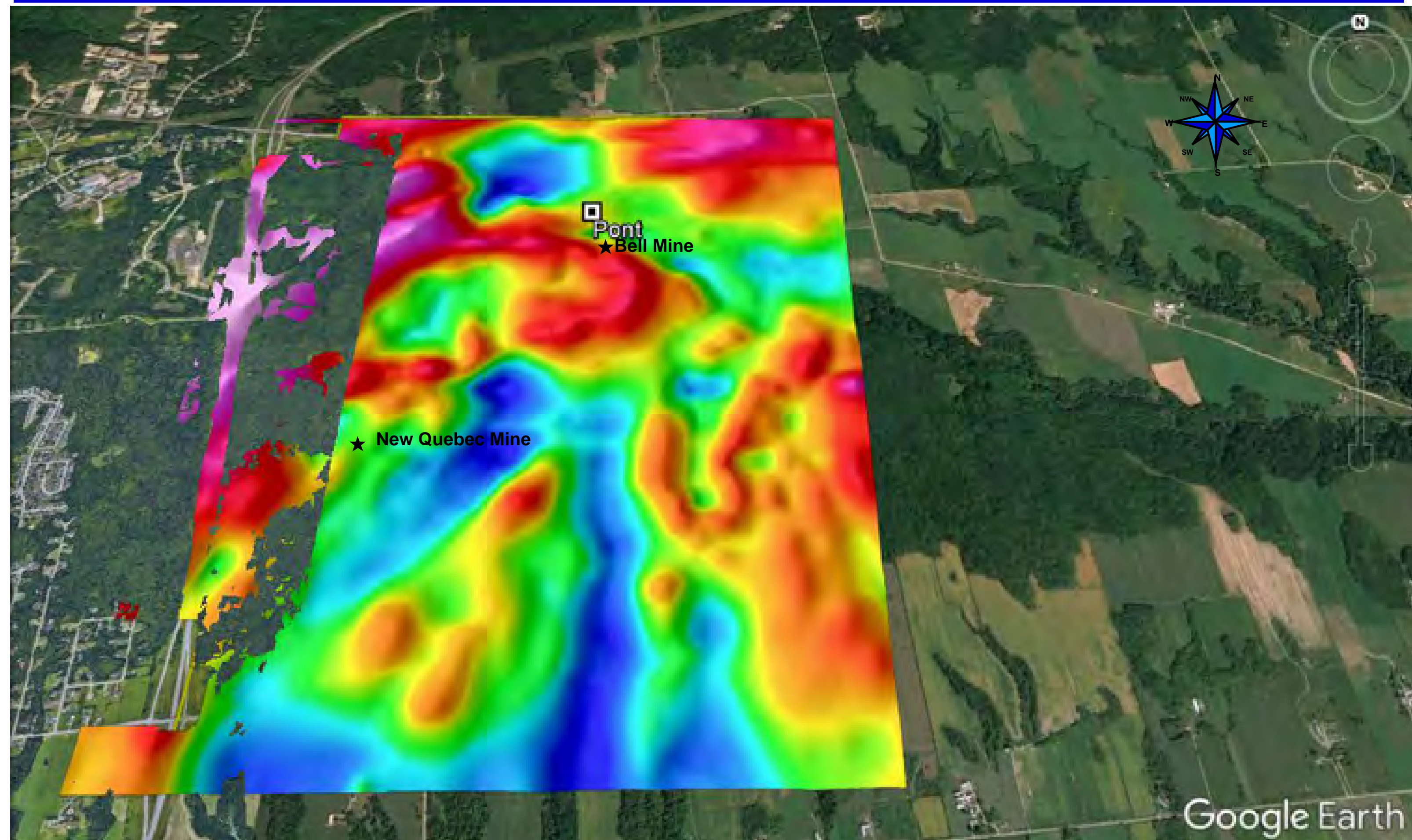


FIGURE No 7: 2016-MAGNETOMETRIC HELICOPTER-BORNE SURVEY

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 6: HISTORY (cont.)

Advanced signal processing technique and a full processing package was developed in house to optimize the ProspecTEM data. ProspecTEM system employs a transient or time-domain electromagnetic transmitter that drives an alternating current through an insulated electrical coil system. The towing bridle is constructed from a Kevlar rope and multi-paired shielded cables which are attached to the helicopter by a weak link assembly. An onboard harness with outboard connectors mounted on a plate allows for quick disconnection or connection of the exterior elements. The system uses a 4 KW generator and a large condenser to transmit alternating 2.75-ms half sine pulses with intervening off- times of 13.916-ms electric pulse, 60 pulses per second.

On the Bell Block of claims, two main corridors of more or less N-S oriented conductive lineaments are found and have been identified as prospective areas. The first area in the central part, hosts the past producing New Quebec Graphite Co mine while the past producing Bell Graphite mine stands in the second area. This prospective band runs parallel to the rock formation and is extending N-S over a distance of about 2 km in the eastern part of the property. This prospective band has never been drill tested and therefore represents a priority target.

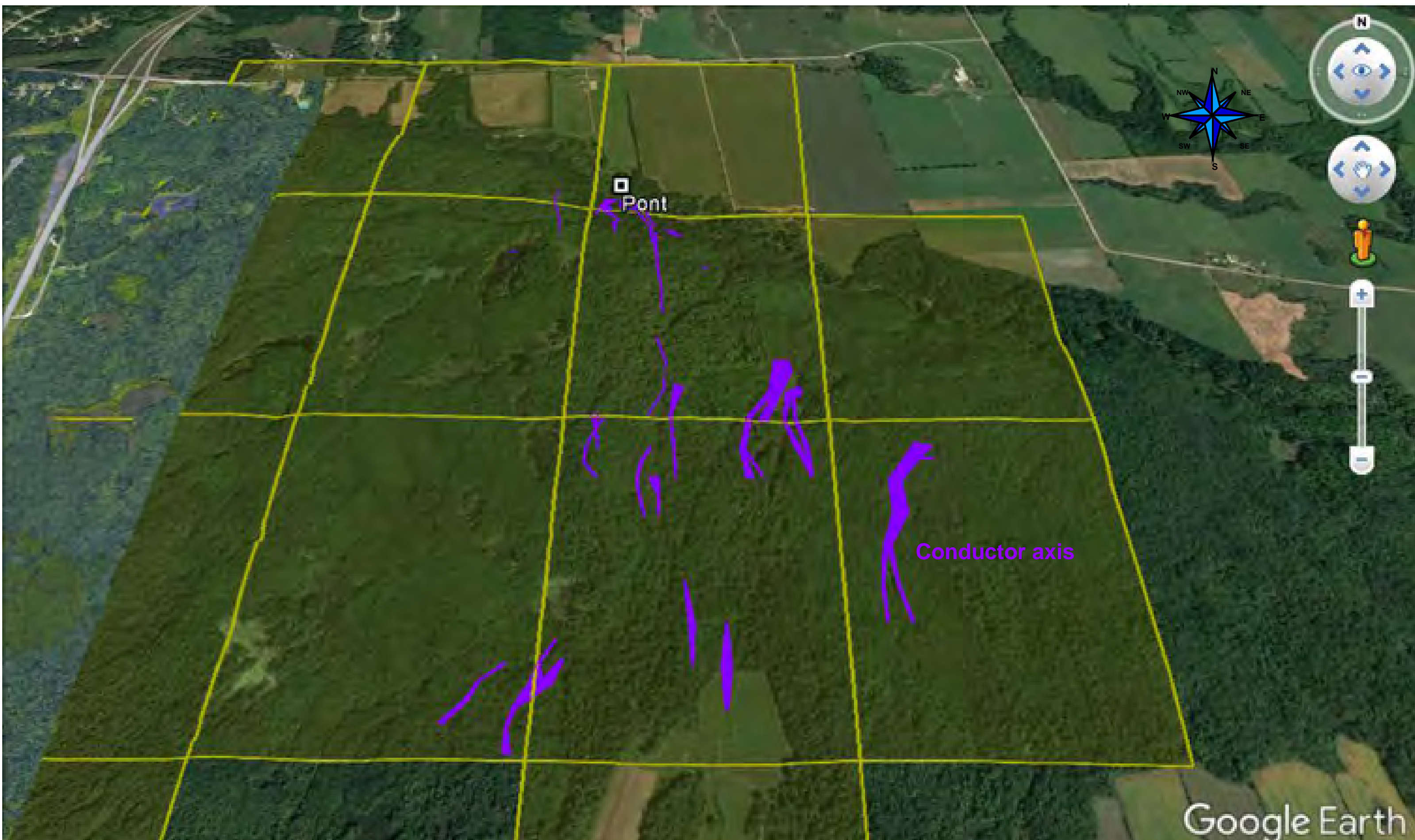
The southern half of this area is particularly interesting as it hosts the strongest and most continuous EM conductors believed to be found in the bedrock, and should therefore be investigated in priority. The northern part of area is ambiguous and it is difficult to confirm if the sources are part of the bedrock or not. This part corresponds to flat clayish lands with farming.

### 6.6.5. Phi Spy survey (FIGURE No 8)

During March and April 2017, Dynamic Discovery Geoscience of Ottawa managed a ground time-domain electromagnetic (TDEM) PhiSpy survey on the Bell Graphite Property. The goal of the survey was to identify geophysical responses possibly associated to graphite mineralized occurrences. More particularly, the survey aimed at better defining the location and geometry of conductors previously detected by the helicopter-borne TDEM survey. The Phi Spy survey totalled 30.7 km of lines and trails.

Twenty individual conductive anomalies, grouped within eight different ensembles (From “A” to “H”) were defined. Out of the 20 Phi Spy conductors identified, 8 are defined of first priority and 12 of second priority. The old mining sites correspond to long, wide and strong conductors. However, some long linear conductors, picked-up by the Phi Spy, have not been the object of the historical prospecting and were never checked by trenching or drilling.





**FIGURE No 8: 2017-PhiSpy EM Ground Survey**

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 6: HISTORY (cont.)

### 6.6.6. 2017 Prospecting

A NE oriented ridge, located about 400 m west of the old mine, revealed the presence of jumbo flakes in a 5 to 10 m thick calcosilicated paragneiss. Three grab samples taken over a distance of 100 m returned the following assays:

P-269301	6.75 % Cg	12.30 % Ca	1230 ppm P
P-269302	14.35 % Cg	0.32 % Ca	150 ppm P
P-269303	16.90 % Cg	2.92 % Ca	2730 ppm P

The fourth sample was taken in an old trench located south of the old Bell open-stopes, on strike with the mineralized zones. The old trench was dug and blasted south of a 20 m thick E-W oriented diabase dyke. Graphite flakes are found near the contact between the diabase and the paragneiss. A grab sample returned:

P-269304:	2.87 % Cg	5.30 % Ca	1340 ppm P
-----------	-----------	-----------	------------

Samples P-269305 and P-269306 taken at some distance north of the long and thick diabase dyke, confirm the presence of a 200 m long and narrow Phi Spy conductor. Assay results are as follows:

P-269305:	1.55 % Cg	2.31 % Ca	800 ppm P
P-269306:	2.07 % Cg	3.80 % Ca	670 ppm P

Some other graphitic occurrences were found at about 200 m west of the old mine, over a length of 100 m (open on both sides). The flakes are found in a biotitic paragneiss.

P-269307	2.70 % Cg	1.89 % Ca	1830 ppm P
P-269310	1.80 % Cg	0.45 % Ca	730 ppm P
P-269311	1.95 % Cg	5.93 % Ca	670 ppm P

About 25 m west of P-269307, two flooded pits have been discovered. Two grab samples taken on the northern wall of the pits returned:

P-269308:	11.35 % Cg	0.61 % Ca	1940 ppm P
P-269309:	12.95 % Cg	14.55 % Ca	2490 ppm P

The next four samples were taken on the same stratigraphic band, at about 50 m SW of the double pits, near the contact between the paragneiss and the E-W diabase dyke:

P-269312:	14.90 % Cg	9.64 % Ca	2740 ppm P
P-269313:	0.70 % Cg	0.84 % Ca	590 ppm P

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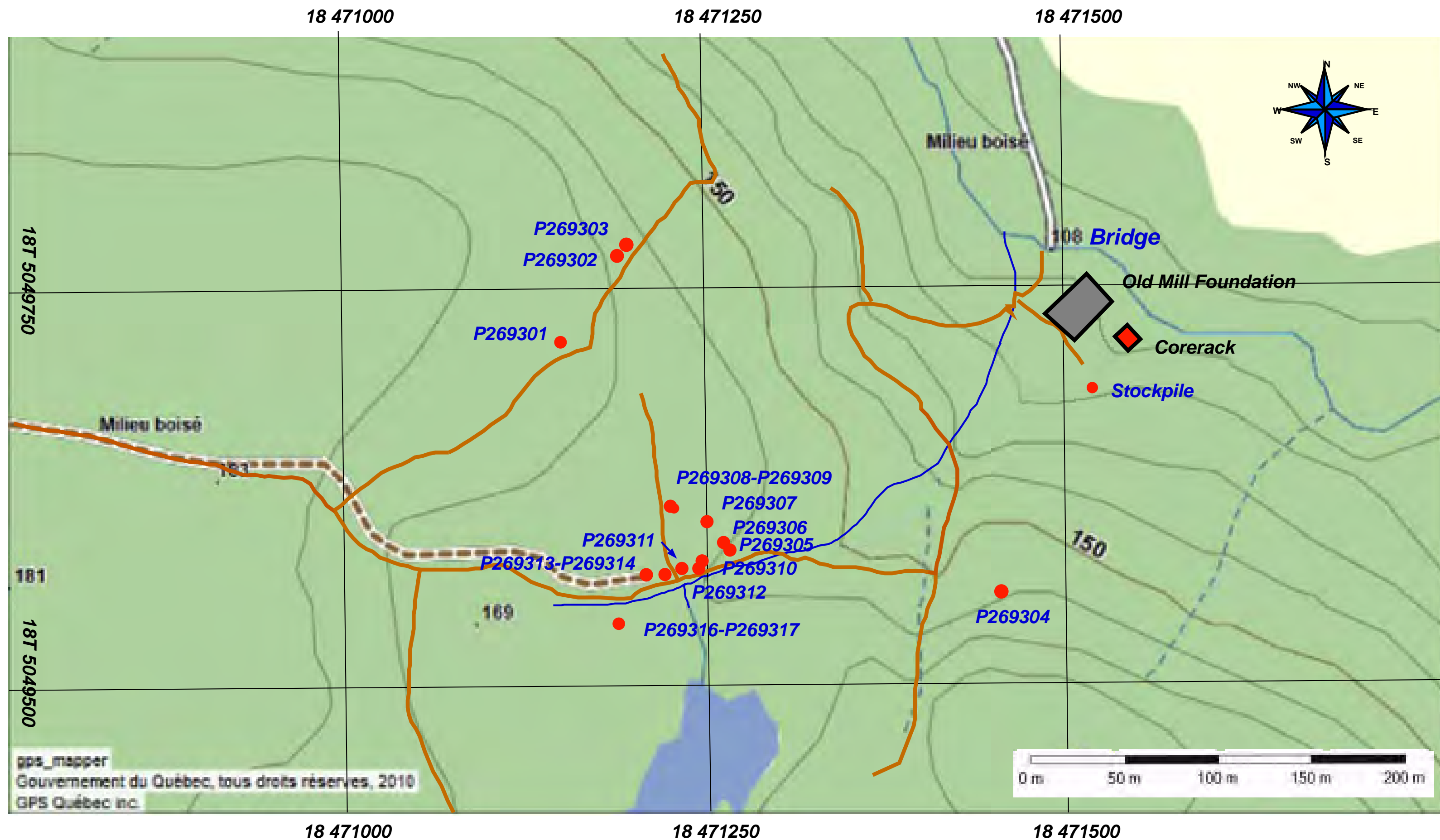


FIGURE No 9: 2017 Prospecting



# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 6: HISTORY (cont.)

P-268314: 9.73 % Cg 2.15 % Ca 1900 ppm P  
P-269315: 11.70 % Cg 2.54 % Ca 2050 ppm P

On the south side of the dyke, and on strike with the northern mineralized band, two samples have been picked on an outcrop of biotitic paragneiss. Results are:

P-269316: 6.46 % Cg 3.01 % Ca 1760 ppm P  
P-269317: 1.64 % Cg 0.54 % Ca 730 ppm P

The little prospecting program permitted to discover several Graphite mineralized paragneiss bands, which were followed over distance of more than 200 m. The most western one presents very large graphite flakes (“jumbo”) of high quality. Two of those bands with high Cg values failed to return conductive anomalies, which would indicate that the conductors picked-up by the Phi Spy survey in the central and east part of the property would correspond to thicker and richer graphitic occurrences.

The grab samples are selected samples and are not necessarily representative of the mineralization hosted on the property.

### 6.6.7. 2017 Drilling Program (FIGURES No 10 & 11)

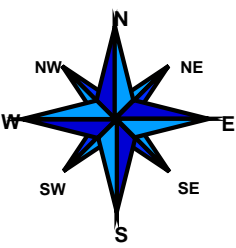
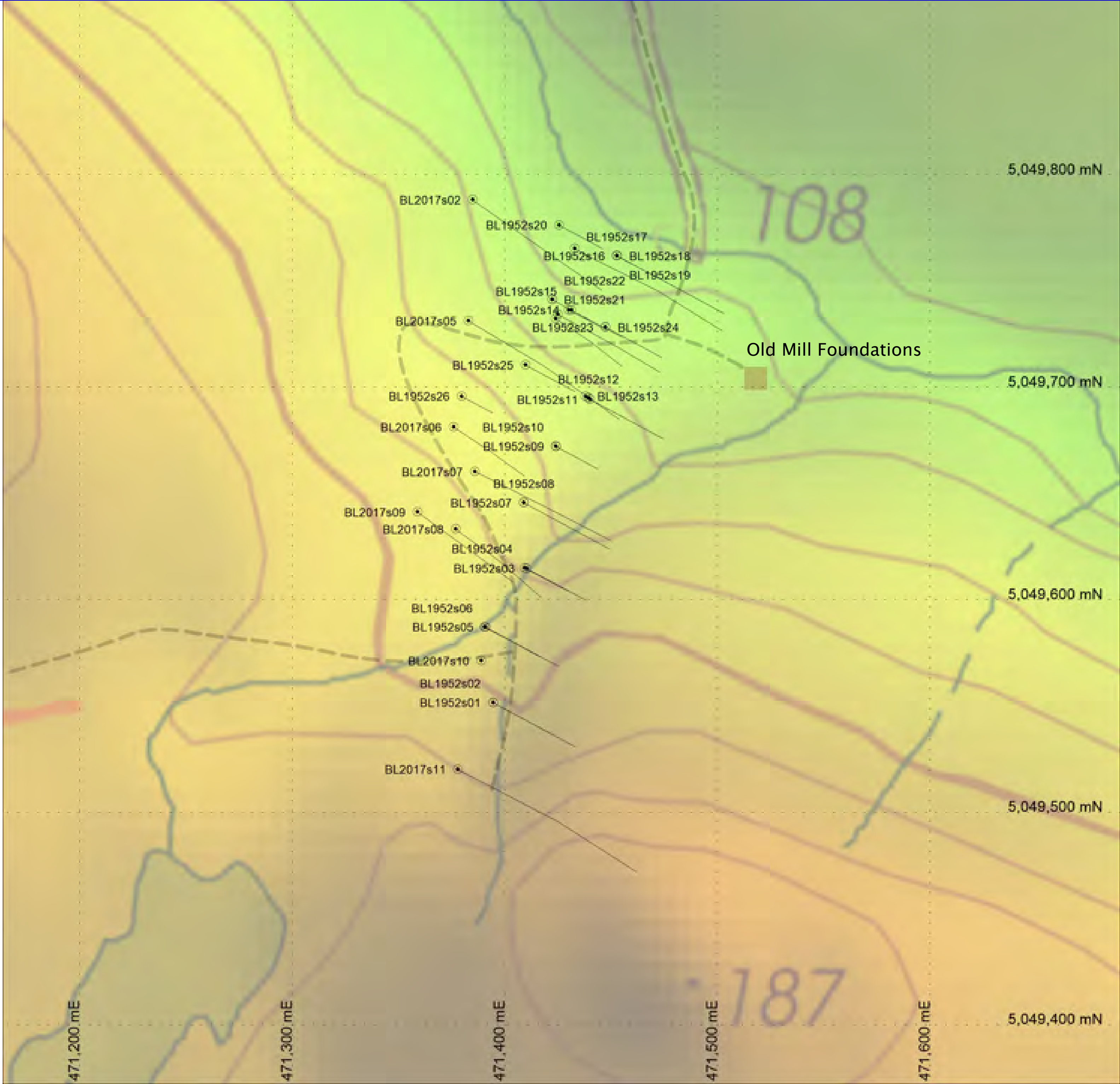
The 2017 Drilling Program was aimed to control and extend the 1951-1952 sections. It was also important to verify the previous assays which at the time, gave the Total Carbon Content. The assays at that time did not make the difference between organic, carbonate and graphitic carbone.

The 2017 drill holes have not been bored in the ascending order. The campaign comprised eleven drill holes totalling 1,338 metres in length.

Hole BL-17-06 was collared on Section N-4 at a very short distance from Hole B-26 from 1952, oriented in the same direction and with the same dip. At the time, Hole B-26 was stopped at 47.87 m due to a lack of funds. Hole BL-17-06 intersected two mineralized zones enclosed by thick low-grade zones.

#### Graphite assay results and coordinates for Hole BL-17-06

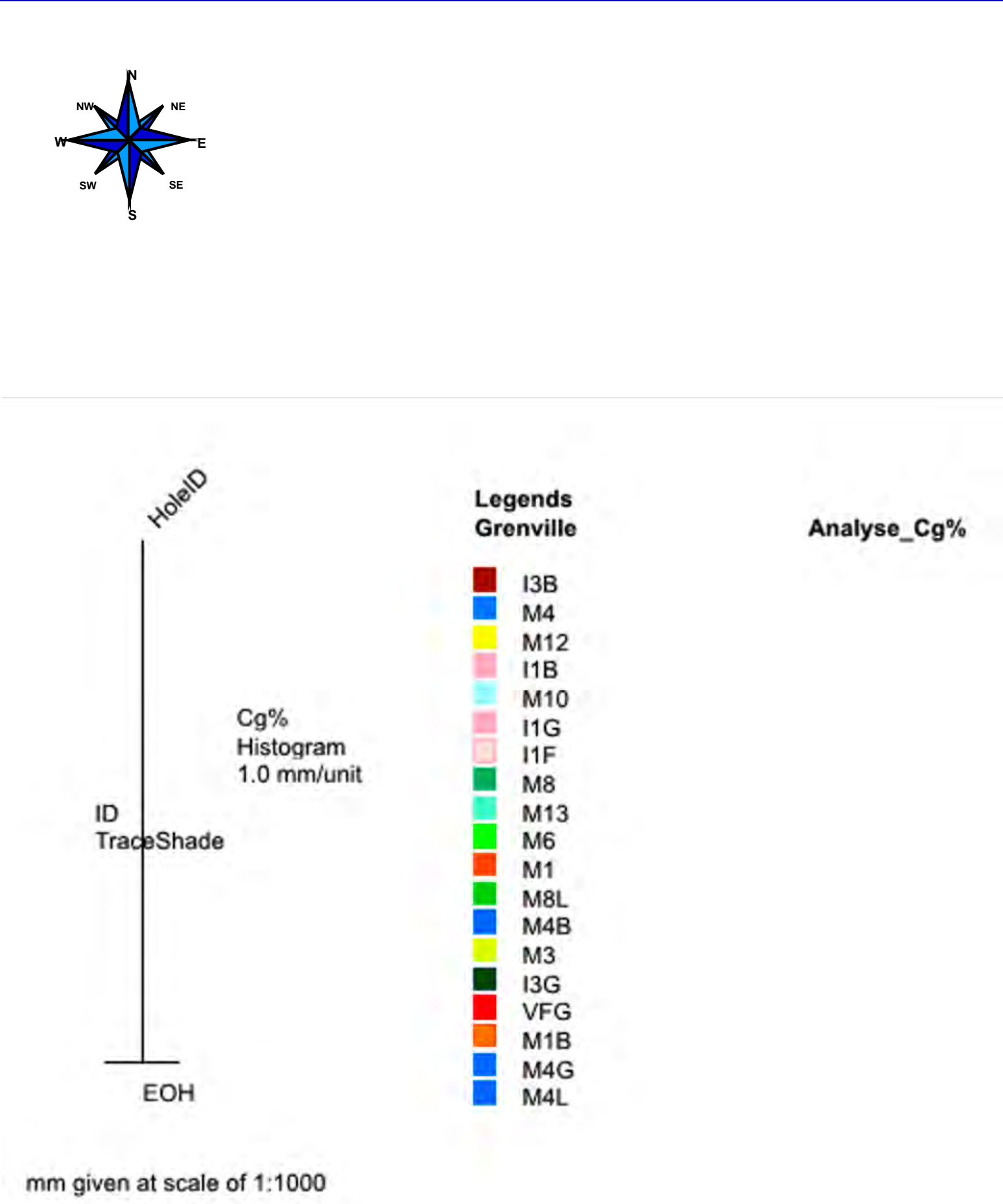
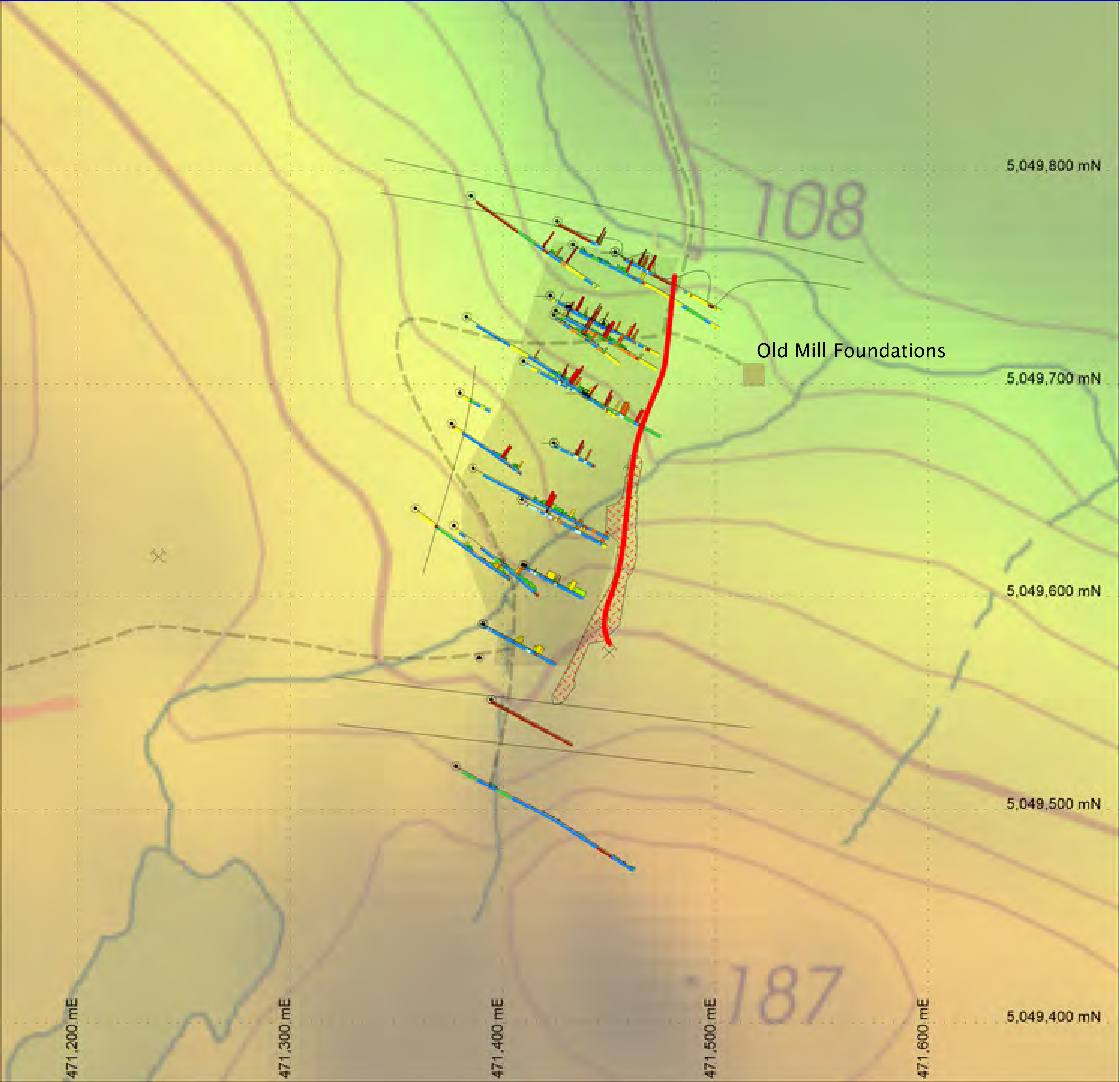
Hole Number	Easting	Northing	Azimuth	Dip	From	To	True width	Cg
	mE	mN	°	°	m	m	m	%
BL-17-06	471388	5049691	118	-70	68.86	80.51	10.95	0.72
					80.51	86.00	5.16	6.13
					86.00	87.41	1.32	1.19
					98.74	105.67	6.51	1.32
					105.67	108.00	2.19	3.96



**Sources:** database from the Government of Canada “Géogratis” web site and from the Quebec Government “Géoboutique” web site.

**SCALE : 1: 2000**

**FIGURE No 10: Vertical Projection of the Drill Holes**



**Sources:** database from the Government of Canada “Géogratis” web site and from the Quebec Government “Géoboutique” web site.

**SCALE : 1: 2000**

**FIGURE No 11: Vertical Projection of the Drill Holes with lithologies and assays**

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 6: HISTORY (cont.)

Hole BL-17-09 is bored on Section N-2, at about 50 m NW of historical Hole B-4 and 25 m below Hole -17-08.

### Graphite assay results and coordinates for Holes BL-17-08 and BL-17-09, as well as B-4

Hole Number	Easting	Northing	Azimuth	Dip	From	To	True width	Cg
	mE	mN	°	°	m	m	m	%
BL-17-08	471377	5049633	118	-60	69.00 73.00	73.00 92.00	3.46 16.45	4.60 1.35
BL-17-09	471359	5049641	118	-60	57.00 88.00 92.00 98.00	64.00 92.00 98.00 103.00	6.06 3.46 5.20 4.33	1.39 1.70 3.59 1.52
			Including				2.00	5.46
					98.00	103.00	4.33	1.52
B-4	471409	5049615	118	-58.5	22.86 32.16 34.59	31.39 32.77 35.05	7.27 0.52 0.39	6.50 7.70 7.70
			All zones		22.86	35.05	10.39	5.29

Hole BL-17-07 was bored on Section N-3 at about 25 m below historical hole B-7. The hole intersected two mineralized zones with low grade shoulders.

### Graphite assay results and coordinates for Hole BL-17-07 and Hole B-8.

Hole Number	Easting	Northing	Azimuth	Dip	From	To	True width	Cg
	mE	mN	°	°	m	m	m	m %
B-8	471409	5049645	118	-72	40.69	46.94	5.94	8.10
				Including			0.76	18.90
					62.94	63.70	0.72	7.80
BL-17-07	471386	5049660	118	-75	54.00 57.00 64.00 76.00	57.00 64.00 70.61 78.05	2.90 6.76 6.38 1.98	1.42 4.89 1.52 3.91

Hole BL-17-05 was bored on Section N-5 at about 30 m NW of hole B-25 (1952)

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 6: HISTORY (cont.)

### Graphite assay results and coordinates for Hole BL-17-05

BL-17-05	471383	5049731	114	-50	56.35 81.00 85.05 93.00 100.00	57.15 85.05 93.00 100.00 103.21	0.61 3.10 6.09 5.36 2.46	4.58 1.05 5.28 1.44 4.87
B-25	471419	5049705	118	-74.5	48.77 69.65 86.87	62.48 76.96 91.44	13.21 7.04 4.40	5.20 11.63 4.78

**Hole BL-17-02** is collared on Section N-7 at 25 m NW of Hole BL-17-01 which is turn is about 12.5 m NW of B-20. It was targeted to verify the extension at depth of the mineralized zones previously intersected, and extend the mineral resources.

For topographical reason, hole BL-17-02 is not collared in the center of the section.

### Graphite assay results and coordinates for Hole BL-17-02 and B-20 (1952)

Hole Number	Easting	Northing	Azimuth	Dip	From	To	True width	Cg
		mE	mN	°	°	m	m	m %
BL-17-02	471385	5049788	125	-70	116.00 129.00 137.17 153.50	119.00 137.17 139.54 156.00	2.81 7.64 2.22 2.34	6.72 1.55 4.81 3.56
B-20	471447	5049764	118	-76	83.83	95.09	10.90	8.10

Those results indicate that the mineralized envelope is extending to more than 50 m at depth. The two holes started in an ESE-WNW oriented, thick and late diabase dyke. This last cuts the mineralized zone.

### Graphite assay results and coordinates for Hole BL-17-03, BL-17-04 and Holes B-22 and B-14.



# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 6: HISTORY (cont.)

Hole BL-17-04 was bored to twin hole B-22 on Section N-6 and verify the presence of several mineralized zones intersected in shorter holes, located at about 25 m ESE. Hole BL-17-04 was stopped at 110 m. It supports the presence of the three mineralized zones.

Hole BL-17-03 was bored to twin holes B-15 and B-14 (1951) on the same section, and to verify the presence of several mineralized zones intersected in shorter holes B-23 and B-24 (1952), located at about 25 m ESE.

Hole BL-17-03 was stopped at 78 m. It confirmed the presence of the three mineralized zones intersected in 1951-52 and by hole BL-17-04.

Results are presented below:

Hole Number	Easting	Northing	Azimuth	Dip	From	To	True width	Cg
	mE	mN	°	°	m	m	m	%
BL-17-04	471425	5049733	118	-77	9.00	13.00	3.90	2.5
					35.00	43.11	7.90	1.29
					43.11	49.56	6.28	8.08
					49.56	53.63	3.97	1.29
					54.22	62.33	7.90	2.50
					Including	2.33	4.86	
B-22	471434	5049734	118	-75	17.37	17.83	0.44	9.50
					51.05	57.00	5.75	13.09
					68.28	73.15	4.70	4.85
BL-17-03	471425	5049734	118	-45	7.00	8.00	0.71	7.83
					26.50	35.00	6.07	0.83
					35.00	38.46	3.18	5.71
					38.46	50.00	8.21	1.93
B-14	471443	5049729	118	-45	33.68	34.75	0.94	10.30

## Graphite assay results and coordinates for Hole BL-17-01, BL-17-02 and B-18 (vertical) and B-20 (1952)

Hole BL-17-01 is bored on Section N-7, at about 35 m SE of Hole BL-17-02, at about 12.5 m NW of B-20 and at 42 m NW of hole B-18.

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 6: HISTORY (cont.)

Hole Number	Easting	Northing	Azimuth	Dip	From	To	True width	Cg
	mE	mN	°	°	m	m	m	%
BL-17-01	471433	5409765	118	-50	6.40	9.26	2.22	1.14
					39.39	44.56	4.11	1.39
					44.56	46.11	1.21	6.88
					57.00	59.00	1.56	4.06
BL-17-02	471385	5049788	125	-70	116.00	119.00	2.81	6.72
					129.00	137.17	7.64	1.55
					137.17	139.54	2.22	4.81
					153.50	156.00	2.34	3.54
B-18	471471	5049749	0	-90	49.53	64.00	14.47	8.35
B-20	471447	5049764	118	-76	83.83	95.09	10.90	8.10

For topographical reason, holes BL-17-01 and BL-17-02 are not collared in the center of the section.

### Graphite assay results and coordinates for Hole BL-17-10, B-5, and B-6

From Section N-7, the drill rig moved to BL-17-10 located for topographical reason, between sections N-0 and N-1, at about 200 m south. Hole BL-17-10 is collared on the northern edge of a thick E-W oriented diabase dyke. Distance from that hole to previous drill holes B-5 and B-6 is 15 m. BL-17-10 is 105 m long and has been bored vertically. It intersected the diabase dyke at a depth of 86.85 m, proving that the dyke is highly dipping to the north.

Hole -17-10 returned low grade values of Cg.

Hole Number	Easting	Northing	Azimuth	Dip	From	To	True width	Cg
	mE	mN	°	°	m	m	m	%
BL-17-10	471389	5049571	0	-90	24.78	27.00	2.22	1.48
					71.00	76.46	5.40	1.10
					83.00	86.85	0.85	0.92
B-5	471391	5409587	118	-35	32.00	37.19	2.98	6.57
B-6	471390	5409587	118	-58.5	33.07	39.01	5.06	6.03

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## Item 6: HISTORY (cont.)

Projection of the mineralized zones of B-5 and B-6 coincides with hole BL-17-10 with two intersections of microdiabase dyke and a band of limey metasediments. Holes B-5 and B-6 were stopped before intersecting the two BL-17-10's deepest mineralized zones.

### Graphite assay results and coordinates for Hole BL-17-11

Hole BL-17-11 was collared on Section N-1S, at about 15 m south of the thick E-W oriented diabase dyke, in order to locate the south extension of the graphitic bands.

This 150 m long hole intersected an alternation of limey metasediments with biotite paragneisses returning very low graphite grades. Three zones with values comprised between 0.5% and 1% Cg have been intersected.

Hole Number	Easting	Northing	Azimuth	Dip	From	To	True width	Cg
	mE	mN	°	°	m	m	m	%
BL-17-11	471378	5049520	118	-50	27.97	32.00	3.14	0.87
					104.00	108.00	3.02	0.80
					148.00	150.00	1.49	0.70

It appears that the diabase dyke has been injected in a left-lateral fault. The richest mineralized bands would be found at about 75-100 m farther east as indicated by the geophysics.

Drill holes of the 2017 campaign were bored with the NQ core size (47.6 mm, 1.875 inch) while the 1951-52 drill holes were bored with the "standard" method and an EXT core size (0.905 inch, 22.99 mm). This last drilling method caused a lot of hole deviations. We are not sure that the twin holes are running totally parallel all the way down. Holes of the 2017 drilling program were controlled with the Reflex equipment, at the beginning of the hole if the casing was longer than 10 m and 6 m above the end of the hole.

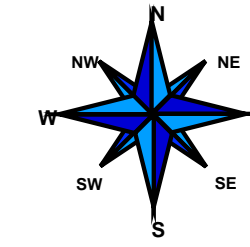
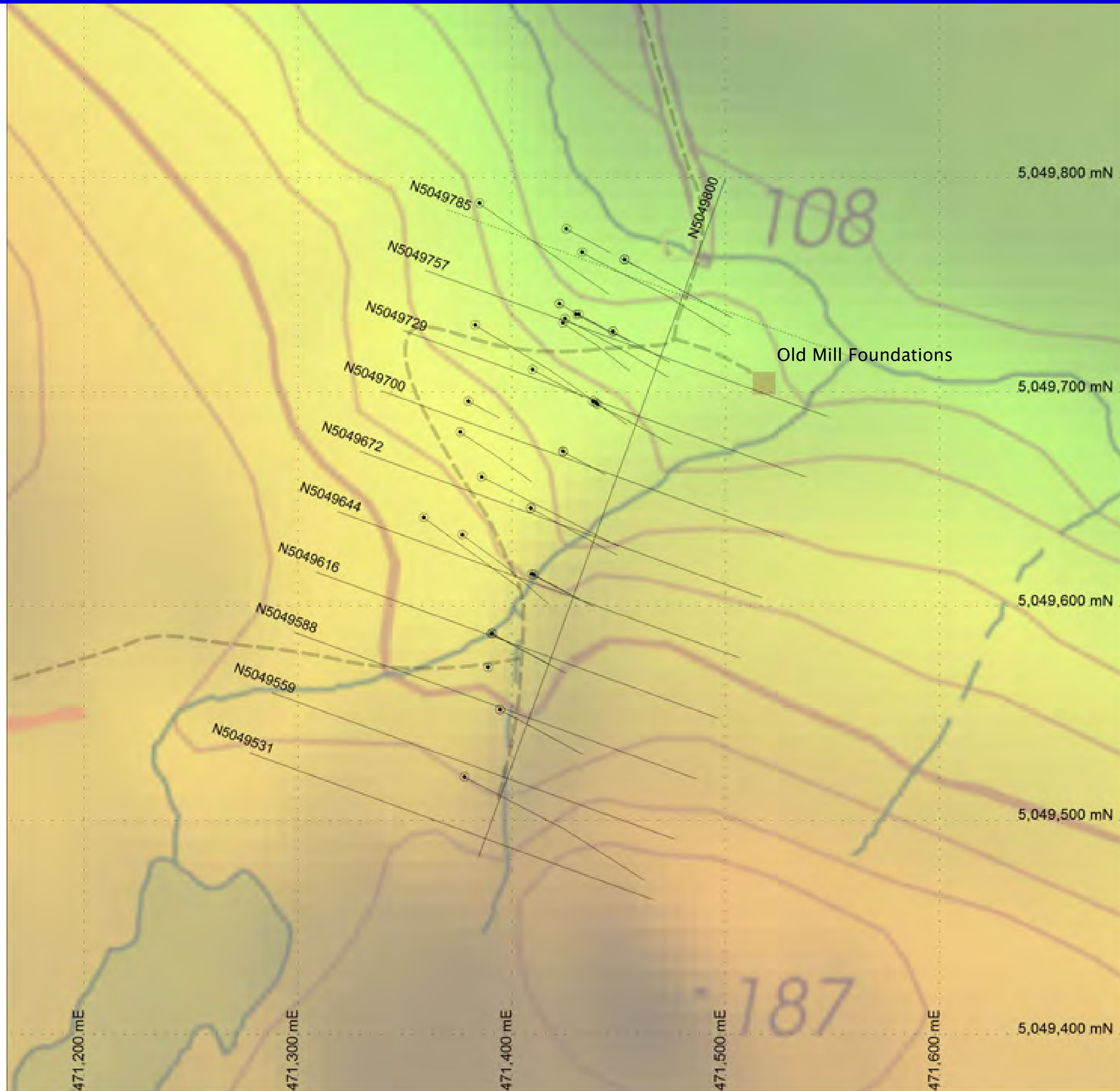
The discrepancy observed between the 1951-52 results and the 2017 assays is mainly due to the difference in the length of core sampling and the different methods of assaying. 2017 core sampling followed the geology and mineralization with a minimum of 0.30 m core length. The majority of the core samples were 2 m long while in the 50's, they did not exceed 5 feet (1.50 m).

## 6.6.8. 2017 Mineral Resource Estimations

### 6.6.8.1 Preliminary Treatment

#### 6.6.8.1.1 Geological Modeling

Modeling of the mineralisation is done in 3D. The orientation of the graphite bearing



**Sources:** database from the Government of Canada “Géogratis” web site and from the Quebec Government “Géoboutique” web site.

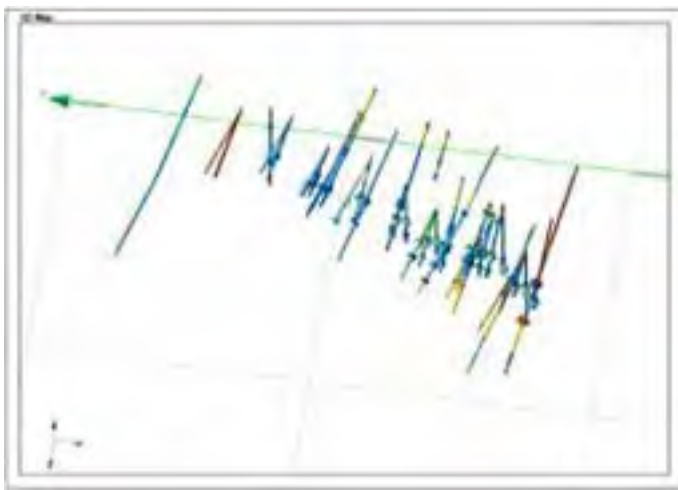
**SCALE : 1: 2000**

**FIGURE No 12: 2017 Cross Sections**

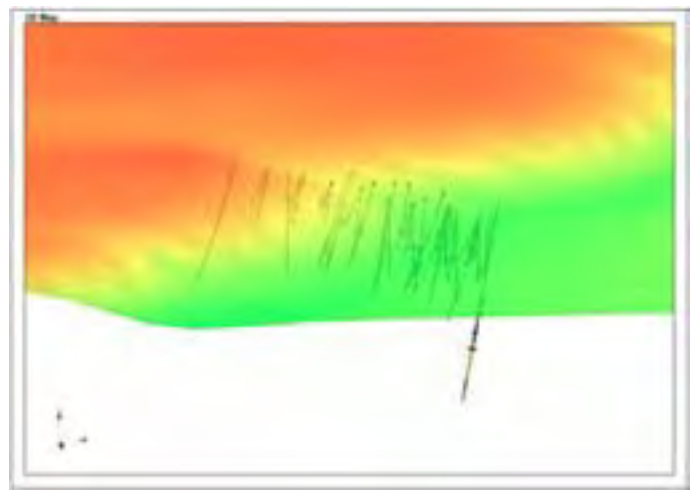
# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 6: HISTORY (cont.)

system (Zone) is evaluated to have a trend of  $200^{\circ}/60^{\circ}$ . This Zone appears to present a “Z” type crenulation folding indicating a possible anticlinal isoclinal fold nose to the NE. This Zone is located within a felsic gneissic unit of possible metasedimentary origin bordered to the east and west by quartzite layers. In addition, the Zone appears to be limited to the north and to the south by easterly running diabase dykes. There is no evidence that the Zone is related to a fault structure (**FIGURE No 11**).



View 3D, looking  $260^{\circ}/-60^{\circ}$

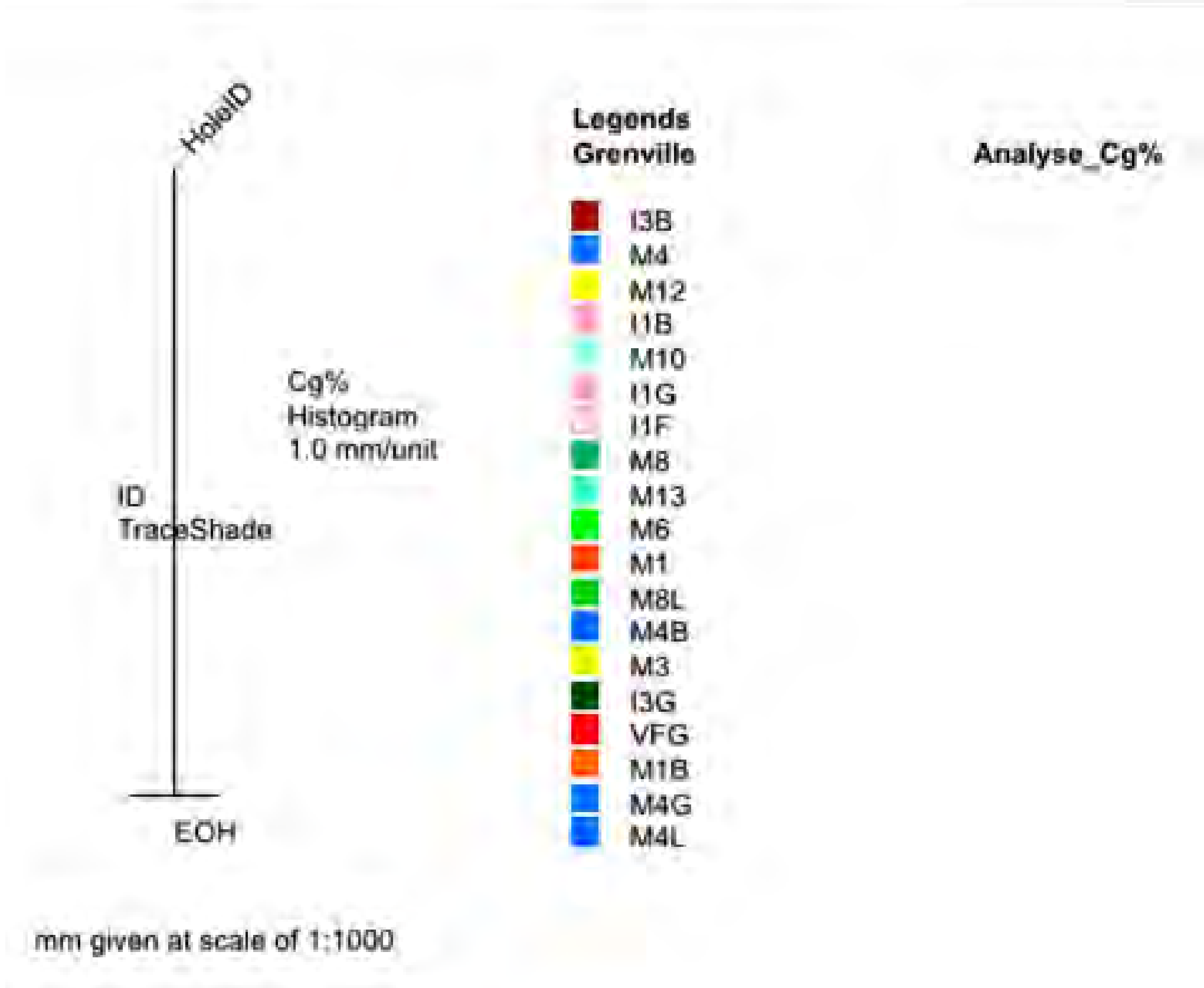
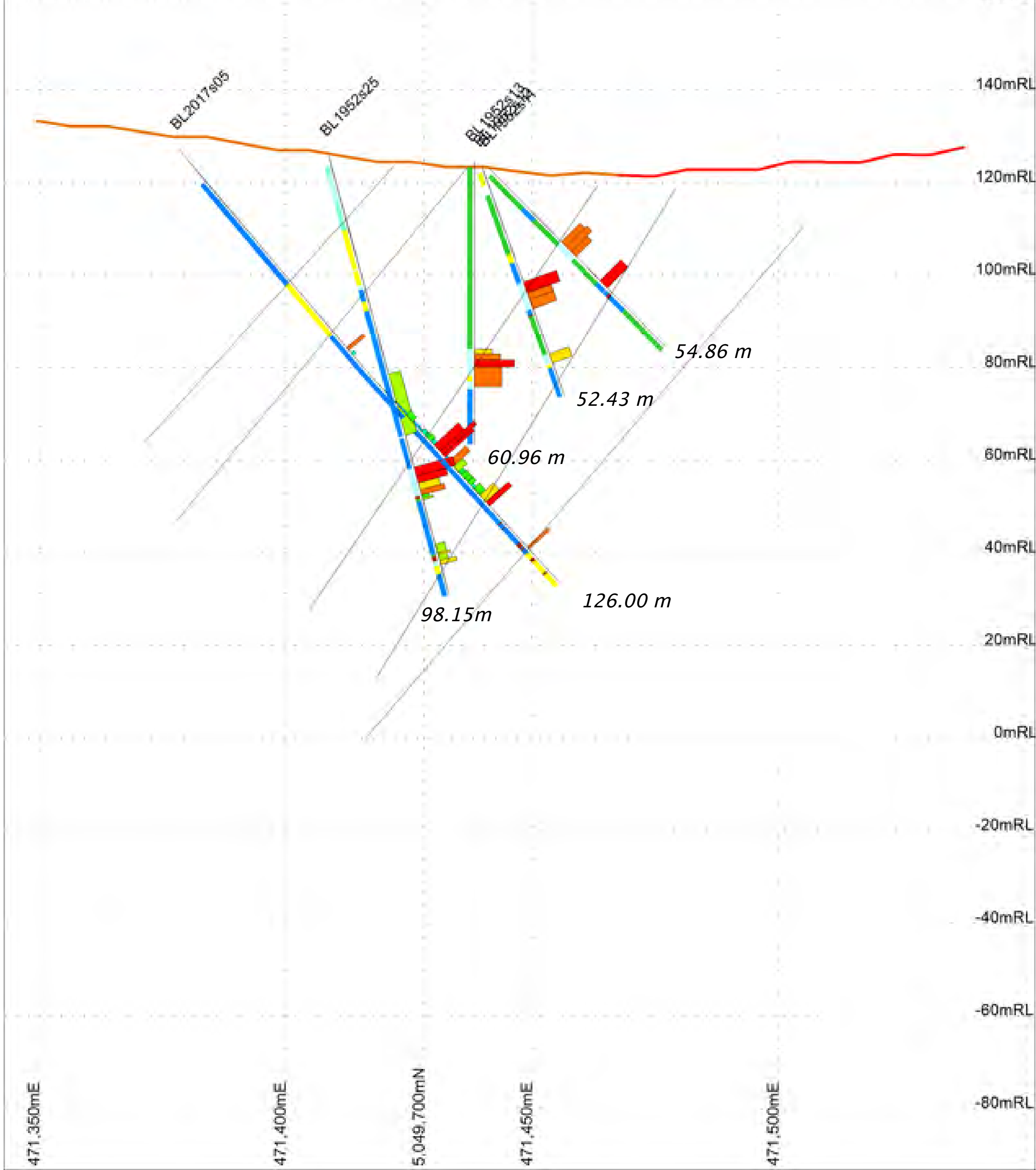


View 3D, looking  $270^{\circ}/-15^{\circ}$

### 6.6.8.1.2. Section registration

Considering the geological model, the cross-section set is adjusted to an azimuth of  $120^{\circ}$  with a view to the NNE. This orientation is slightly different than the historical old section that used an azimuth of  $118^{\circ}$  (**FIGURE No 12**).





SCALE : 1:1000

FIGURE No 13: GEOLOGICAL CROSS SECTION N5049729

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## Item 6: HISTORY (cont.)

**FIGURES No 13 and 14** show sections with the adjusted location of historical holes: Section N5049291 (N5), at a scale of 1:5 000 and Section N5049785 (N7), at the same scale.

### Corresponding sections, actual versus historical:

HISTORICAL	2017 SECTIONS	BLOCK RANGES
N1	N5049616	5049575 to 580
N2	N5049644	5049605 to 610
N3	N5049672	5049635 to 640
N4	N5049700	5049665 to 670
N5	N5049729	5049695 to 700
N6	N5049757	5049725 to 730
N7	N5049785	5049755 to 760

### 6.6.8.1.3. Intersection length standardization

Pondered adjustment of the DDH assay length to 1 metre vertical equivalent to 0.5m true width.

### 6.6.8.2. Methodology

After several methodology tests (Dections, Voronoï, Delaunay, Kriging, etc.) the Author determined that the block model construction using the IDW interpolation is the most adequate method to evaluate the resource.

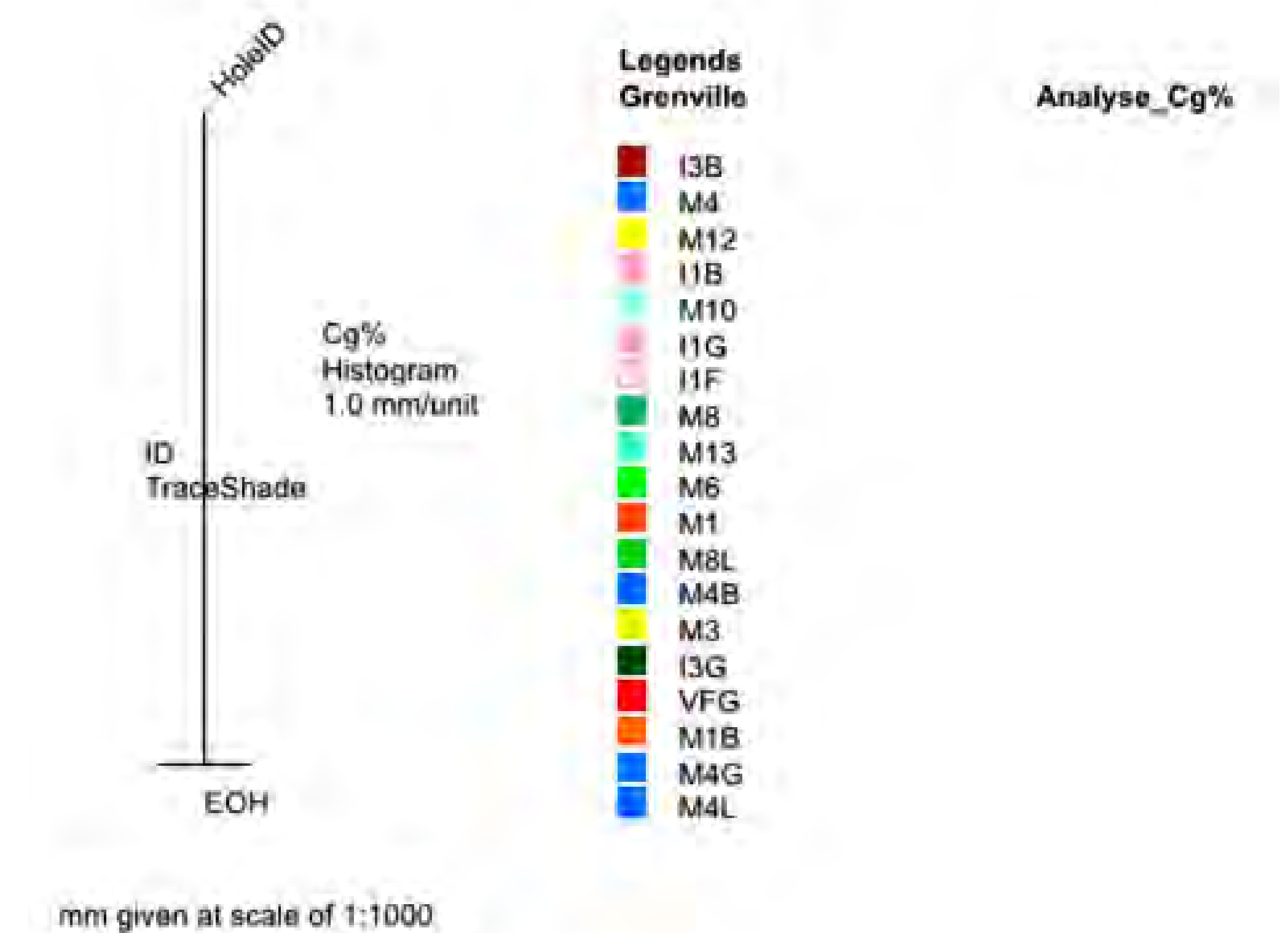
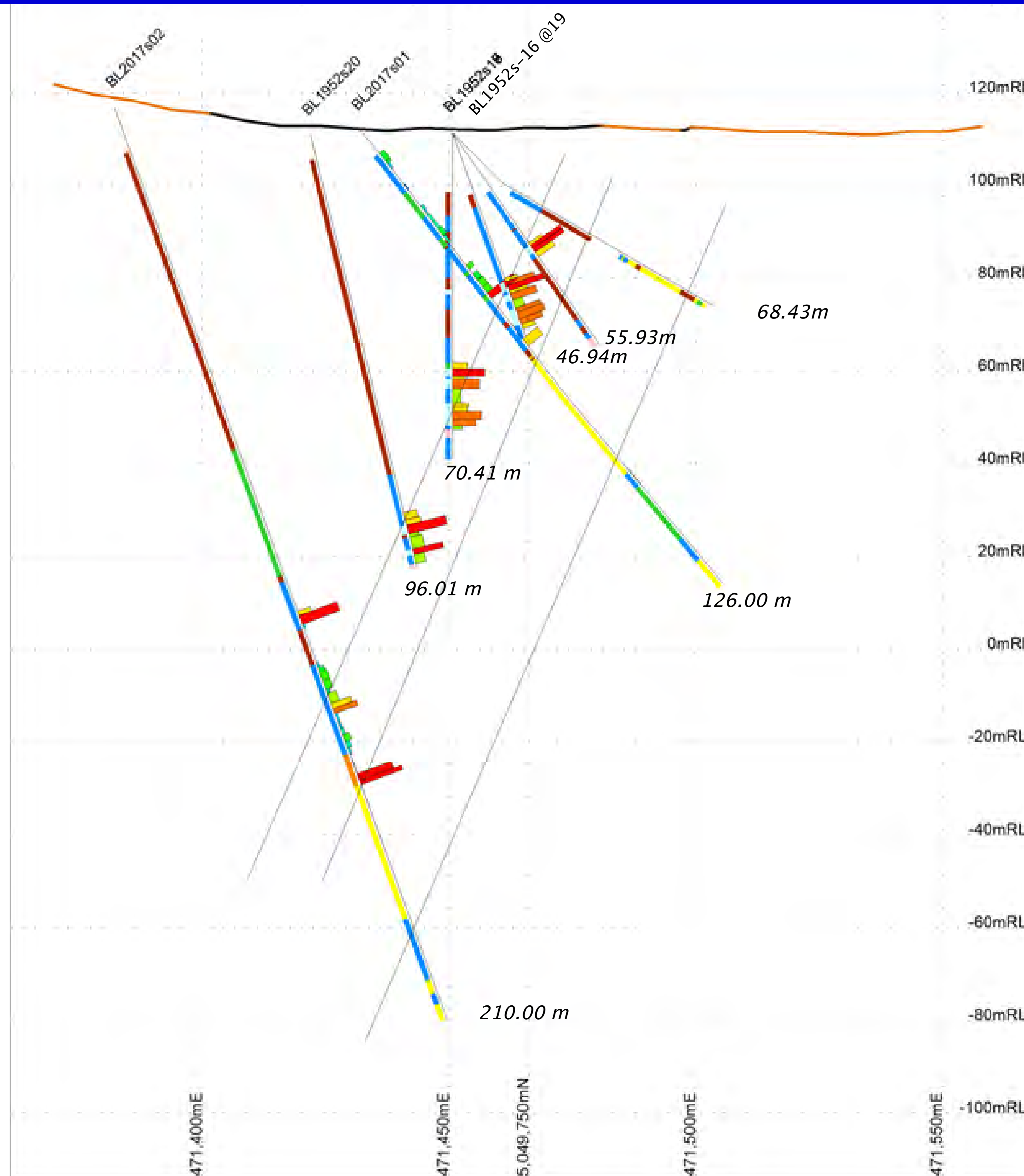
#### 6.6.8.2.1. Block Model

Assays from drill hole surveys are spatially interpolated and each punctual value generated are attributed to a defined 3-dimensional volume (block).

#### 6.6.8.2.2. Inverse Distance Weighting

Inverse distance weighting (IDW) is a type of deterministic method for multivariate interpolation with a known scattered set of points. It is the simplest interpolation method.

A neighborhood about the interpolated point is identified and a weighted average is taken of the observation values within this neighborhood.



SCALE : 1:1000

FIGURE No 14: GEOLOGICAL CROSS SECTION N5049785

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## Item 6: HISTORY (cont.)

The weights are a decreasing function of the distance. The user has control over the mathematical form of the weighting function, the size of the neighborhood (expressed as a radius or a number of points), and in addition to other options.

### 6.6.8.2.3. Parameters

The following is a list of the parameters used to grid the resource estimate:

Density- Specific Gravity:	2.6		
Gridding technique:	Inverse distance weighting		
Coincident points:	Average		
Null Value / Background:	0		
Grid Geometry	Size	Rotation	
	m	°	
	X	0	
	Y	0	
Z	20		
Anisotropic Search	Major Axis	Minor Axis	Depth Axis
Elliptical	30	30	1
Bearing Inclination Tilt	20	0	120
Search sectors	Number	Min Points	
	1	2	
Weight model	Power density	Correction	
	2	elliptical weighting	
UTM Clipping	East (m)	North (m)	Elevation (m)
Max	471350	5049750	Topo
Min	471510	5049550	-80

### 6.6.8.3. Resource Evaluation Results

After several methodology tests, it has been determined that the Inverse Distance Weighting (IDW) interpolation was the most adequate method to evaluate the resources. Several low cut-off grades were chosen and applied for the block model. With a prioritization of the grade and considering the optimization of the continuity of the mineralized zone, the low cut-off grade of 3.5% Cgp was retained.



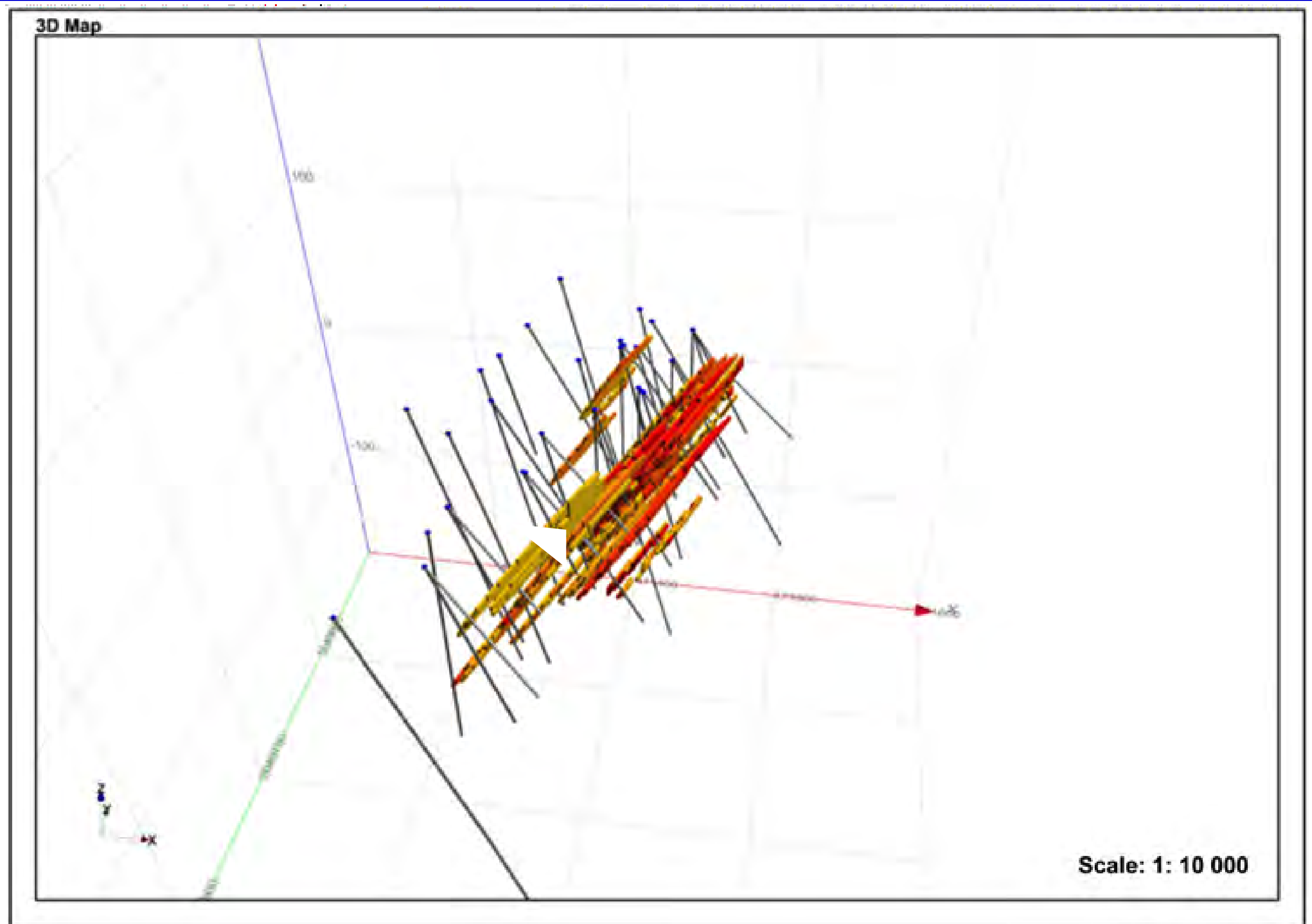


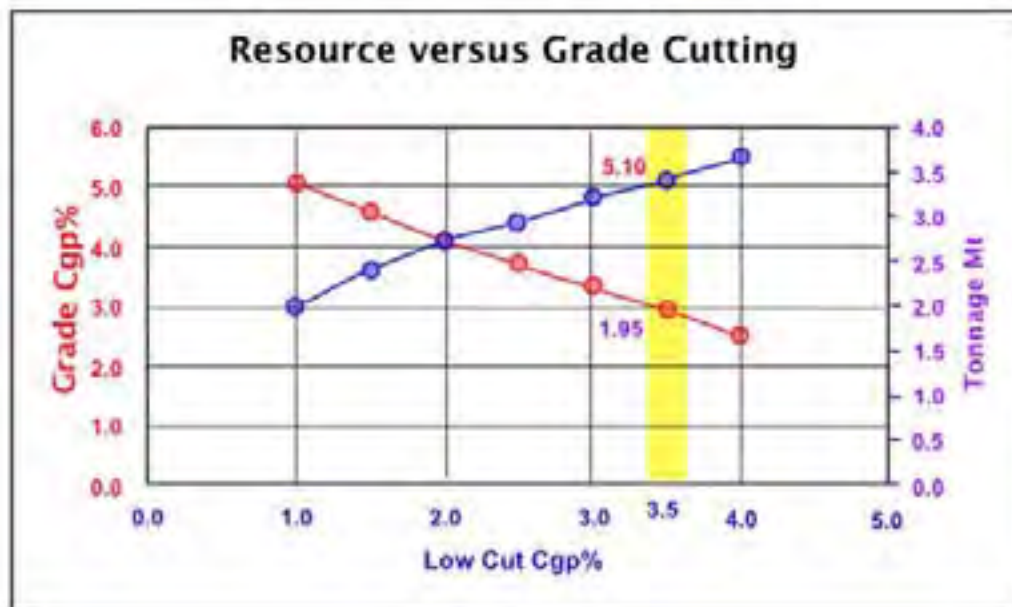
FIGURE No 15: 3D Base Case Resource blocks

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## Item 6: HISTORY (cont.)

**TABLE No 6**  
**Low Cut off Grades for the Block Model**

Low Cut	Volume Mm <sup>3</sup>	Tonnage Mt	Grade Cgp %
1.0	1.30	3.38	3.0
1.5	1.17	3.04	3.6
2.0	1.05	2.73	4.1
2.5	0.95	2.47	4.4
3.0	0.85	2.21	4.8
<b>3.5</b>	<b>0.75</b>	<b>1.95</b>	<b>5.1</b>
4.0	0.64	1.66	5.5



**This permits to calculate a mineral resource of 1 950 000 tonnes averaging 5.1% Cgp.**

This scenario is also identified as the base case for an Indicated Mineral Resource.

Several low cut off grades for the block model are presented on page no 46. All assays measures are within a 25m influence radius.

**The Mineralization is classified as Indicated Mineral Resource** considering the nature,

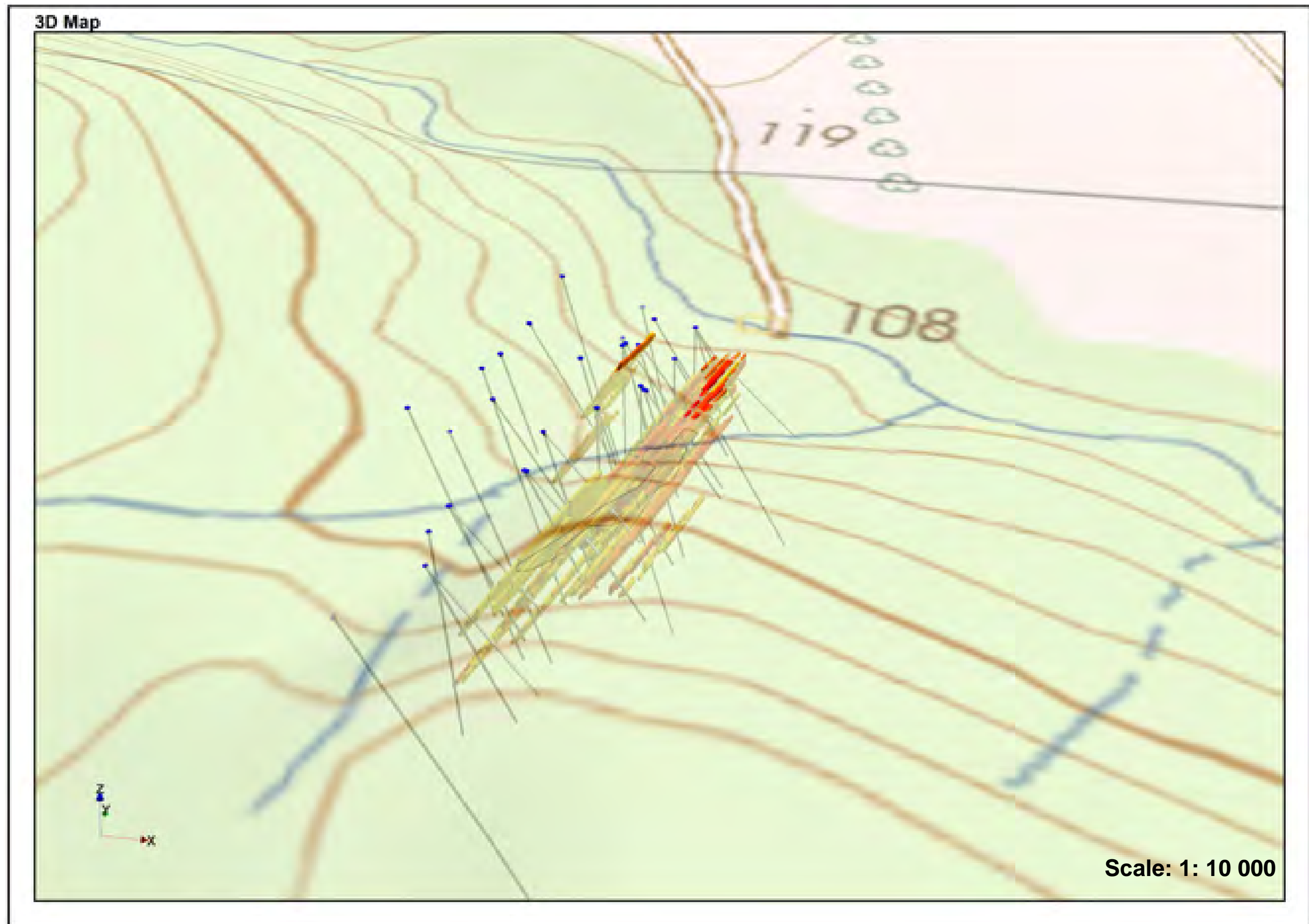


FIGURE No 16: 3D Base Case Resource blocks, View at Az 350° and dip at -40°

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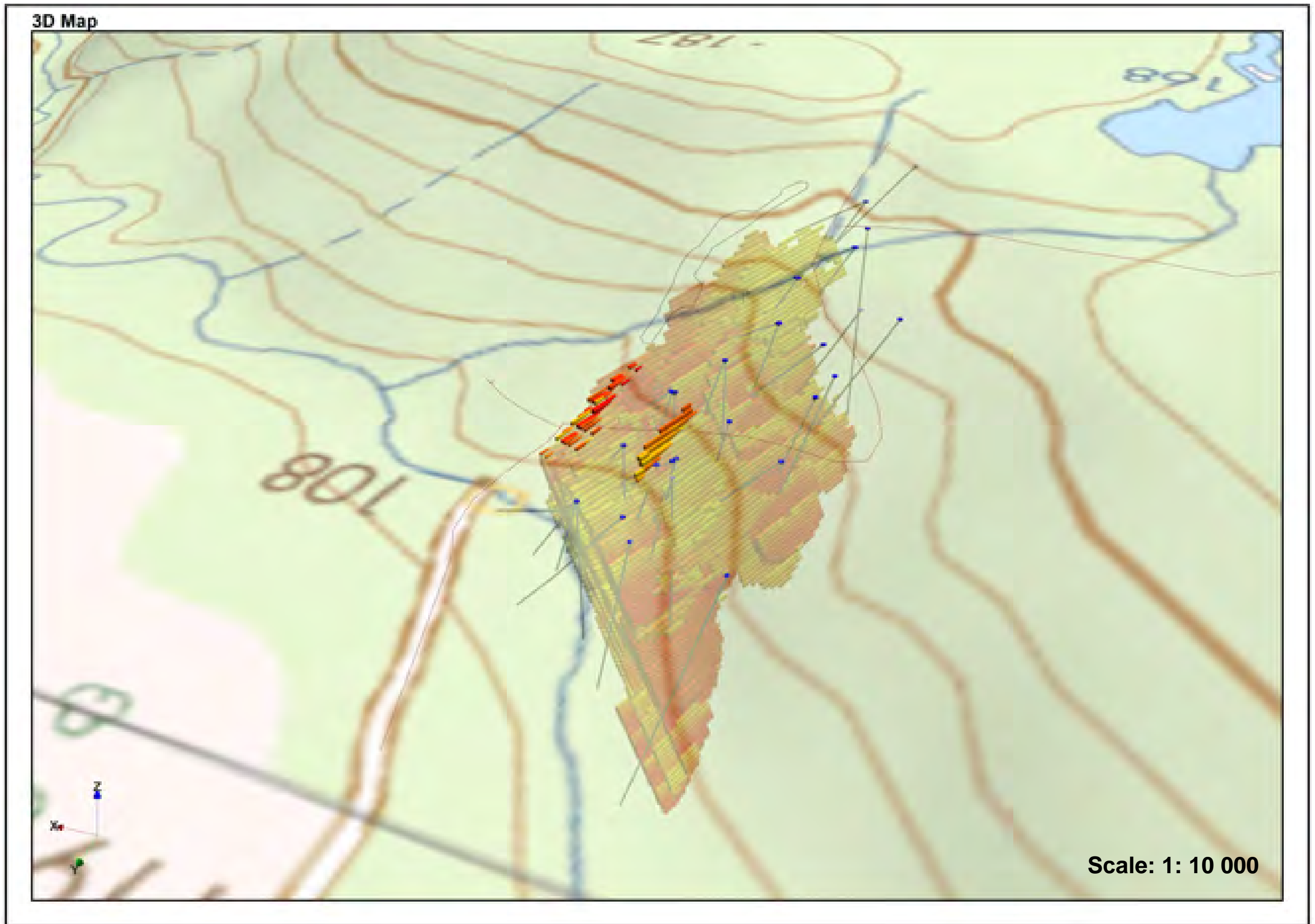
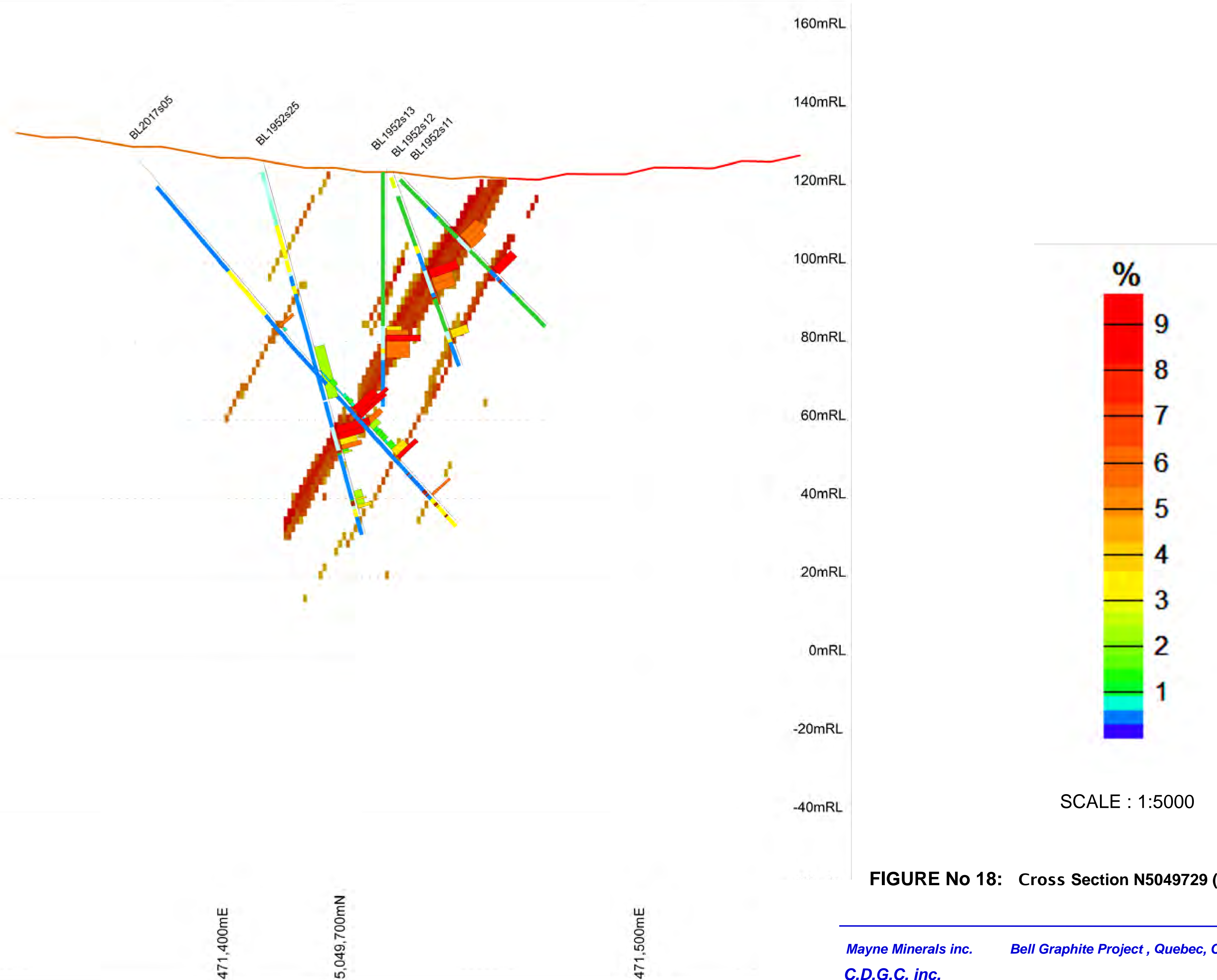


FIGURE No 17: 3D Base Case Resource blocks, View at Az 160° and plunge at -35°





**FIGURE No 18: Cross Section N5049729 (N5), Blocks > 3.5% Cgp**

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 6: HISTORY (cont.)

quality, quantity and distribution of data, allows for a confident interpretation of the geological framework and reasonably assumes the continuity of mineralization.

The Author recognizes the importance of the Indicated Mineral Resource category to the advancement of the feasibility of the project. An Indicated Mineral Resource estimate is of sufficient quality to support a Pre-Feasibility Study which can serve as the basis for major development decisions.

### 6.6.8.3.1 Base Case

With a prioritization of the grade and considering the zone continuity optimization, the Author considers that the 1 950 000 tonnes at 5.1% graphite, is the preferred scenario. This one is also identified as the base case for an Indicated Mineral Resource.

The figures (**FIGURE No 15 @ FIGURE No 17** included) show the graphite deposit in 3D with all the drill holes delineating the Indicated Mineral Resources.

3D Base Case Resource blocks, 1/10000, view UTM angle 352° plunges at -40° and view at 160° at a plunge of -35°.

### 6.6.8.4. Quality control

Visual observation on sections confronting the grade assay and the coincident estimated block does not present any bias. Some blocks that present a deficiency are related to the distance of the diamond drill holes to the projection plane. See Figure No 16: Section N5049729 (N5), block >3.5% C<sub>gp</sub>, 1/5000.

### 6.6.8.5. Observations, Discussions and Interpretation

The Author considers that the project is a reasonable prospect for eventual economic extraction. The zone is heavily transposed but there is a good continuity even at high cut off grade. The metallurgical recovery, processing method and mining do not seem to be problematic, since the project has been the subject of a profitable exploitation in the past. Some evidences of the presence of a flotation plant in use a Century ago are still visible. Other factors like royalty payments, commodity price or product value, mining and, processing and general and administrative costs are not evaluated but do not seem to be actually problematic. The grade, the thickness and the dip of the zone appear to be the most influential factors which could affect an economic extraction.

The Author is not aware by any known environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors that could materially affect the mineral resource estimates.

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 6: HISTORY (cont.)

### 6.6.8.6 CIM Definition Standards Statement

Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories. An Inferred Mineral Resource has a lower level of confidence than that applied to an Indicated Mineral Resource. An Indicated Mineral Resource has a higher level of confidence than an Inferred Mineral Resource but has a lower level of confidence than a Measured Mineral Resource.

A Mineral Resource is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction.

The term Mineral Resource covers mineralization and natural material of intrinsic economic interest which has been identified and estimated through exploration and sampling and within which Mineral Reserves may subsequently be defined by the consideration and application of Modifying Factors (these include, but are not restricted to, mining, processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social and governmental factors).

## 6.7. The R. Rosenblat' Claims (2012-2020)

Since 2011, the region has experienced a revival of graphite exploration, as a response to the steady rise of graphite prices over that period. Wherever permitted, the Buckingham Township and surrounding townships were covered with active claims, some of which surrounded the east, north and south limits of the Bell Graphite Project. Bell Graphite Project was bounded to the north, east and south by Robert Rosenblat, a prospector from Vancouver, BC. In August 2013, a heliborne magnetic (MAG), spectrometric (SPEC) and time-domain electromagnetic (TDEM) survey was flown for Shield Gold Inc., over their Lochaber Township Properties, which consisted of two claim blocks: Bell Block and Powerline Block. The Bell block was located next to the east limit of the SJL's Bell Graphite and the survey overlapped the first half of the two easternmost claims (Dubé 2013 - GM68257). These results confirm the north south orientation of the geological units and the existence of a WNW oriented graben as well as other structural features.

### 6.7.1. Helicopterborne magnetic, spectrometric and TDEM survey (2013)

**PROSPECTAIR** conducted a heliborne magnetic (MAG), spectrometric (SPEC) and timedomain electromagnetic (TDEM) survey for the mineral exploration company Shield Gold Inc. on their Lochaber Township Properties. Two survey blocks were flown for a total of 478 km. The Bell block totalled 296 km of flight lines.

The Bell and Powerline blocks were flown with traverse lines at 75 m spacing and oriented N090.

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 6: HISTORY (cont.)

The control lines were oriented N000, spaced every 750 m. The nominal survey height for the MAG-SPEC-TDEM survey was set to 85 m, but the active topography in the area resulted in an average height above ground of the helicopter of 92 m, the mag sensor and receiver coil were at 67 m, and the transmitter loop was at 43 m. The average survey flying speed (calculated equivalent ground speed) was 34 m/s. The survey area is mostly covered by flat farm lands towards the south, and is gradually covered by forest, gentle hills and a few small lakes towards the north. This is typical of the Outaouais region. The elevation is ranging from 46 to 283 m above mean sea level (ASL) within the blocks.

### 6.7.1.1. Overview of Magnetic data (FIGURE No 19)

The Total Magnetic Intensity (TMI), presented in **FIGURE No 19**, is relatively settled, with some local magnetic variations. Overall, the TMI varies from 54059 to 55610 nT, with an average of 54321 nT.

Magnetic highs are mainly oriented from N-S to NNE-SSW, but a few narrow magnetic lineaments are oriented in a general EW direction, mainly in the Bell block, which have been observed by the Author to correspond with late diabase dykes.

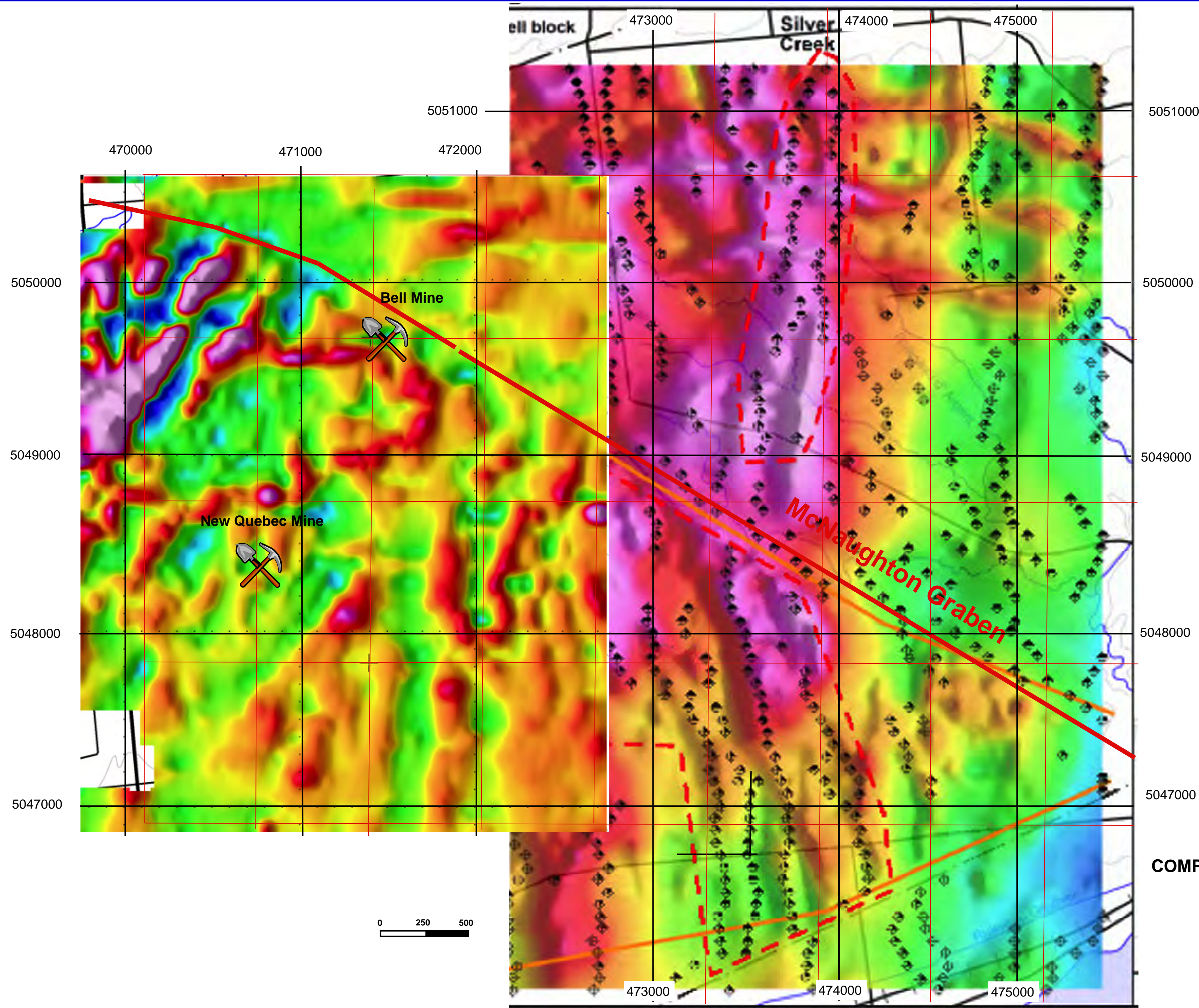
Some magnetic highs could be caused by pyrrhotite bearing structures, but generally they correspond to metamorphosed volcanic rocks rich in biotite, hornblende and magnetite.

In some areas, the magnetic response is changing abruptly, which denotes major faults crossing the blocks. These interpreted faults are shown as thick orange lines on the figures. Shorter wavelength anomalies are greatly enhanced on the First Vertical Derivative (FVD) of the Total Magnetic Intensity. Since the FVD attenuates longer wavelength anomalies, it is the preferred product for structural interpretation. Structural features can be inferred from cross-cutting of magnetic lineaments, or abrupt change in lineament's wavelength. As well, narrow magnetic highs or lows can sometime indicate faults or shear zones enriched or impoverished in magnetic minerals.

### 6.7.1.2. Overview of Time-Domain Electromagnetic data (FIGURE No 20)

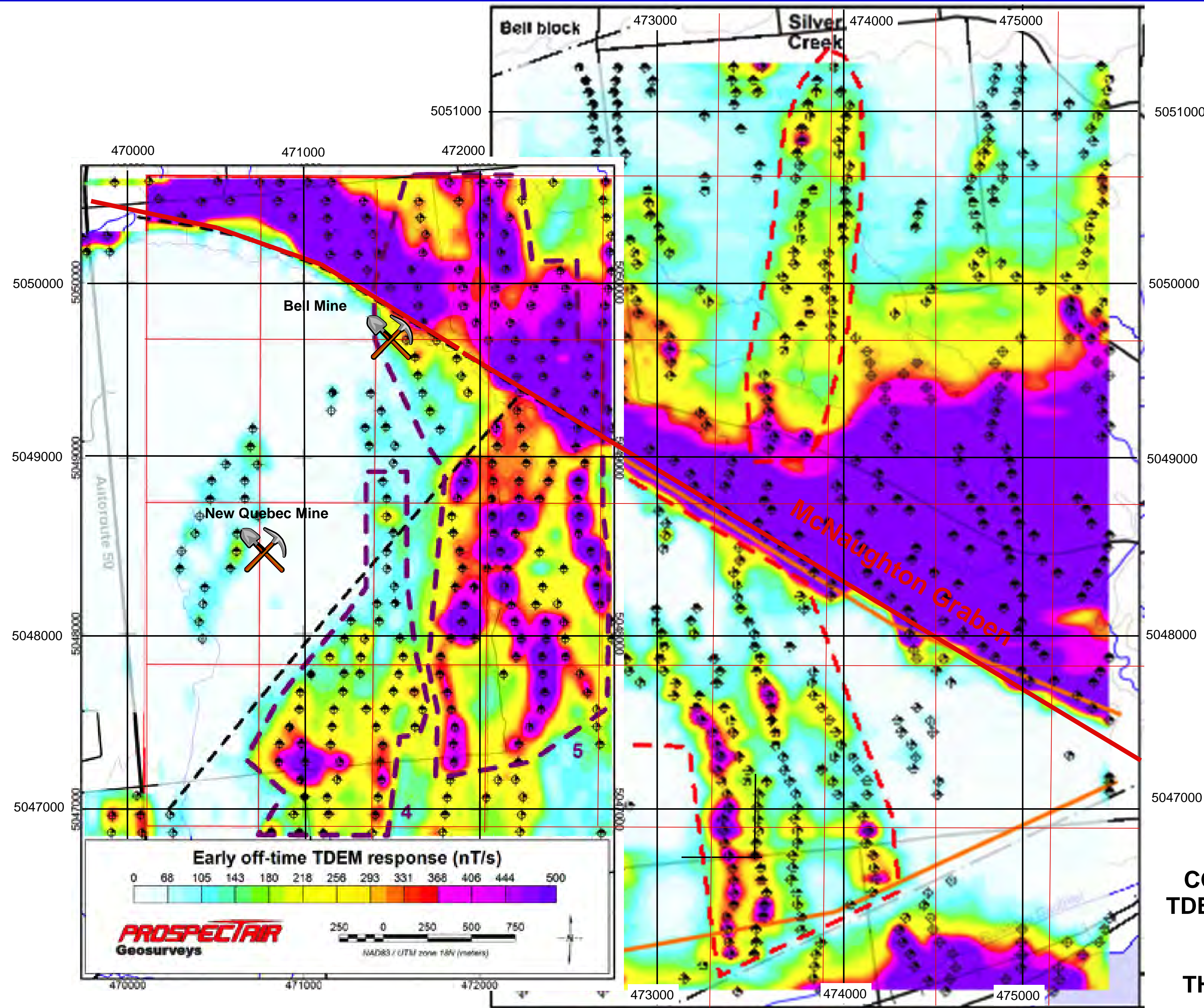
In 2013, on the Bell block, 611 EM anomalies were identified, classified and listed (GM 68257). Calculating the value of the time constant for low amplitude anomalies that have their first off-time channel (channel 13) amplitude smaller than 75 nT/s can yield unreliable results given the weak response. All marginal/weak anomalies with time-constant lower than 0.25 msec are included in a group represented by an empty circle on the anomaly map. In total, 71 anomalies were reported in this class for the Bell block. The remaining anomalies were classified in 4 other groups, with time-constant considered small (0.25 to 0.50 msec, 334 anomalies on Bell), intermediate (0.50 to 0.75 msec, 195 anomalies on Bell), strong (0.75 to 1.00 msec, 10 anomalies on Bell) and very strong (over 1.00 msec, 1 anomaly on Bell).





**FIGURE No 19**  
COMPILATION OF THE TOTAL MAGNETIC INTENSITY AND  
TDEM RESPONSE ON THE SJL'S BELL  
GRAPHITE PROJECT  
AND ON  
THE ROSENBLAT'S BELL PROJECT





**FIGURE No 20**  
**COMPILATION OF THE EARLY TIME**  
**TDEM RESPONSE ON THE SJL'S BELL**  
**GRAPHITE PROJECT**  
**AND ON**  
**THE ROSENBLAT'S BELL PROJECT**

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 6: HISTORY (cont.)

Since Shield Gold and Saint Jean Carbon flew the same heliborne surveys with the same instruments, the Author decided to compile the results of the two surveys together. **FIGURES No 20 and 21** represent the compilation of the magnetic and TDEM surveys respectively.

It is recommended to perform a reconnaissance of the conductive area in search for outcrops that could help confirm the source of TDEM anomalies.

### 6.7.1.3. Overview of Spectrometric Data (FIGURE No 21)

Since gamma-rays are quickly absorbed by matter, the response measured by the airborne system only comes from the first few centimetres of the ground. This has implication when interpreting spectrometric results and the radiometric method is therefore treated as a surficial exploration tool, with no penetration.

Water accumulation in topographic lows attenuates most of the signal, and the response is therefore partly controlled by non-geological elements. Nonetheless, it is a very useful method for discriminating different rock types on the basis of their radioelements content, and can thus be used in support to geological mapping efforts. It is also an effective method at detecting specific rock alteration patterns.

On the Bell block, the potassium concentration is significantly lower along the Ruisseau McNaughton depression, as well as the gentle hill at the north end of the block, towards Silver Creek village. The response is relatively stronger in the southern half of the block, south of the interpreted fault running along Ruisseau McNaughton (Brady Creek).

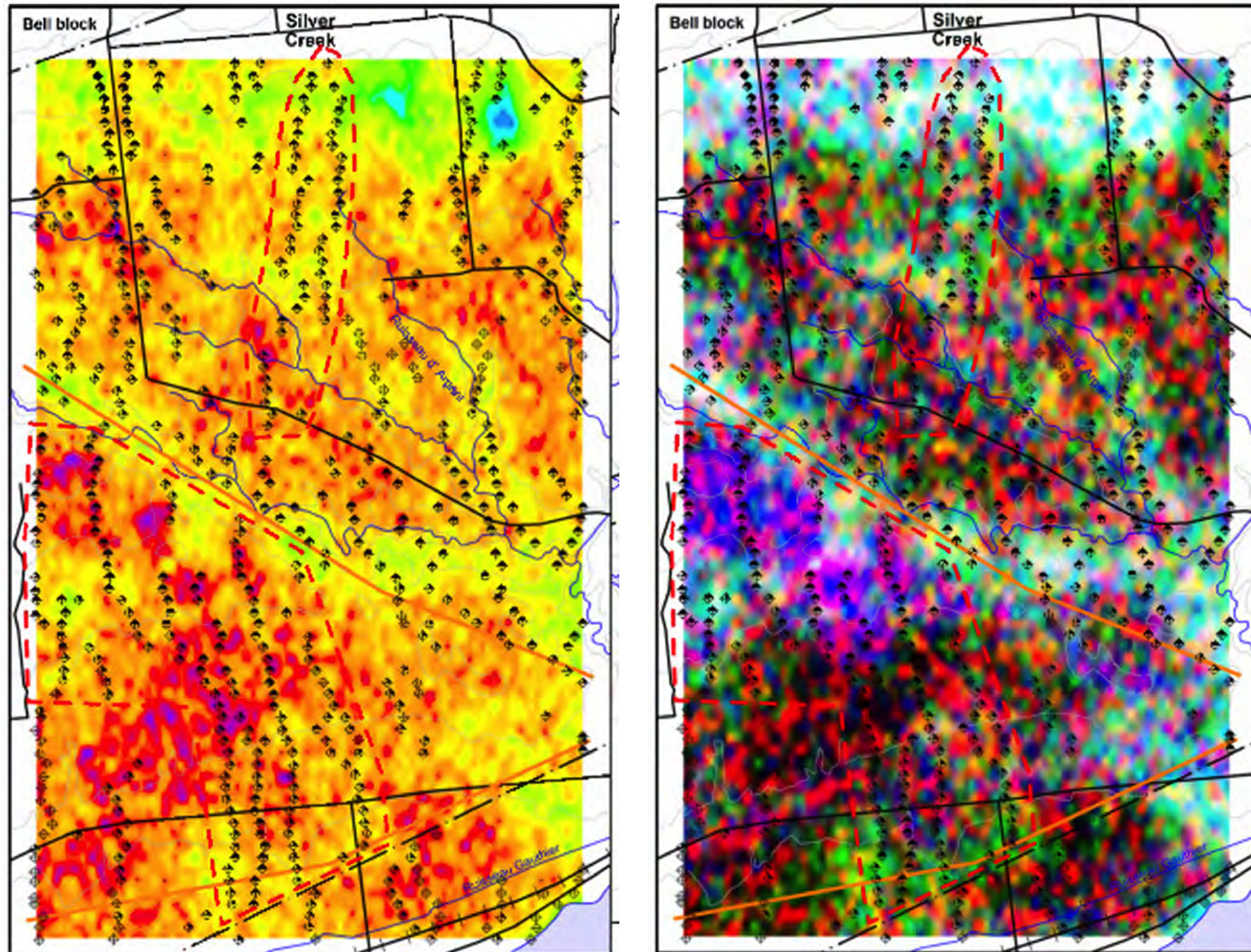
The spectrometric ternary image (**FIGURE No 21-B**) is especially useful at identifying areas with radioelements enrichment, and their association/dissociation. The ternary image shows strong potassium, uranium and thorium concentration in pink, light blue and yellow, respectively. Uranium-thorium, thorium-potassium and potassium-uranium associations appear in green, red and dark blue, respectively. Areas with strong concentration in all elements are shaded and areas with weak concentration are shown in very light colors, almost white in some places.

The areas enriched in potassium generally appear equally enriched in other radioelements on this image. The only area where potassium clearly dominates the spectrum is located south of the northern most interpreted fault on the Bell block, over the small hill south of Ruisseau Brady.

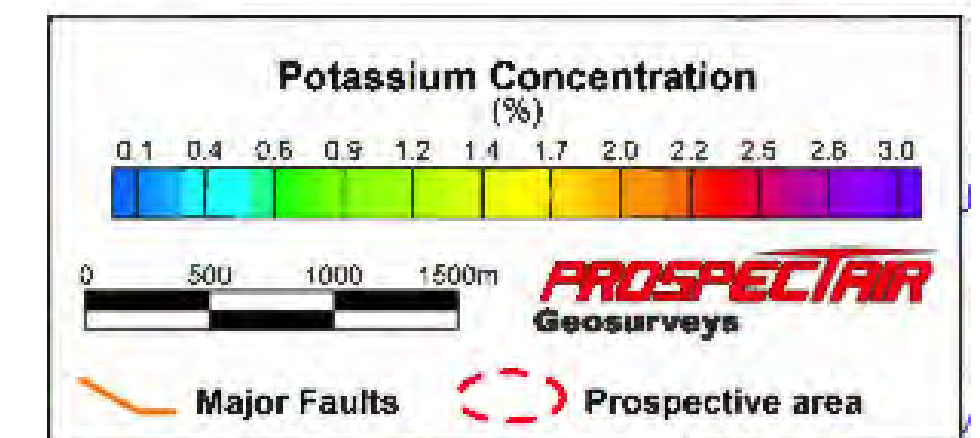
### 6.7.2. Interpretation of the Helicopter-borne Geophysical survey and Beep Mat prospecting (2014)

GM 68461 was mainly prepared for assessment work. It contains two phases: An interpretation of the Helicopter-borne survey and a ground verification of some selected EM anomalies with a Beepmat survey.





(A)



(B)

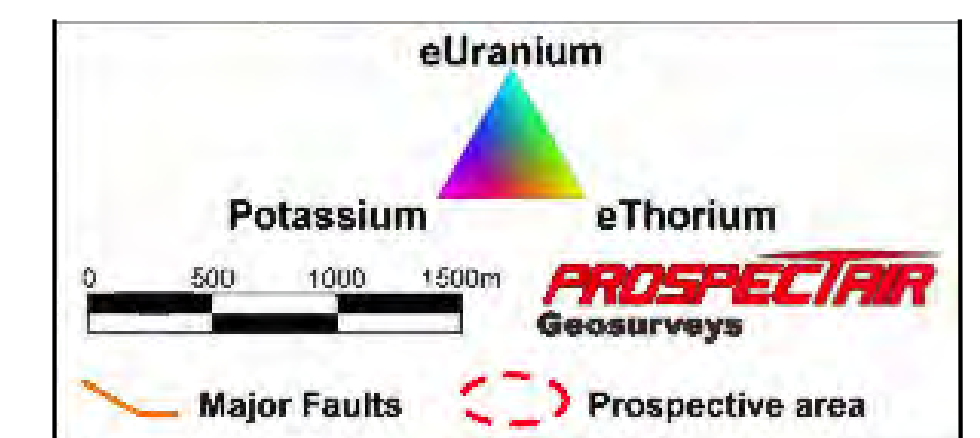


FIGURE No 21: POTASSIUM CONCENTRATION AND SPETROMETRIC TERNARY IMAGE



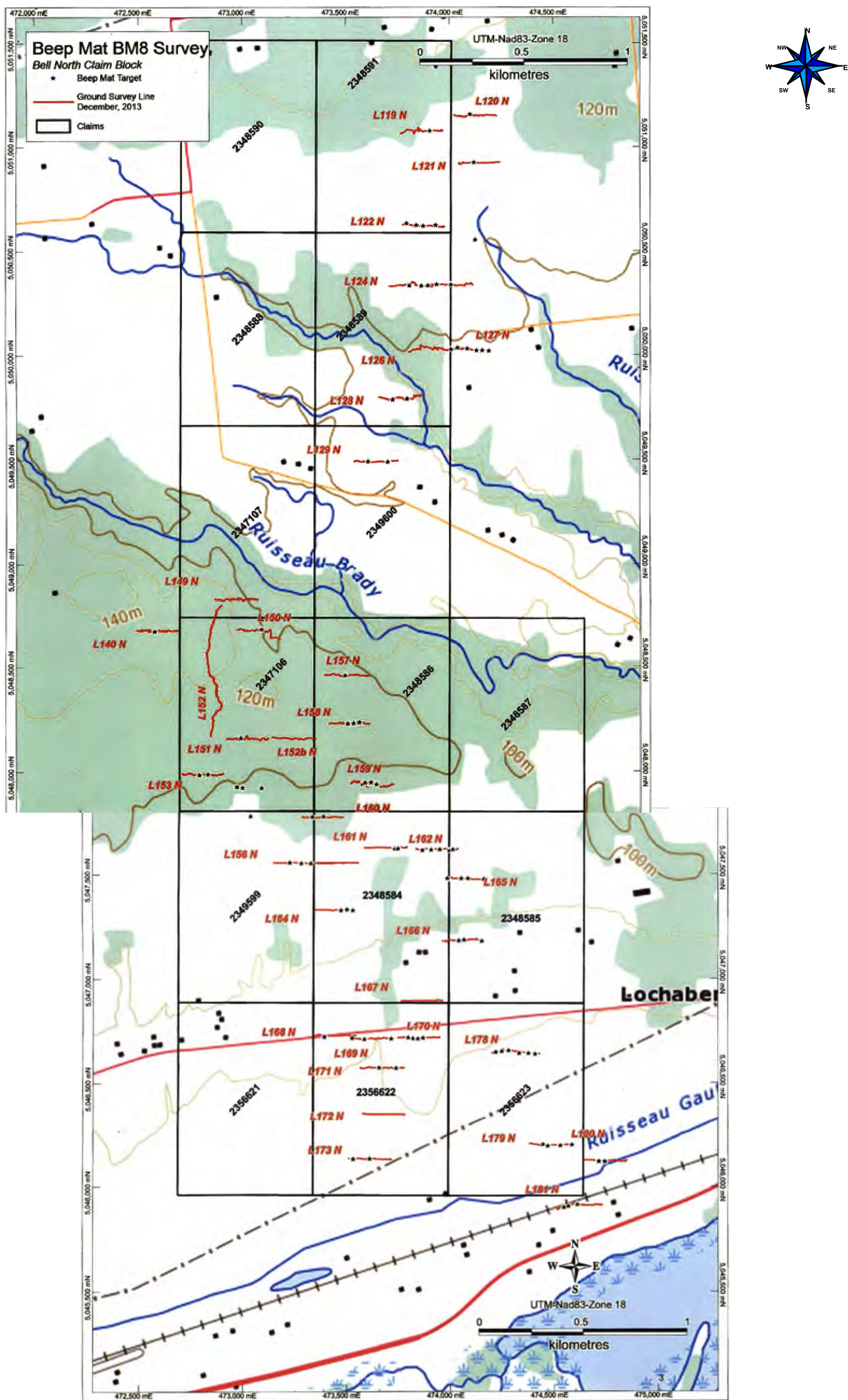
# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 6: HISTORY (cont.)

### 6.7.2.1 Interpretation

- A total of 85 discrete EM conductors, lying mostly along multiple clear linear trends/conductive horizons, have been identified as possible graphite targets on the Bell block.
- The locations of one historical graphite occurrence in the area has been identified and plotted on the Bell/Powerline interpretation maps. This is not coincident with either the Bell or Powerline blocks, or any historical local EM data. It is unknown if it has a conductive signature.
- Fourier enhancement of the magnetic data was attempted with various filter methods, but these data did not lend themselves to clear enhancements. Again, only the High Pass (500m) filter enhancement was worthwhile and highlighted some of the N-S linear trends in the magnetic data. The magnetic data implies a less seriously deformed nature of the rocks on the Bell block, as compared with the Buckingham block. Some roughly E-W striking dikes are implied by the magnetic data at the north end of the bell block, and E-W flight line parallel levelling stripes are evident in the central-east part of the block.
- The Digital Elevation Model has been plotted with all identified EM targets. Most targets are again located on high ground, away from the clay dominated depressions, which cut the central and eastern parts of the airborne block and (clay in the GSC surficial geology). Some probable late brittle deformational events are visible in the DEM as linear depressions/drainages, mainly with NW-SE strikes.
- The GSC surficial geology map has been plotted on the same map base as the geophysics. Areas with broad strong EM responses, especially on the eastern central half of the block are clearly associated with large surficial clay deposits, and may be fault bounded on the southern side (as indicated by heavy dashed interpretation line). It is very difficult to identify discrete conductive graphite targets in this area, as (structurally or river terrace controlled?) variations in clay thickness can mimic the linear conductive graphite horizons. Though much of the Bell block is mapped as clay covered, much of this may be thin cover given the good N-S linear and magnetic anomaly-parallel conductors identified over much of the block. It is recommended that the EM data Channel 5 be levelled to attempt to remove the obvious flight line parallel striping and separate clay from graphite EM responses in this area.

The EM anomaly shapes indicate either mostly flat-lying or thick vertically dipping causative bodies. A second possible interpretation is some areas is for thin vertical or dipping conductors. Information from mapping on the geology proximal to these types of targets will be important for further interpretation. Many EM anomalies are complexly convolved (mixed) making interpretation difficult in the absence of more detailed geological data.



Source: GM 68461, Report by Martin Ethier, P.Geo.

FIGURE No 22: 2014 BEEP MAT SURVEY CARRIED OUT ON THE BELL BLOCK



# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 6: HISTORY (cont.)

New target locations would have to be identified if these thin targets are of interest or the ground search radii increased during field follow-up, due to the shift in conductor location.

- Highest priority should be given to multiple close targets which are associated with linear roughly N-S magnetic signatures. There is a great deal of along-strike linear continuity for the graphite targets on the Bell block, especially when compared with the magnetic data, indicating that the possible graphite may be of lower metamorphic grade, and have touching (electrically conductive) grains.

- Induced Polarization surveys may be considered in areas with good mapped graphite occurrences and a lack of other geophysical signatures.

### 6.7.2.2. Beep Mat survey

During Summer 2014, Martin Éthier, P.Geo., carried out a Beep Mat survey on the Bell Block. Several TDEM anomalies were selected for a ground check. FIGURE No 22 shows the traverse lines followed by the operator as well as the location of the anomalies.

There is no mention of the results obtained nor the total length of the survey.

The consulting geologist does not mention in his short report if some rock samples were taken in the anomalous areas or not, or what is the possible cause of the conductive anomaly.

### 6.7.3. 2018, Ground TDEM PhiSpy survey, Bell property (FIGURE No 23)

In March 2018, Dynamic Discovery Geoscience Ltd. from Ottawa was retained to manage a ground time-domain electromagnetic (TDEM) PhiSpy survey on the Rosenblat's Bell Property. The survey was performed along available trails and open farm fields in the area. The survey was conducted under the supervision of Mr. Joël Dubé, P.Eng.

The goal of the survey was to identify geophysical responses possibly associated to mineralized graphite occurrences. In particular, the survey aimed at better defining conductors previously detected with an airborne TDEM survey performed in 2013 (GM 68257), in order to guide exploration efforts. Graphite exploitation pits and trenches of the old Bell Graphite Mine are found about 1.0 km to the west of the Property, indicating that some of these airborne conductive anomalies have the potential to be caused by graphite mineralization.

Since the survey area consisted of open farm fields and trails, and of a few patches of forest, it was unnecessary to have lines cut beforehand. The survey path is shown in **FIGURE No 23**.

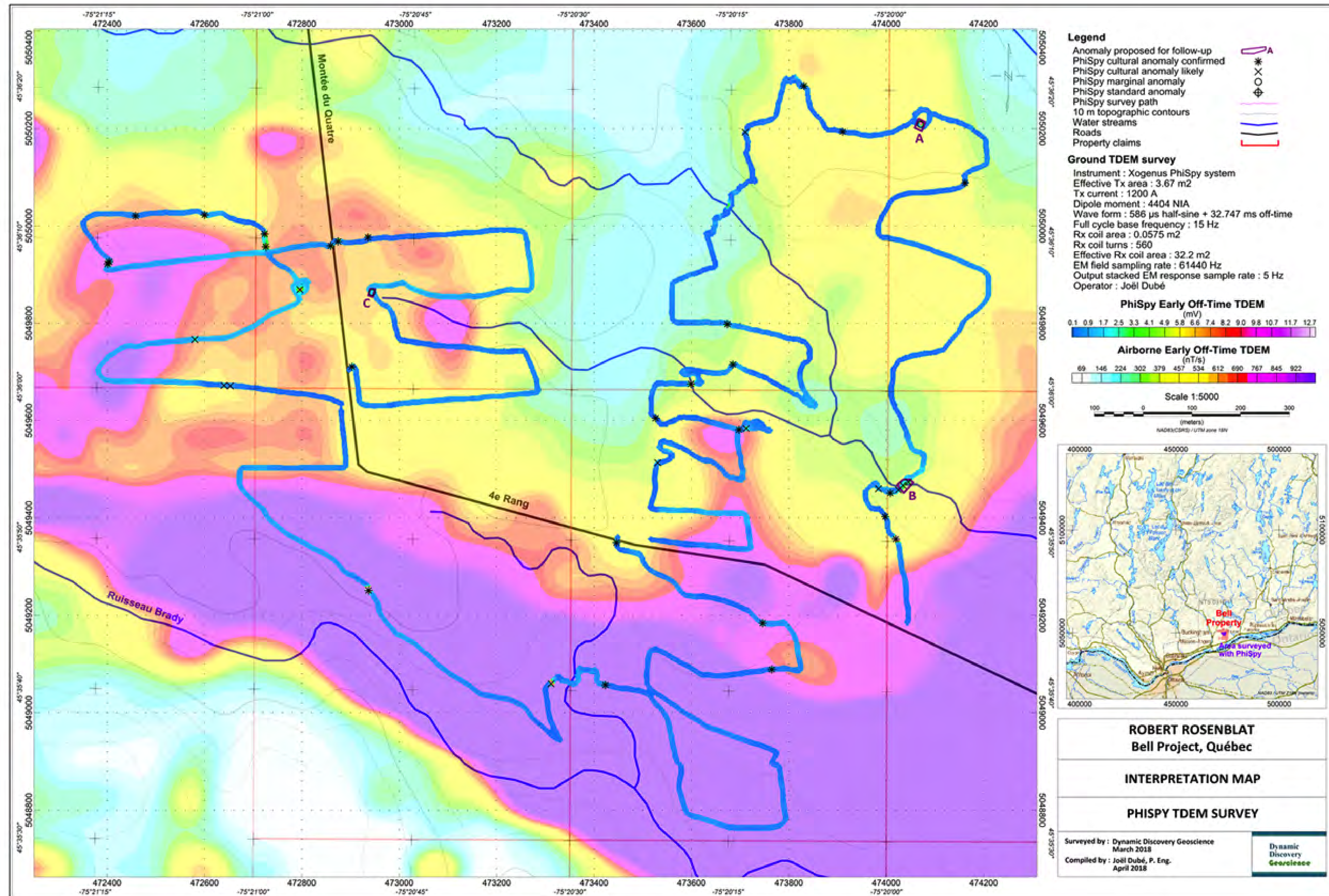


FIGURE No 23: Walking lines of the 2018 PhiSpy TDEM Survey and Interpretation

(Source: QDENR, SIGEOM, GM 70630)



# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 6: HISTORY (cont.)

The portable ground TDEM PhiSpy survey, totalling 12.9 km, was carried out over a single day, under the technical supervision of Joël Dubé, P. Eng. Since the system used is self-contained and records its location continuously, it does not necessarily require to be carried out along chained lines. Lines do not necessitate being very straight as is the case for classic methods involving long wires such as the IP and HLEM methods, and field obstacles can be avoided as a result. Therefore, lines were not identified on the field prior to carrying out the survey, which enabled a lower cost intervention. The data was recorded in continuous mode at a final sampling rate of 5 Hz, resulting in an average sample spacing of 0.18 m and a total of 70,012 data points collected.

The equipment used for the portable ground TDEM survey was the PhiSpy system which is being developed and employed by Dynamic Discovery Geoscience in partnership with Xogenus, in Ottawa, Ontario. Unlike small size EM devices with very limited investigation depth, PhiSpy can reach much deeper conductors and records full TDEM decay curves which can be post-processed and analyzed to retrieve information about the conductance and geometry of conductors.

For the Bell project, 26 anomalies have been classified as “cultural confirmed”, 12 as “cultural likely”, 2 as “marginal” and none as “standard”. Figure 7 shows all of these interpreted conductors.

In a second step, the individual PhiSpy anomalies or group of anomalies that are deemed to have the best potential to relate to bedrock mineralization have been identified and are proposed for follow-up. These selected targets are outlined with a thick burgundy line on the interpretation map, and identified with a single letter. Three areas have been defined and are named A, B and C.

The prospective area A is located at the north end of the surveyed area, within a small forested ditch. It consists of a single marginal conductor. Of the 3 areas defined for follow up, it is the anomaly with the strongest amplitude, but is still considered marginal in absolute terms. It is also lining up with conductors defined with the airborne survey, which suggests a good potential for significant extensions. Because of these characteristics, this area is considered of first priority.

Area B is located at the bottom of a sharp valley where a water stream flows. Even if it consists of 2 anomalies classified as “cultural likely”, there is still a possibility for the source to occur within the bedrock and hence is proposed for follow-up. However it is located further away from conductors defined with the airborne survey, meaning that even if it actually consists of a bedrock conductor, it will be of very limited extents and thus it is considered a lower priority target.

Area C is also located at the bottom of a small valley filled with a stream, not far from the Montée du Quatre road. The anomaly does not present characteristics typical of cultural anomalies because it is of somewhat longer wavelength, and was thus classified as a marginal anomaly. However it is of very low amplitude. It is also located further out from anomalies outlined with the airborne survey and therefore also makes a low priority target.

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 6: HISTORY (cont.)

Note that, despite the best effort analysis of the TDEM response, it is still possible for “marginal” anomalies to be caused by cultural sources, and, likewise, it is also possible for “cultural likely” anomalies to originate from geological sources. As a result, investigation of anomalies must be carried out with this in mind: if pieces of metal are found in the location of a high frequency anomaly, chances are that they represent the source of this anomaly.

Areas where airborne TDEM anomalies are seen but no ground PhiSpy anomalies indicate that the conductive sources are located deeper than the penetration depth of the PhiSpy system, which is limited to about 15-20m. As a matter of fact, it was reported by local land owners that water wells were reaching the bedrock at depth ranging between 15 and 200 feet in the area. This supports that the bedrock was within reach of the PhiSpy system’s influence in some parts of the area. However, since graphite mineralization is often found within local depressions of the bedrock surface, it is possible that the postulated bedrock conductors outlined by the large airborne TDEM system were mostly beyond the reach of the PhiSpy TDEM system.

Also, as it was pointed out in the 2013 report, most airborne anomalies found within the subject area of the current report have been attributed to thick occurrences of conductive Leda clays, and several anomalies were interpreted to originate from cultural sources (electric fences, power lines, buildings, etc.). The only airborne anomalies that were deemed of interest for graphite exploration are those located in the north-eastern part of the area surveyed with the PhiSpy system. The target area A is located within this zone with higher potential to host conductive graphite mineralization.

First of all, since the penetration depth of the PhiSpy system is known to be limited to about 15-20m, it is recommended to investigate the PhiSpy anomalies of greater interest with basic surface stripping and prospecting methods. It is important to stress that the target area A, even if considered marginal in absolute terms, is highly prioritized over areas B and C. While performing ground investigation, anomalies should be investigated where the PhiSpy path is indicated. Given that anomalies proposed for follow-up are all located within small valleys, they also represent areas where the likelihood of observing outcrops increases, which could be helpful.

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 7: GEOLOGICAL SETTING AND MINERALIZATION

### 7.1 Regional Geology

The Buckingham area lies in the Central Metasedimentary Belt (CMB) of the Grenville Province (**FIGURE No 24**). The Grenville Province is known as a deeply exhumed Mesoproterozoic Himalayan-type collision orogenic belt that extends along a general northeast trend, over thousands of kilometres and is interpreted as a collage of gneissic terranes (Martignole and Friedman 1998, Corriveau et al. 2007). These terranes present different assemblage of highly metamorphosed and folded rocks that were subjected to high-grade metamorphism (upper amphibolite to granulite grade) between 1.2 and 1.8 Ga. This high-grade metamorphic terrane stacking was made along deep-level ductile shear zones and resulted to the main crustal build-up.

The Central Gneiss Belt is found north and west of the CMB. To the east, the Morin Terrane, which mostly consists of large plutonic complexes, is tectonically bounded against the CMB by the 150 km long, up to 10 km wide Labelle Deformation Zone. Two lithotectonic domains were recognized within the Central Metasedimentary Belt. The marble-rich domain, which is found on either part of the Gatineau River, and the quartzite-rich domain (Sourd Group), which extends from Gatineau to Fasset, along the Outaouais River (Wynne-Edwards 1972, Corriveau 2013). The property and its surroundings are located in the quartzite domain, in which quartzites and siliceous gneisses are the dominant lithologies along with intercalated units of metapelites, biotite/graphite-quartzofeldspathic gneisses, marbles, calcsilicate rocks and amphibolites as well as tonalite intrusions.

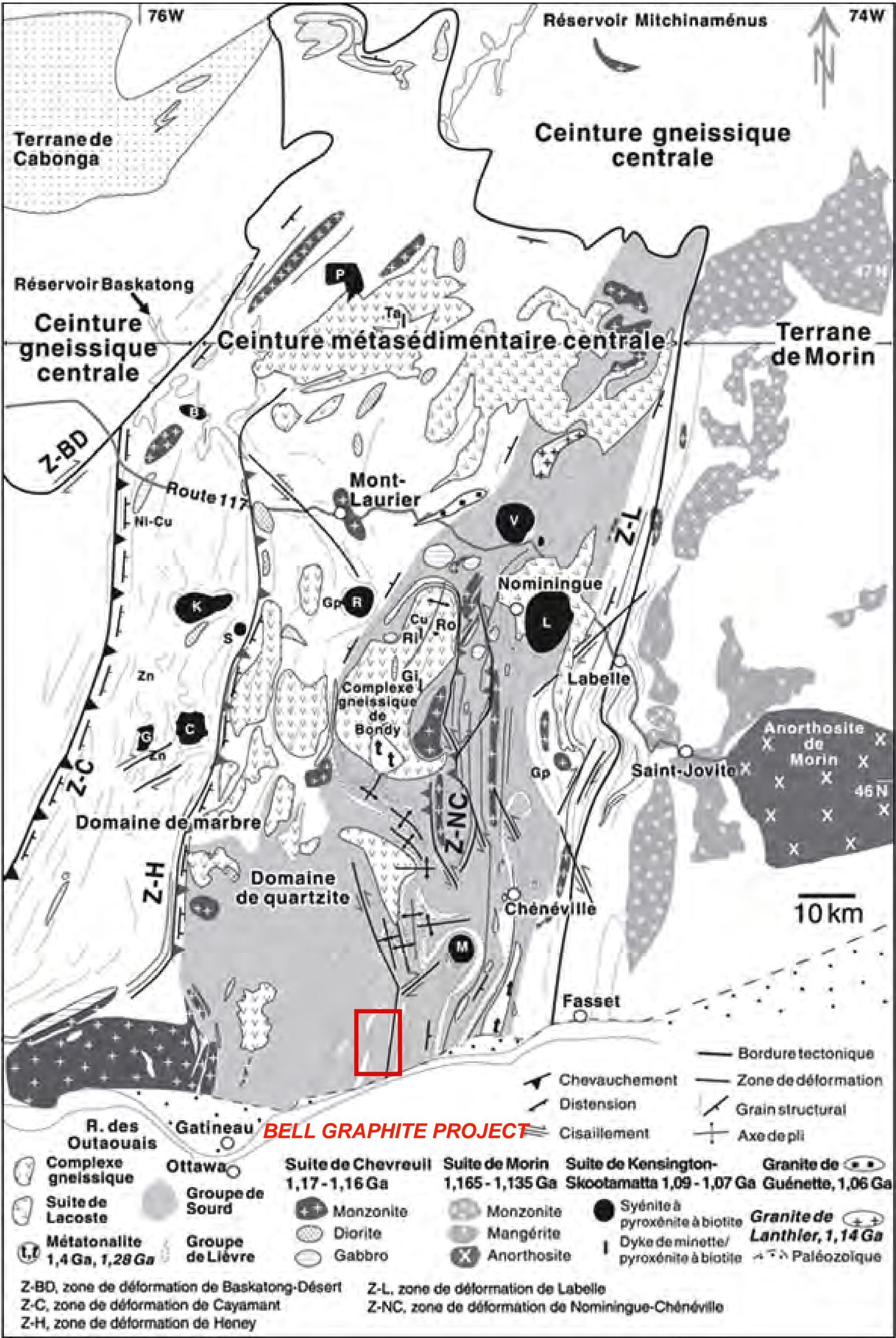
### 7.2 Local Geology (**FIGURE No 25**)

The Property belongs to the southeast portion of the quartzite domain (L. Corriveau, 2013), west of the Nominigüe-Chéneville deformation zone.

In the area surrounding the Bell Graphite Project, regional metamorphism reached the upper amphibolite grade and locally is up to the granulite facies. Structural grain in this area is oriented NNE. The first geological mapping of the property area was done by Wilson (1920), followed by Hébert (1988).

The Buckingham Property is mostly underlain by different types of paragneisses intermixed with lenses of marble and quartzite. Biotite gneisses are quartzofeldspathic in composition with a well-developed foliation along a roughly north-south direction dipping 60°-70°W. Quartzites are frequently observed in the northern part of the property, forming the crests of the ridge. They form bands of about 100 m in width which are constituted of several metric beds. A significant occurrence of quartzite is mapped in the southeast corner of the property. Quartzite is generally impure with biotite crystals. Occurrences of marble are observed throughout the property. It is generally altered in a yellow brown color and present an equigranular texture and may contain abundant fragments of surrounding rocks including paragneiss and quartzite. Adjacent to mineralized intersections, the rock is commonly described as being “granitized” or highly silicified.

In the previous drill logs, the quartzite is confused with a white pegmatite or granitic pegmatite.



Source: L. Corriveau, GSC. Bulletin #586, 2013

FIGURE No 24: REGIONAL GEOLOGY- CENTRAL SEDIMENTARY BELT OF THE GRENVILLE PROVINCE



## BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

### PICTURE No 3

Hole BL-17-09  
Contact between the  
paragneiss and a thick  
quartzite layer at 92.82 m.



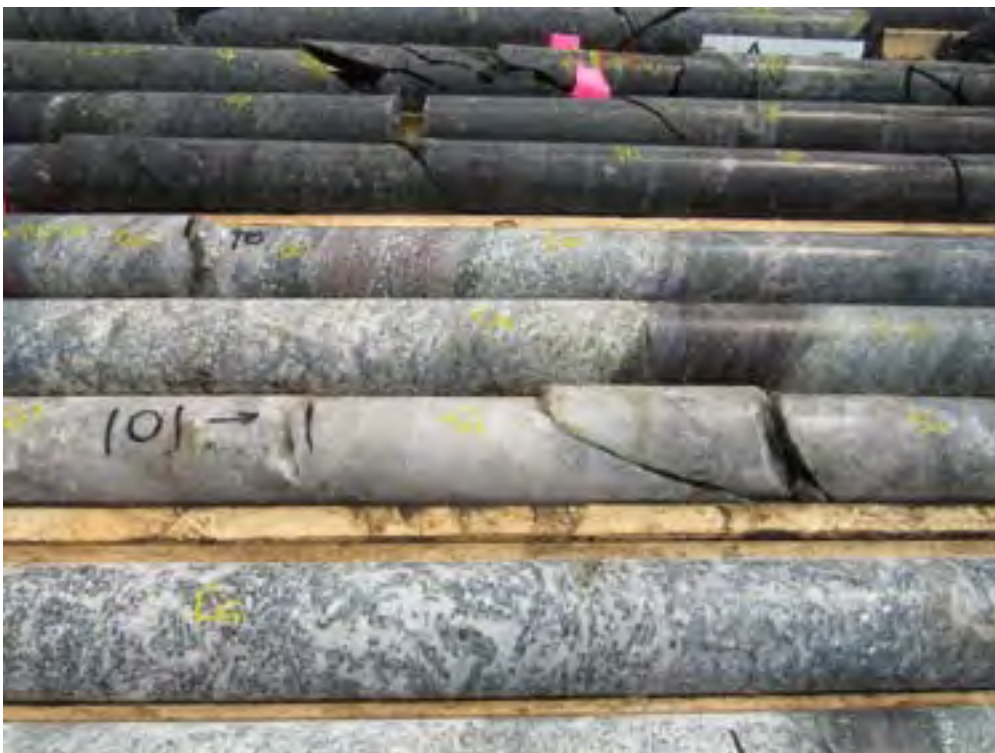
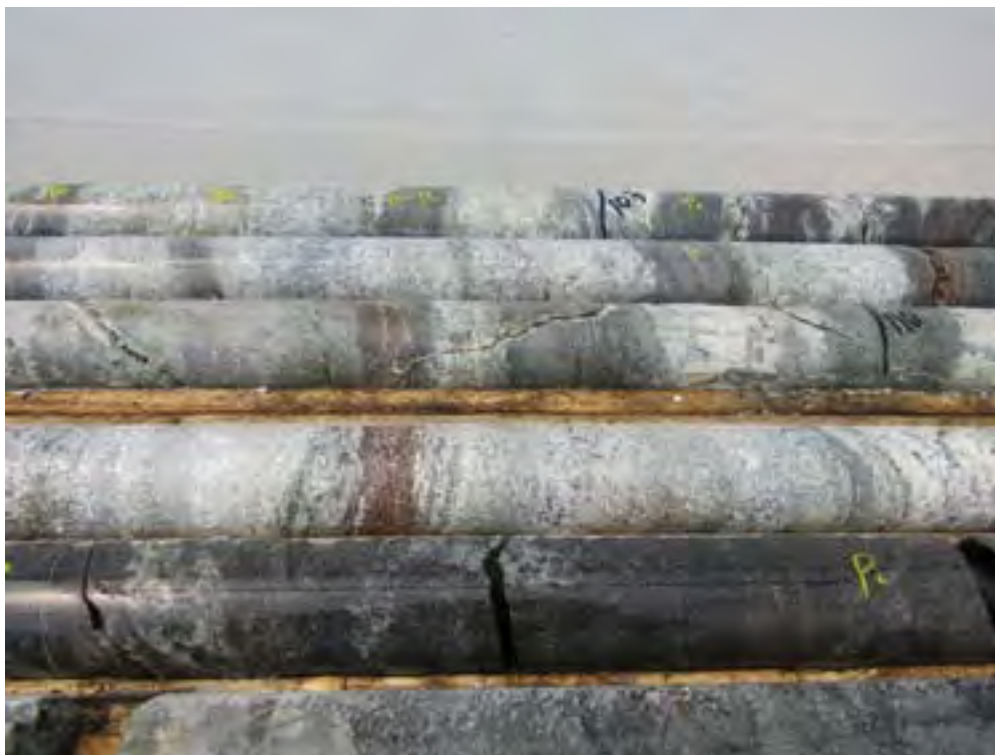
### PICTURE No 4

Hole BL-17-06  
Close-up on an impure  
quartzite intersection. Pla-  
gioclases are bleached or  
saussuritized. Few chlori-  
tized biotites are visible.

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

**PICTURE No 5:**

Alternation of bronze biotite layers with marble layers

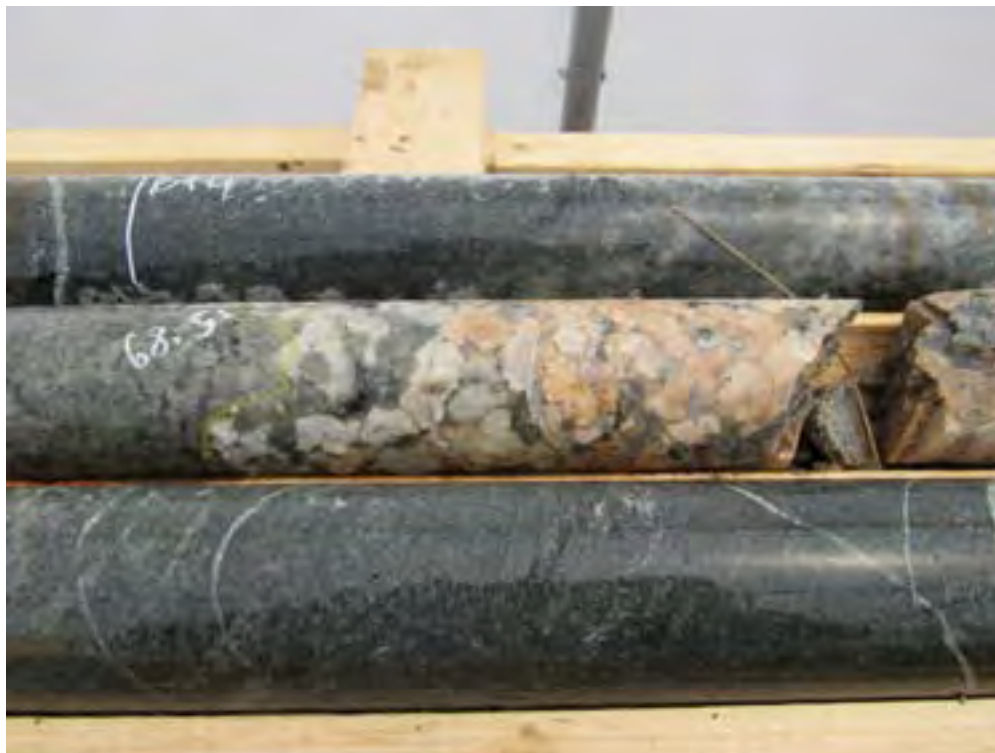


**PICTURE No 6:**

Different aspects of the impure marble.



## BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.



**PICTURE No 7:**

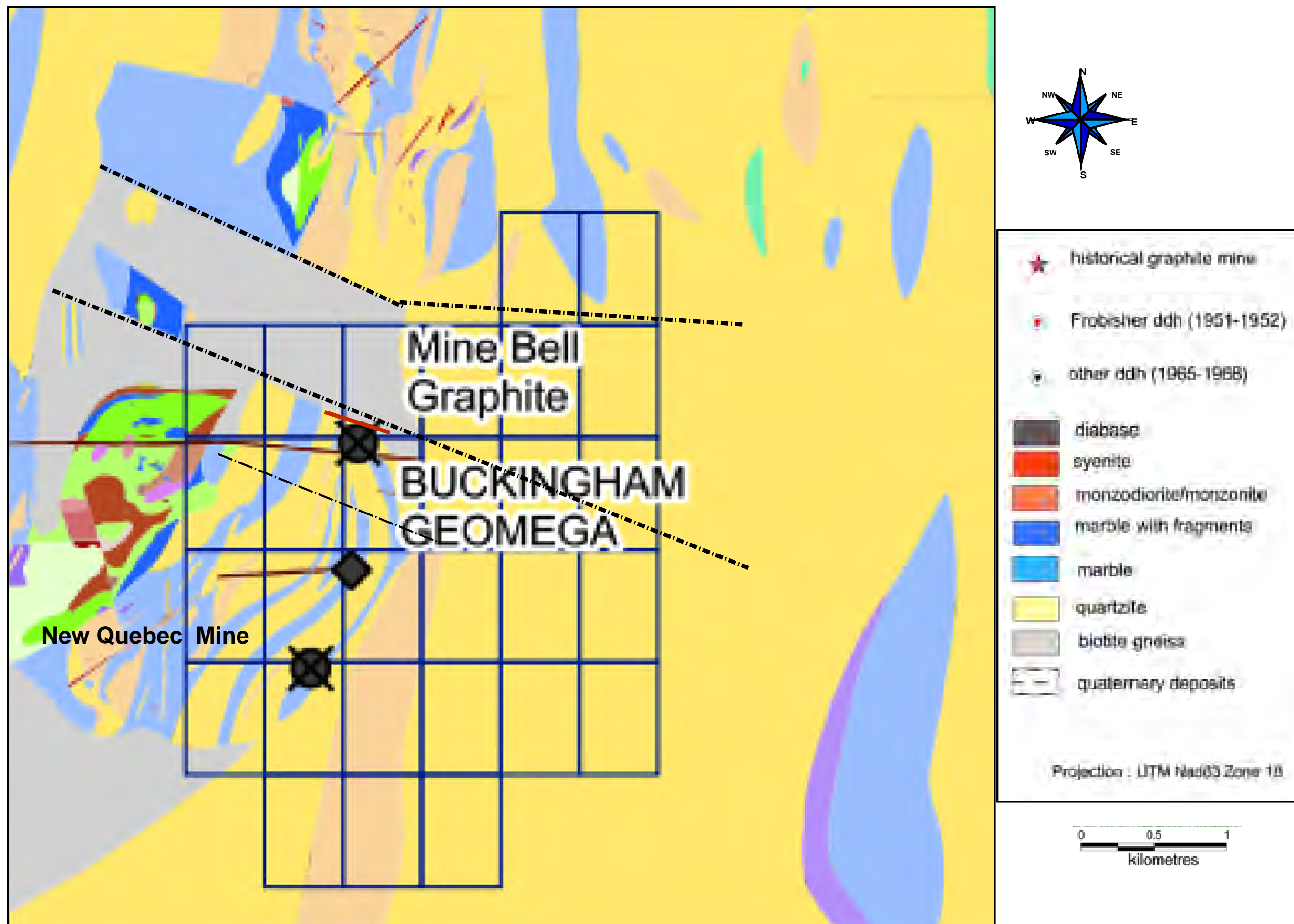
Thin injection of pegmatite.

**PICTURE No 8:**

Micro-diorite dyket intruded in a graphitic paragneiss.



# MAYNE MINERALS INC.



**FIGURE No 25: LOCAL GEOLOGY**

Source: HEBERT, 1998; R. Charbonneau, 2015



# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 7: GEOLOGICAL SETTING AND MINERALIZATION (cont.)

Intrusive rocks are present on the property, mainly as pegmatite or diabase dykes of east-west direction. One of them can be observed on the south end of the Main Trench of the Bell deposit and a second one was intersected by two DDHs on Section N-0. A third one is observed near the McNaughton creek with also the east-west direction

Some black fine grained lamprophyre were observed in the drill holes. During the first drilling campaign, they were denominated “minette” by the geologist. After a verification by thin sections, the name was change to micro-diabase.

### 7.3 Mineralization

At the Bell Mine, the graphite “ore” ( We consider the use of the word “ore” in the context of mineral resource estimates to be potentially misleading because “ore” implies technical feasibility and economic viability that should only be attributed to mineral reserves. From 1902 to 1912, the mineralized zones were mined with profits) was found in two narrow bands or zones that were traced for a distance of 670 feet. The bands strike at an azimuth of 020° and dip at an average angle of 70°. Graphite is disseminated in paragneiss and is accompanied by a white feldspathic rock (quartzite).

On the main zone, at 67 m from the mill, a drift has been driven for 62 m and a shaft has been sunk from the surface to a depth of 50 m. The workable zone varies in width from very narrow to 5 m.

Locally, there is substantial amounts of finely disseminated pyrite which seems to be associated with graphite mineralization, as reported in the drill logs performed nearby Bell Graphite Mine (GM02357B). Graphite large flakes content was reported to 8% during the production phase (Spence 1920). Graphite mineralization is generally found in paragneiss that is formed of intermixed micaceous and carbonated bands called “limey zone”. The grade is generally lower than 8% graphite. Highest graphite concentrations (15% or higher) are generally found in a strongly foliated rock that looks like a micaceous schists.

Grades up to 17% are reported in drill logs. However the reader must to be cautious with this high content because the core size was very small and grinding was important. The high values are also associated with fairly large amounts of finely disseminated pyrite.

Slickensided graphite concentration is observed suggesting accumulation in shear zone, as mentioned in hole B-22 (GM 02357B). Graphite mineralization may also, be found in quartzite ( named pegmatite in 1951-52), which contains odd large scattered graphite flakes like in example, in hole B-23 from 29 to 32 m (GM -02357B).

At the New Quebec Graphite pits and trenches, graphite was of the disseminated flake type and is occurring in a series of schistozed bands in calcareous paragneiss. Series of graphitic bands are usually concentrated in narrow zones with thickness of 2.75 m being reported as the extreme.

## BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.



**PICTURE No 9:**

Garnetiferous biotite  
paragneiss

**PICTURE No 10:**

Concentration of graphite.



# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 8: DEPOSIT TYPES

There are two types of natural graphite:

- 1) Crystalline Type (which is of two varieties, flake or lump graphite);
- 2) Microcrystalline Type (known commercially as amorphous graphite).

They are found in three metamorphic environments. Flake graphite forms in syngenetic metasediments; lump graphite is found in epigenetic veins in high-grade metamorphic regions; and microcrystalline graphite is the product of contact metamorphosed coal (Krauss et al. 1988). The Syngenetic form graphite implies that graphite is formed through the metamorphic evolution of carbonaceous matter dispersed in the sediments whereas the epigenetic graphite originates from precipitation of solid carbon from fluids that contain one or more carbonic species such as CO<sub>2</sub> and CH<sub>4</sub>. (Rodas et. al 2000).

Vein type graphite deposits may be associated with disseminated flake graphite deposits. Although Simandl (1989) mentions seldom veins at Buckingham property (Bell Mine and New Quebec Graphite deposits), such graphite occurrence was not observed during prospection works by GéoMégA. In Spring 2017, the Author found some thin veins of massive graphite in a paragneiss, east of the old workings.

Disseminated flake graphite deposits develop syngenetically from the metamorphism of precursor naturally occurring organic carbonaceous material in sedimentary rocks that have been subjected to garnet grade or higher regional metamorphism at temperatures from 300 °C to 1,200 °C (Weis et. al. 1981). Economically significant concentrations of flake graphite are commonly hosted by porphyroblastic and granoblastic marble, paragneiss, and quartzite. Alumina-rich paragneisses and marbles in upper amphibolite or granulite-grade metamorphic terrains are the most favorable host rocks (Simandl and Kenan, 1997). These deposits are typically stratabound and consist of individual beds or lenses that reach up to 30 m thick and 2 km or longer in length. Sutphin and Bliss (1990) determined that the median grade and tonnage of disseminated flake deposits are 9 % and 240,000 metric tons, respectively. Depending on market conditions, large deposits containing high proportions of coarse flakes, which can be easily liberated, may be economic with grades as low as 4%.

Low grade, stratabound and stratiform deposits are believed to be a product of graphitization of the organic material within pre-metamorphic protolith (carbonates and shales). The crystallinity of graphite is linked to the degree of metamorphism (Katz 1987, Luques et al. 2013).

Higher grade portions of these deposits are usually structurally controlled and were probably enriched during the retrograde phase of regional or contact metamorphism. Late graphite precipitation (enrichment) may have been triggered by internal or external buffering of fluid mixing (Simandl and Kenan, 1997).

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 8: DEPOSIT TYPES (cont.)

Although the metasedimentary origin of the surrounding gneiss may suggest a syngenetic model of graphite occurrence, its enrichment within highly schistozed zone may also imply migration and recrystallization as large flakes in shear zones which may have enhanced both continuity and quality of the mineralization. Such mineralization should form conductive zones easily detected by EM geophysics, which was not systematically applied to the property in the past.



# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 9: EXPLORATION WORK

Since the acquisition of the Bell Graphite Project, **Mayne Minerals Inc.** did not carried out a field exploration program. The Author searched and studied all the technical information and the scientific documents available in relationship with the Project and all the information obtained is reported in **Item 6.0**.

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 10: DRILLING

Since the 2017 Saint Jean Carbon's drilling program, no drill hole has been bored on the property.

Since the acquisition of the Bell Graphite Project, **Mayne Minerals Inc.** obtained the authorizations of the land owners covering the Bell Graphite Mine to carry out a drilling programme on their property. This programme was conducted in order to be able to renew some claims expiring between April and June 2021. The Author proposed to bore one 100 m long drill hole in order to verify the thickness of the Leda Clay, a Quaternary glacial sedimentary formation which covers most of the northern part of the claims and more particularly the possible extension of the Bell Graphite mineralized zone. In addition, the hole ought to test an helicopterborn TDEM conductor axis.

The drilling programme started on February 8th, 2021 and ended on February 10th, 2021. The drilling contractor was Prospectair Geoservices inc. from Gatineau, Quebec.

The drill hole has been collared at 471449 m E, 5049913 mN and at an elevation of 115.6 m above Sea Level. Its azimuth is 80° and the dip was adjusted at -50°.

From 0 to 12 m, the hole intersected a very fine grained yellow brownish mixt of clay and silt.

From 12 m to the end of the hole at 100 m, the clay is grey to greenish grey, very fine grained and very homogeneous. No gravel or boulder has been recovered.

This hole confirms the existence of a major WNW-ESE oriented fault which marks the south limit of a local graben running parallel to the Ottawa River and which was filled by Ordovician sediments and later by the muds of the Champlain Sea (Leda Clay). The DD hole has shown that along the Brady Creek flowing at the foot of the Belter hills, the Quaternary sediments can be much thicker than 100 m.

The casing has been successfully removed and the hole covered with soil.

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 11: SAMPLE PREPARATION, ANALYSES, AND SECURITY

### 11.1 1951-1952 Drilling Campaign

The two drilling programs were performed using the EXT core size ( 0.9 inch, 2.29 cm in diameter). There is a mention of a high core recovery obtained during the two programs and the mineralized samples recovered from the cores were considered as “being quite representative”.

There is no mention in the previous reports nor in the field that the core was split before sampling and assaying.

In the previous reports, there is no mention of the laboratory which performed the assays. The author suspects that the core was assayed at the Frobisher Ltd.’s Black Donald Graphite Mine Laboratory in Eastern Ontario. The core was assayed for the carbon content only. Examination by the laboratory of the core highlighted the presence of more pyrite-pyrrhotite mineralization than expected. They mention that a special assay procedure was set up at the very outset of the program to ensure that false carbon values would not be reported as a result of the combustion loss due to the sulfides.

In order to check the accuracy of the assays, twenty samples of material from the cores were combined to make a composite sample. A small proportion of the bulk sample was assayed by the regular method, which returned an average of 11.0% carbon. A further 2 kg sample was selected by riffing and was then floated and cleaned in their facility. Result by calcination gave 11.2% carbon.

### 11.2 2017 Core Drilling and Logging

The 2017 drill holes were drilled with the NQ core size. Down hole surveys were conducted using a Reflex tool after 10 m when the casing was 10 m long or longer, and 6 m before the end of the hole. Drill core was placed in wooden core boxes with alignment marks and with depth markers marking the end of every drill run.

Drill core was logged for lithology, alteration, mineralization, magnetism, RQD, and structures.

Sampling intervals were determined by the Geologist and marked and tagged based on observations of the lithology and mineralization. The typical sampling length was 1m, but ranged from 0.20 to 2.5 m according to lithological contact between the mineralization and the host rock. In general, at least one host rock sample was collected each side from the contacts with the mineralization. Beginnings and ends of samples were identified by a red flagging tape placed under the core and arrows drafted on the core with a yellow wax pencil.

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 11: SAMPLE PREPARATION, ANALYSES, AND SECURITY (cont.)

### 11.3 Sample Preparation and Security

All core samples were cut by a trained sampler using a core saw equipped with a diamond studded blade. Half of the core cut was repositioned into core box, and half of it was placed in a sample bag. Grab samples were taken by the geologist and placed in plastic bags and sealed. Sample booklets with three numbered detachable tags were provided by **ALS Minerals** from Val d'Or (Quebec).

After completing logging, magnetic susceptibility readings and orientation readings were made. In addition, the core boxes were pictured wet.

Core samples measuring between 20 cm and 2.5 metres were put in plastic bags. Samples intervals were marked and tagged during the logging process. One tag with corresponding number was stapled in the core box. The bags were numbered with black marker on both side and the corresponding numbered tag stapled on it. Sample bags were closed with multi-purpose ties wraps. Samples were after kept in rice bags with a maximum of 10 samples by bag. The rice bags were closed with safety tags. Sampling was made only by **C.D.G.C.**'s personnel. Nobody else had access to core without the presence of one of the geologists of **C.D.G.C.**

Every 50 samples (a batch) that comprise one standards (GR-1 or GR-2), one blank (dead lime, purchased from Reno Depot, generally known as white rock), were prepared and placed in the rice bags by the QP.

The sample shipment forms were prepared on site with one copy inserted in one of the shipment bags, and one copy kept for reference.

### 10.4 Transportation

Rice bags were carried by the Q.P. (Dr. C. Derosier, P.Geo.) to the bus terminal for shipment to the ALS laboratory in Val d'Or, Quebec, on a weekly basis. During the week and on week-end, when samples had to spend a night in the coreshack, they were packed in rice bags sealed with safety tags on. The coreshack being located on a private property was not accessible to visitors.

### 11.5 Sample Analysis

With the 2017 drilling program and the prospecting phase, **C.D.G.C** implemented a Quality Assurance/Quality Control (QA/QC) procedure.

Samples were prepared using standard preparation procedures used by ALS Minerals Laboratories. Entire samples were weighted, dried and crushed, using method CRU-31, to better than 70% passing -200 mesh, split off up to 250 g, pulverize split to better than 85% - passing 75 microns ( $\mu\text{m}$ ) and homogenised.



# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 11: SAMPLE PREPARATION, ANALYSES, AND SECURITY (cont.)

Carbon has important metallurgical and environmental implications for many types of mineral deposits. Carbonates may consume acid, impacting leach process design and mine waste remediation, while preg robbing by organic carbon can interfere with the cyanidation of gold and silver ores.

Different types of Analysis:

Corg: HCl 25% leach of carbonates, LECO Furnace Method Code: C-IR06a;

C (Graphite): HCl (50%) leach of carbonates, roasting to remove organic carbon, LECO furnace Method Code: C-IR18;

C (non carbonate): Dilute acid digestion followed by combustion furnace Method Code: C-IR17;

C(Total): Total Carbon by LECO furnace Method Code: C-IR07.

Analytical procedures used for the core and grab samples were C-IR06 and ME-MS41 Ultra Trace Aqua Regia ICP-MS.

The C-IR06 consists of determination of Graphite by multistage furnace treatment to remove organic carbon and infrared detection on LECO.

### 11.6 Bulk Density Data

C.D.G.C. conducted a bulk density assessment of 10 drill core samples. The samples were weighed with a UWE digital hanging scale (model no. HS-7500 / serial no. HS0009972) with a precision of  $\pm 5$  grams. The samples were initially weighed in air and then in water, with these measurements used to calculate the bulk density as follow:

Bulk density ( $\rho$ ) = Weight in air ( $W_a$ ) / ( $W_a$  - Weight in water ( $W_w$ ))

It was not considered necessary to seal the samples when submersed in water due to them being very fine-grained and impermeable.

**TABLE No 6** presented on the following page, gives the specific gravity of representative samples.

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 11: SAMPLE PREPARATION, ANALYSES, AND SECURITY (cont.)

**TABLE No 7:** Specific Gravity of the 10 rock types

DRILL HOLE	DEPTH m	ROCK TYPE	WEIGHT		SPECIFIC GRAVITY
			Dry grammes	In water grammes	
BL-17-07	91,70	Micro-diabase	360	230	2,769
BL-17-02	144,10	Graphitic gneiss	914	600	2,911
BL-17-04	41,80	Gneiss	975	615	2,708
BL-17-10	104,50	Diabase	514	340	2,954
BL-17-07	38,50	Biotite Paragneiss	480	290	2,526
BL-17-02	34,00	Diabase	535	355	2,972
BL-17-07	91,70	Micro-Diabase	360	230	2,769
BL-17-08	4,70	Quartzite	476	295	2,630
BL-17-07	79,75	Biotite Paragneiss	347	215	2,629
BL-17-07	95,00	Quartzite	380	230	2,533

The average specific gravity of the Graphitic paragneiss is about 2.65. The Diabase and micro-diabase returned the highest values between 2.76 (chloritized) and 2.972 (fresh diabase).

### 11.7 RQD

Rock-quality designation (RQD) is a rough measure of the degree of jointing or fracture in a rock mass, measured as a percentage of the drill core in lengths of 10 cm or more. High-quality rock has a RQD of more than 75%, low quality of less than 50%.

Total core recovery (TCR) is the borehole core recovery percentage.

TCR is defined as the quotient:  $TCR = ((L \text{ sum of pieces}) / (L_{\text{tot core run}})) \times 100\%$

$L \text{ Sum of pieces} =$  Sum of length of core pieces;

$L_{\text{tot core run}} =$  Total length of core run.

RQD measures were taken by Christian Derosier, QP, and Greg Hryniw, under the QP supervision.

All measures were reported on an Excel spreadsheet before to be integrated in the GeoticLog Data Base.

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 11: SAMPLE PREPARATION, ANALYSES, AND SECURITY (cont.)

Generally speaking, the RQD is excellent everywhere. No shear zone or fault zone has been encountered by the drill holes. The first 15 m of each hole shows a strong fracturing which is due to the weathering. At depth, the rock is massive and solid. Most of the open fractures observed in the core boxes come from the manipulation of the core by the drillers. Open fractures generally present rust or carbonate coatings.

### 11.8 Quality Control /Quality Assurance

In addition to the regular sampling and assaying of samples, additional quality control protocols initiated externally by **C.D.G.C.** required the preparation of various blank and duplicate samples to evaluate the precision (i.e. reproducibility) and accuracy of the reported values. Each batch of 50 samples included a blank and one or two standards.

Two Standards for Graphite, **GR-1** and **GR-4**, provided by CDR Resources Laboratories Ltd., from Langley, BC, were used.

Standard CDN-GR-1 was prepared using ore supplied by Noram Ventures Inc. from their Kokanee Graphite property near Crawford Bay on Kootenay Lake in southeastern British Columbia. Graphitic carbon concentration: **3.11 ± 0.11 % C** Certified value

Standard CDN-GR-4 was prepared using a mixture of two ores supplied by Noram Ventures Inc: Graphitic carbon concentration: **1.01 ± 0.09 % C** Certified value.

The first ore is from the company's Kokanee Graphite property near Crawford Bay on Kootenay Lake in southeastern British Columbia. The second ore is from the company's Jumbo Graphite property located 20 km southwest of Nakusp in southeast B.C.

Whole rock analysis of the Standards are as follows:

Standards	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	Fe <sub>2</sub> O <sub>3</sub>	CaO	MnO	Total S	Na <sub>2</sub> O	MgO	K <sub>2</sub> O	TiO <sub>2</sub>	LOI
GR-1	65.3%	8.6%	4.2%	6.3%	<0.1%	1.0%	0.3%	2.4%	3.0%	0.4%	6.8%
GR-4	61.8%	12.9%	6.3%	6.6%	0.2%	1.0%	1.8%	2.4%	2.3%	0.5%	2.7%

A total of 303 samples has been sent to ALS Minerals. Of this total, 7 samples were Blank (BLK) and 6 samples were Standards (STD). This represents a total of QC/QA samples of 13.

Blanks and standards account for 4.48% of the total core samples. With the addition of the duplicates made by the laboratory, the quality control data accounts for close to 10% of the data set for field blanks and standards. This number of samples does totally satisfy the industry's recommendation of submitting approximately 5% each of field blanks, standards, and duplicates.

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 11: SAMPLE PREPARATION, ANALYSES, AND SECURITY (cont.)

Blanks are used to monitor contamination introduced during sample preparation and to monitor analytical accuracy of the lab. True blanks should not have any of the elements of interest much higher than the detection levels of the instrument being used. **C.D.G.C.** utilized **Graybec** Calcium Hydroxide as a blank.

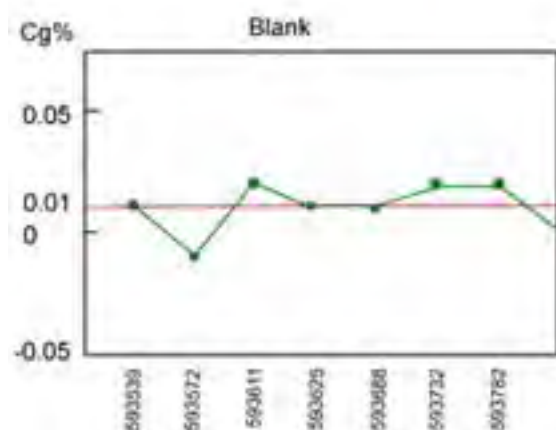
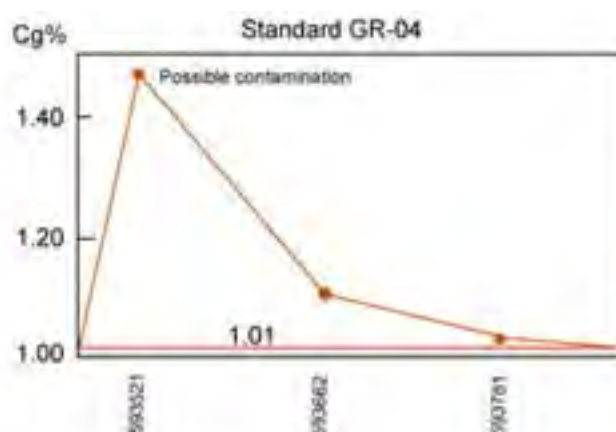
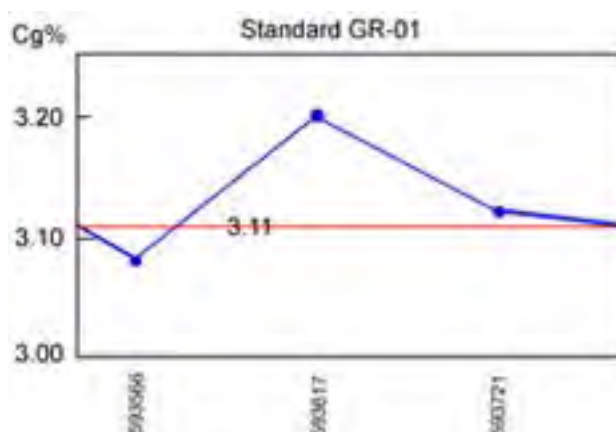
There is a total of 7 blank samples, which corresponds to an insertion rate of approximately 1 in 42.86. The graphite values performed very well and did not have any failures.

The Graybec Calcium Hydroxide has the following chemical composition:

CaO: 50% CaCO<sup>3</sup> 4.5% MgO 0.3% SiO<sup>2</sup> 0% Au 0 Cg 0.1%

The diagrams presented below show the performance of the laboratory with the two standards and the blank.

As a whole, results seem satisfactory. The medium and the high grades present more amplitudes.





# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 12: DATA VERIFICATION

### 12.1 Site Visit

C.D.G.C.'s first visit to the Bell Graphite Project was conducted on August 14, 2016. During the inspection, several outcrops and old open stopes were observed. Visual observation, digital photos and Global Positioning System (GPS) measurements were used to conduct and record the results of this inspection.

Numerous visits were made during 2017 and the last one took place in September 2017.

### 12.2 Data Validation

The Saint Jean Carbon inc. data base is new and was built first with the historical drill holes. No assay certificate were submitted at the time as well as deviation tests.

“From” and “To” intervals, measurements of assay sampling intervals, and graphite grades were compiled from historical drill logs into GeoticLog (MsAccess). The error rate of the initial dataset exceeded the acceptable limit of 1% of errors. Most errors were insignificant and related to mistakes in transcription.

### 12.3 Bore Hole Comparison and Validation

C.D.G.C. was not able to confirm the location of 1951-1952 surface drillhole collars during the site visit made on August 14, 2016, subsequent visits, during the 2017 Drilling Program and the last visit made on September 26th, 2017.

C.D.G.C. calculated the location of drill holes from the hand written sketch accompanying the historical drill records. Those collar locations were checked using a Garmin GPSmap 60CSx hand-held GPS unit and a Garmin GPSmap 60Cx hand-held GPS unit. The accepted error for the two GPS units is typically  $\pm 5$  m. No casing was left. Some pieces of core were found on the main access trail.

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 12: DATA VERIFICATION (cont.)

### 12.4 Assay Database versus Lab Certificates

In October 2017, Jacques Marchand Eng. Geo. and QP completed a 100% validation of the Bell Graphite Project graphite assays for drill holes drilled in 2017 against the original laboratory certificates. Historical assays, drilled between 1951 and 1952, do not have assay certificates from the lab and were reviewed and compared against current drilling results in the same zones.

Several minor discrepancies were found between the assays and the laboratory certificates. The minor differences were discussed with **CDGC** and corrected in the dataset used for modelling and estimation.

In summary, Jacques Marchand Eng. Geo. and Q.P., concluded that the current database is largely free of translation errors and is adequate for resource estimation.

### 12.5 Comparison of historical and SJL Assay Data

#### 12.5.1. Documents used

The 1952 reports, the 2017 Geotic database, the 2016 digitalization report, the 2017 logs. Maps and database from the Government of Canada “Géogratis” web site and from the Quebec Government “Géoboutique” web site.

#### 12.5.2. Softwares used

Map Info / Discover for the GIS registration, block model construction and the resource evaluation.

Microsoft Excel for the calculation and the construction of log table from the Geotic database import. Microsoft Word for report word processing.

ACD Canvas for the GIS treatment and for drawing.

GPS referenced (2017) drill holes BL-17-01A to 11A.

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 12: DATA VERIFICATION (cont.)

### 12.5.3. Data Verification and Adjustments

The original DDH entries were adjusted to compensate for different location and grade deficiencies. The name of the DDH were also modified in order to be more adequately treated in the database.

The 1952 DDH are renamed BL1952s and the 2017 renamed BL2017s. The following verifications and adjustments are considered adequate and can be included in the database used for the resource evaluation.

2017 Drill Hole Location Field Verification as part of the project visit, the Author checked some of the 2017 DDHs with a Garmin Map 64s GPS. The next table present the results of this verification:

**TABLE No 8**

DDH	XutmVt	YutmVt	ZsphVt	Xutm	Yutm	Zel	$\Delta x$	$\Delta y$	$\Delta z$
BL2017s02	471384	5049785	114	471385	5049788	121	-1	-3	-7
BL2017s05	471373	5049737	119	471383	5049731	127	-10	6	-8
BL2017s06	471387	5049683	124	471376	5049681	135	11	2	-11
BL2017s07	471386	5049654	125	471386	5049660	138	0	-6	-13
BL2017s09	471357	5049639	128	471359	5049641	142	-2	-2	-14
BL2017s10	471398	5049582	138	471389	5049571	150	9	11	-12
BL2017s11	471382	5049515	154	471378	5049520	162	4	-5	-8
<b>Average</b>							<b>1.57</b>	<b>0.43</b>	<b>-10.43</b>
<b>Standard Deviation</b>							<b>7.14</b>	<b>6.24</b>	<b>2.76</b>

The result is considered as adequate since it is within the GPS normal precision variation.

### 12.5.4. Drill Hole Location Adjustment

The 1952 DDHs are located approximatively from non-registered maps. The control is done by field evidence (creek, old core pieces, access road) and observable map indication.

A location error in the 1953 surface map for holes B-23 and B-24 was rectified using the log description and the graphical section N-6. To adjust the location, we have used the geological unit superposition referenced to the 2017 DDHs. The DDH elevation is adjusted to the Quebec government digital elevation model (MNA-20K\_31G11-0101\_GRID) used for the topographic registration.

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

Item 12: DATA VERIFICATION (cont.)

**TABLE No 9**  
**Drill Hole Location Adjustment**

DDH	XutmO	CorX	XutmAdj	YutmO	CorY	YutmAdj	Zsph	CorZ	ZgridAdj
BL1952s01	471394.6		471394.6	5049551.4		5049551.4	153.0	-3.1	156.1
BL1952s02	471394.6		471394.6	5049551.4		5049551.4	153.0	-3.1	156.1
BL1952s03	471410.5		471410.5	5049614.5		5049614.5	141.0	-2.1	143.1
BL1952s04	471409.5		471409.5	5049614.8		5049614.8	141.0	-2.1	143.1
BL1952s05	471391.0		471391.0	5049586.9		5049586.9	146.0	-2.7	148.7
BL1952s06	471390.7		471390.7	5049586.9		5049586.9	146.0	-2.7	148.7
BL1952s07	471409.1		471409.1	5049645.4		5049645.4	134.0	-2.4	136.4
BL1952s08	471409.0		471409.0	5049645.4		5049645.4	134.0	-2.4	136.4
BL1952s09	471424.3		471424.3	5049671.9		5049671.9	129.0	-0.4	129.4
BL1952s10	471424.0		471424.0	5049672.0		5049672.0	129.0	-0.4	129.4
BL1952s11	471449.0	-8.7	471440.3	5049689.0	5.0	5049694.0	123.0	-0.4	123.4
BL1952s12	471448.0	-8.7	471439.3	5049689.6	5.0	5049694.6	123.0	-0.4	123.4
BL1952s13	471446.6	-8.7	471437.9	5049690.5	5.0	5049695.5	123.0	-1.4	124.4
BL1952s14	471443.6	-12.1	471431.5	5049729.1	7.0	5049736.1	116.0	-0.9	116.9
BL1952s15	471442.4	-12.1	471430.3	5049729.1	7.0	5049736.1	116.0	-0.9	116.9
BL1952s16	471474.6	-21.7	471452.9	5049749.1	12.5	5049761.6	111.0	-0.4	111.4
BL1952s17	471474.2	-21.7	471452.6	5049749.1	12.5	5049761.6	111.0	-0.4	111.4
BL1952s18	471474.1	-21.7	471452.5	5049749.0	12.5	5049761.5	111.0	-0.4	111.4
BL1952s19	471474.1	-21.7	471452.5	5049749.1	12.5	5049761.6	111.0	-0.4	111.4
BL1952s20	471447.3	-21.7	471425.6	5049763.6	12.5	5049776.1	108.0	-2.8	110.8
BL1952s21	471434.5	-12.1	471422.4	5049734.0	7.0	5049741.0	115.0	-1.2	116.2
BL1952s22	471434.0	-12.1	471421.9	5049734.0	7.0	5049741.0	115.0	-1.2	116.2
BL1952s23	471470.9	-23.4	471447.5	5049714.6	13.5	5049728.1	117.0	0.4	116.6
BL1952s24	471470.9	-23.4	471447.5	5049714.6	13.5	5049728.1	117.0	0.4	116.6
BL1952s25	471418.5	-8.7	471409.8	5049705.3	5.0	5049710.3	125.0	-0.6	125.6
BL1952s26	471388.5	-8.7	471379.8	5049690.5	5.0	5049695.5	133.0	-1.8	134.8
BL2017s01	471433.0		471433.0	5049765.0		5049765.0	108.0	-3.9	111.9
BL2017s02	471385.0		471385.0	5049788.0		5049788.0	121.0	4.2	116.8
BL2017s03	471425.0		471425.0	5049734.0		5049734.0	117.0	-1.7	118.7
BL2017s04	471424.0		471424.0	5049732.0		5049732.0	117.0	-1.7	118.7
BL2017s05	471383.0		471383.0	5049731.0		5049731.0	127.0	0.0	127.0
BL2017s06	471376.0		471376.0	5049681.0		5049681.0	135.0	-2.0	137.0
BL2017s07	471386.0		471386.0	5049660.0		5049660.0	138.0	-0.3	138.3
BL2017s08	471377.0		471377.0	5049633.0		5049633.0	141.0	-1.5	142.5
BL2017s09	471359.0		471359.0	5049641.0		5049641.0	142.0	-3.5	145.5
BL2017s10	471389.0		471389.0	5049571.0		5049571.0	150.0	-1.5	151.5
BL2017s11	471378.0		471378.0	5049520.0		5049520.0	162.0	-2.3	164.3



# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 12: DATA VERIFICATION (cont.)

### 12.5.5. Carbon Content Adjustment

In order to adequately evaluate the graphite grade, a correction for the carbon content of the 1952 DDHs should be performed. The carbon assay, at that time, did not made the difference between organic, carbonate and graphitic carbon.

The methodology used for the adjustment is empirical and based on the range observed for the 2017 DDHs. It proceeds as follow:

- Evaluation of the minimum, maximum and average carbon of the 1952 DDHs.
- Evaluation of the minimum, maximum and average graphitic carbon of the 2017 DDHs. Considering that there is no wall sampling in the 1952 DDH and that the visual cut was possibly 1.5% of graphite. A lower cut of 1.5% is applied to the 2017 DDHs.
- Comparison of the grade range.
- Determination of the adjustment factor.

The following table presents the result of the adjustments:

**TABLE No 10**

DDH	Min	Max	Average
1952	3.10%	18.90%	8.89%
2017 (lower cut =1.5%)	1.51%	10.15%	4.10%
Difference	0.49%	0.54%	0.46%
1952 *0,5	1.55%	9.45%	4.45%

Considering the above results, the 1952 carbon contents should be divided by 2 to remove the non-graphitic carbon.

### 12.5.6. Adjacent 2017 and 1952 DDHs Comparison

The twin verification used the adjusted DDH position. The true width is the vertical intersection (Z) multiplied by  $\cos(60^\circ)$ . Non correspondences in the summation are due to rounding and to the presence of dikes in the mineralized intervals. Difference are sometimes substantial and are representative of the variability of the mineralization, the location precision and the 1952 limited wall sampling. Difference for the true width of the vein varies from 0.2 to 1.2m (vein average 2.4m) and the grade difference varies from 0 to 2% (average grade 5.6%).

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 12: DATA VERIFICATION (cont.)

The Author considers the results as valid for the inclusion of the historical DDHs in the database.

### BL2017s03 versus BL1952s14

DDH	Xutm	Yutm	Zdem	Az	Utm Dip	From	To	Length	FromX	FromY	FromZ	ToX	ToY	ToZ	True Width	Cg%
	N83z18	N83z18	m	°	°	m	m	m								
BL1952s14	471431.5	5049736.1	116.9	118.2	-45.0	33.7	34.8	1.10	471452.5	5049724.8	93.1	471453.2	5049724.5	92.3	0.4	5.2
BL2017s03	471425.0	5049734.0	118.7	118.2	-45.0	35.0	38.5	3.1	471446.6	5049722.3	93.7	471448.7	5049721.	2 91.	2 1.2	7.2
Difference								2.1	-5.9	-2.5	0.7	-4.5	-3.3	-1.1	0.9	2.0

### BL2017s04 versus BL1952s15

DDH	Xutm	Yutm	Zdem	Az	Utm Dip	From	To	Length	FromX	FromY	FromZ	ToX	ToY	ToZ	True Width	Cg%
	N83z18	N83z18	m	°	°	m	m	m								
BL1952s14	471431.5	5049736.1	116.9	118.2	-45.0	36.0	42.1	6.1	471441.2	5049730.3	83.1	471443.0	5049729.3	77.4	2.9	6.5
BL2017s04	471424.0	5049732.0	118.7	123.2	-70.0	41.0	49.6	8.6	471435.8	5049724.2	80.2	471438.2	5049722.6	72.1	4.0	6.5
Difference								2.5	-5.4	-6.0	-2.9	-4.8	-6.7	-5.2	1.2	0.0

### BL2017s07 versus BL1952s08

DDH	Xutm	Yutm	Zdem	Az	Utm Dip	From	To	Length	FromX	FromY	FromZ	ToX	ToY	ToZ	True Width	Cg%
	N83z18	N83z18	m	°	°	m	m	m								
BL1952s08	471409.0	5049645.4	136.4	118.2	-72.0	40.7	46.9	6.3	471420.1	5049639.5	97.7	471421.8	5049638.6	91.8	3.0	4.1
BL2017s07	471386.0	5049660.0	138.3	114.2	-50.0	55.0	64.0	8.5	471418.6	5049643.7	97.1	471424.0	5049641.0	90.4	3.2	4.1
Difference								2.3	-1.5	4.2	-0.6	2.2	2.4	-1.3	0.2	0.1

## 12.5.7. Database statistics

### Drilling compilation tables:

Drilling Contractor	Nb of DDHs	Total Length	Min Length	Max Length
Frobisher Ltd	26	1606.29	38.10	98.15
George Downing E	11	1339.00	78.00	210.00
<b>Total</b>	<b>37</b>	<b>2945.29</b>	<b>38.10</b>	<b>210.00</b>

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 12: DATA VERIFICATION (cont.)

TABLE No 11

DDH	Nb of Samples	Nb of Cg%	Max Cg%
BL1952s03	4	4	4.45
BL1952s04	5	5	3.85
BL1952s05	3	3	3.60
BL1952s06	4	4	3.60
BL1952s07	3	3	5.70
BL1952s08	6	6	9.45
BL1952s09	5	5	7.60
BL1952s10	6	6	6.05
BL1952s11	4	4	6.40
BL1952s12	4	4	7.50
BL1952s13	4	4	8.60
BL1952s14	1	1	5.15
BL1952s15	5	5	8.45
BL1952s17	10	10	8.00
BL1952s18	10	10	6.90
BL1952s19	4	4	7.70
BL1952s20	7	7	8.50
BL1952s21	7	7	7.30
BL1952s22	6	6	7.20
BL1952s23	11	11	6.80
BL1952s24	4	4	7.40
BL1952s25	11	11	8.65
BL2017s01	20	20	6.88
BL2017s02	22	22	9.65
BL2017s03	32	32	8.51
BL2017s04	39	39	10.15
BL2017s05	28	28	9.83
BL2017s06	22	22	6.96
BL2017s07	22	22	7.40
BL2017s08	26	26	5.97
BL2017s09	23	23	5.46
BL2017s10	16	16	1.48
BL2017s11	40	40	0.98
<b>Total</b>	<b>414</b>	<b>414</b>	<b>10.15</b>

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 12: DATA VERIFICATION (cont.)

### 12.7 Review of Analytical Quality Control Data

SJL provided the quality control data accumulated during the 2017 drill program for the Bell Graphite Project. SJL submitted a total of 13 quality control samples for the Bell Graphite Project. Two standards were used. No field duplicate samples were used.

CDGC compiled the graphite assay results for the quality control samples, summarized in TABLE No 10.

The quality control data accounts for close to 5% of the data set for field blanks and standards. This number of samples does not satisfy industry's recommendation of submitting approximately 5% each of field blanks, standards, and duplicates.

**TABLE No 10: Summary of analytical quality control data for the Bell Graphite Project.**

Samples	Number of Samples
Assays	303
Blanks	7
CDN-GR-01	3
CDN-GR-04	3
<b>Total QA/QC Samples</b>	<b>13</b>

### 12.8 Verifications of Analytical Quality Control Data

#### 12.8.1 Standards

Standard reference material (SRM) samples provide a means to monitor the precision and accuracy of the laboratory assay deliveries. The CDN-GR-01 and CDN-GR-04 standard used by SJL are commercial standards, sourced from CDR Resources Laboratories Ltd., from Langley, BC. There are a total of six submitted standard samples in the Bell Graphite Project database which corresponds to an insertion rate of approximately 1 in 50. Graphite falls within the expected range of two or three standard deviations respectively.

#### 12.8.2 Blank Material Performance

Blanks are used to monitor contamination introduced during sample preparation and to monitor analytical accuracy of the lab. True blanks should not have any of the elements of interest much higher than the detection levels of the instrument being



# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 12: DATA VERIFICATION (cont.)

used. SJL utilized Graybec Calcium Hydroxide as a blank.

There are a total of 7 blank samples which corresponds to an insertion rate of approximately 1 in 40. The graphite values performed well and did not have any failures.

### 12.9 Laboratory Assay Controls

#### 12.9.1 Standards

During the course of the analysis, **ALS Minerals** used different commercial standards for metals, major elements and graphite.

Graphite:	Corg
SY-4	0,13%
GGC-10	5,05%
GGC-04	13,1%

Major elements:	Ca
OREAS 920	0.34%
OREAS 905	0.33%
MRGeo08	1.07%
OGGeo08	0.89%

A total of 66 standards has been inserted in the process.

Results of the assays are presented on the two following pages.

#### 12.9.2 Blanks

A total of 33 blanks (pure silica) has been used by the laboratory. Some have been assayed for Corg and other for the major elements. Results show a lack of contamination.

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 12: DATA VERIFICATION (cont.)

TABLE No 12:

## LABORATORY STANDARDS

### VO17092930 - Finalized

	C-IR06	ME-MS41
SAMPLE	C organic	Ca
DESCRIPTION	%	%
SY-4	0,13	
SY-4	0,13	
OREAS 920		0.34
GGC-10	5,05	
OREAS 905		0.33
GGC-04	13,1	
MRGeo08		1.06
OGGeo08		0.91
BLANK	0,01	
BLANK	-0,01	
BLANK		-0.01
BLANK		-0.01

### VO17092936 - Finalized

	C-IR06	ME-MS41
SAMPLE	C organic	Ca
DESCRIPTION	%	%
SY-4	0,12	
OREAS 920		0.32
OREAS 905		0.33
GGC-10	5,15	
MRGeo08		1.07
OGGeo08		0.89
BLANK	0,02	
BLANK		-0.01
BLANK		-0.01

### VO17092940 - Finalized

	C-IR06	ME-MS41
SAMPLE	C organic	Ca
DESCRIPTION	%	%
SY-4	0.13	
OREAS 920		0.34
GGC-10	5.05	
OGGeo08		0.91
BLANK	-0.01	-0.01
BLANK		

### VO17099028 - Finalized

	C-IR06	ME-MS41
SAMPLE	C organic	Ca
DESCRIPTION	%	%
SY-4	0,13	
SY-4	0,14	
SY-4	0,12	
SY-4	0,13	
SY-4	0,13	
SY-4	0,13	
GGC-04	13,1	
GGC-10	5,12	
OREAS 920		0.34
OREAS 920		0.30
GGC-04	13,6	
OREAS 905		0.35
GGC-10	5,05	
OREAS 920		0.33
OREAS 905		0.32
GGC-10	5,08	
GGC-04	13,7	
MRGeo08		1.03
MRGeo08		1.06
MRGeo08		1.09
OGGeo08		0.91
OGGeo08		0.88
OGGeo08		0.92
OGGeo08		0.86
BLANK	-0,01	
BLANK	0,01	
BLANK	-0,01	
BLANK	0,02	
BLANK	-0,01	
BLANK		-0.01
BLANK		-0.01
BLANK		-0.01
BLANK		-0.01
BLANK		-0.01
BLANK		-0.01
BLANK		-0.01

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 12: DATA VERIFICATION (cont.)

### TABLE No 12: LABORATORY STANDARDS (cont.)

#### VO17148341 - Finalized

	C-IR06	ME-MS41
SAMPLE	C organic	Ca
DESCRIPTION	%	%
SY-4	0,14	
SY-4	0,13	
SY-4	0,13	
SY-4	0,12	
SY-4	0,12	
OREAS 920		0.31
GGC-10	4,96	
GGC-10	4,86	
GGC-10	4,96	
OREAS 920		0.31
GGC-10	5,21	
OREAS 905		0.33
OREAS 905		0.32
GGC-10	4,91	
OREAS 920		0.32
GGC-04	13,35	
OGGeo08		0.89
AMIS0343		0.27
MRGeo08		1.07
MRGeo08		1.08
NCSDC86303		0.06
OGGeo08		0.91
OGGeo08		0.92
BLANK	-0,01	
BLANK	-0,01	
BLANK	-0,01	
BLANK	-0,01	
BLANK -	0,01	
BLANK	0,01	
BLANK		-0.01
BLANK		-0.01
BLANK		-0.01
BLANK		-0.01
BLANK		-0.01

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 12: DATA VERIFICATION (cont.)

TABLE No 13:

LABORATORY DUPLICATES

### VO17099028 - Finalized

	C-IR06	ME-MS41
SAMPLE	C organic	Ca
DESCRIPTION	%	%
V593586		3.15
V593586		3.21
V593588	1,54	
V593588	1,57	
V593596		2.28
V593596		2.31
V593622		0.63
V593622		0.65
V593624	8,67	
V593624	8,87	
V593632		1.15
V593632		1.14
V593658		4.46
V593658		4.66
V593660	0,5	
V593660	0,46	
V593672	8,63	
V593672	8,7	

### VO17092930 - Finalized

	C-IR06	ME-MS41
SAMPLE	C organic	Ca
DESCRIPTION	%	%
V593550		5.26
V593550		5.3
V593573		3.43
V593573		3.52
V593575	-0,01	
V593575	-0,01	

### VO17092936 - Finalized

	C-IR06	ME-MS41
SAMPLE	C organic	Ca
DESCRIPTION	%	%
V593533	0,06	
V593533	0,05	

### VO17092940 - Finalized

	C-IR06	ME-MS41
SAMPLE	C organic	Ca
DESCRIPTION	%	%

NIL

### VO17148341 - Finalized

	C-IR06	ME-MS41
SAMPLE	C organic	Ca
DESCRIPTION	%	%
V593701	0,44	
V593701	0,43	
V593717		0.51
V593717		0.52
V593737	1,25	
V593737	1,25	
V593753		2.56
V593753		2.56
V593773	0,15	
V593773	0,12	
V593789		4.29
V593789		4.35
V593797	0,44	
V593797	0,45	
V593799	0,07	
V593799	0,06	
V593802	0,15	
V593802	0,14	



# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## **Item 13: MINERAL PROCESSING AND METALLURGICAL TESTING**

This section does not apply for the Bell Graphite Project of Mayne Minerals inc., which presently is at an exploration stage.

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 14: MINERAL RESOURCE ESTIMATES

Since the acquisition of the Bell Graphite Project, **Mayne Minerals Inc.** did not carried out a mineral resource estimation.

The last mineral resource estimations were made in 2017 by the previous owner of the Project, Saint Jean Carbon inc. Those estimations are compliant with NI 43-101 and were described in Item 6 of the present report.

**Note: The Author has done sufficient work to classify the historical estimate as current inferred and indicated mineral resources, and consequently, the issuer can treat the 2017 estimate as current mineral resources.**

**Note: The Author has not done sufficient work to classify the historical estimate as current mineral reserves, and the issuer is not treating the historical estimate as current mineral reserves.**

# **BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.**

## **ADDITIONAL REQUIREMENTS FOR ADVANCED PROPERTY TECHNICAL REPORTS**

Those following sections do not apply for the Bell Graphite Project of Saint Jean Carbon inc., which is at an exploration stage.

**Item 15: MINERAL RESERVE ESTIMATE**

**Item 16: MINING METHODS**

**Item 17: RECOVERY METHODS**

**Item 18: PROJECT INFRASTRUCTURE**

**Item 19: MARKET STUDIES AND CONTRACTS**

**Item 20: ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL, OR COMMUNITY IMPACT**

**Item 21: CAPITAL AND OPERATING COSTS**

**Item 22: ECONOMIC ANALYSIS**

## **REQUIREMENTS FOR ALL TECHNICAL REPORTS**

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## **Item 23: ADJACENT PROPERTIES**

Since 2019, there no more adjacent mining property in the Bell Graphite Project area.



# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## **Item 24: OTHER RELEVANT DATA AND INFORMATION**

There is no other information and relevant data. The Author is not aware of any additional information or explanation necessary to make this report understandable and not misleading.

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 25: INTERPRETATION AND CONCLUSIONS

The Bell Graphite Project comprises 29 claims (CDC) covering a total area of 1,745.24 ha. The claims are in good standing and are now 100% owned by Saint Jean Carbon inc.. The Project is located in Buckingham and Lochaber Townships in southwestern Québec, about 170 km west of Montreal. Limitation to exploration included the permission from landowner and a gold-silver restriction over a rectangular area of 1.25 square kilometre, surrounding the former Bell Mines in the north central part of the Property.

Historically, the Bell Graphite Mine produced about 6,700 tons of graphite between 1906 and 1912 while the New Québec Mine produced 2,500 tons of graphite from 1912 to 1920. Exploration drilling using a standard drill machine with EXT core size, was performed in the early fifties for a total length of 1,497.02 m. This drilling campaign defined the downward extension of the Bell Graphite deposit. At the time, assays were expressed as percentage of carbon

A historical mineral estimation demonstrated the existence of 185 100 tons of mineral resources grading 9.4% graphite (1952, not compliant with NI 43-101). The mineralization is found at a depth of less than 80 m, with an average mining width of 4.2 m. Frobisher Ltd. concluded that sufficient “ore “ of commercial grade was present to support an operation on the scale of 100 to 150 tons per day for at least a decade.

Several site visits were made by the Author, and data were validated. The original DDH entries were adjusted to compensate for different location and grade deficiencies. Results are considered as adequate.

The Carbon content of the previous holes has been adjusted because at the time, the assays did not make a difference between organic, carbonate and graphitic carbon.

Adjacent 2017 and 1952 holes were compared and adjusted.

The modeling of the mineralization has been made in 3D and new cross-sections have been determined. It was understood that the graphite bearing system is oriented at 200° with a dip of -60°.

After several methodology tests, it has been determined that the Inverse Distance Weighting (IDW) interpolation was the most adequate method to evaluate the resources.

Several low cut-off grades were determined for the block model. With a prioritization of the grade and considering the optimization of the continuity of the mineralized zone, the low cut-off grade of 3.5% Cgp was retained. This permitted to calculate a mineral resource of 1 950 000 tonnes averaging 5.1% Cgp. This scenario is also identified as the base case for an Indicated Mineral Resource.

In addition, the geophysical surveys carried out since 2013 on the Rosenblat's Bell Property permitted to add more conductor axis, mainly East of the Bell Graphite Mine and running parallelly.

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 25: INTERPRETATION AND CONCLUSIONS (cont.)

Most conductors picked-up in the almost flat farm lands are corresponding to the Leda Clay deposit which fills a secondary graben oriented parallel to the Ottawa River graben and which covers the Ordovician sedimentary rocks and the basement. This very thick clay is conductive and slightly magnetic.

The Author consider that the Bell Graphite Project is a reasonable prospect for an eventual economic extraction. The zone is heavily transposed but there is a good continuity even at high cut-off grade. However, the dip and plunge of the Bell graphite deposit as well as the topography are not very favorable for a larger open pitable extraction.

# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

## Item 26: RECOMMENDATIONS

### 26.1 Exploration Program

Based on results obtained since 2013, C.D.G.C. recommends a follow-up drill program using NQ calibre drills to test for along strike and down dip extension to a depth of 200 m of the main graphite deposit and an evaluation at depth of the EM conductors picked up by the TDEM surveys.

At this stage, it is very important to survey meticulously all the old workings and have some surveyed bench marks established around the main mineral zones for a better control of the coordinates and elevations.

It is also recommended to dig several trenches across the recently discovered mineralized zones situated West of the main zone and to check the best conductive anomalies located in the central part of the property. This will economically valorize the known resource and will permit to extract several little bulk samples.

The total cost for the 2017 drilling program was approximately CAD\$ 280 per metre (including drilling, assaying, geology and management costs). Considering an average price increase of 10 percent for the drilling contract and the assays, the total cost for the 2021 recommended drilling and exploration program is estimated to CAD\$ 600,000.00.

### 26.2 Estimated Budget

#### Phase I

Surveying the old excavations. Establishing three permanent bench marks:	\$ 30 000.00
Detailed mapping of the old excavations area	\$ 30 000.00
Trenching the best airborne and ground EM anomalies	\$ 40 000.00

<b>Total Phase I</b>	<b>\$ 100 000.00</b>
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#### Phase II

Drilling Program for a total length of 1 500.00 m, all included:	\$ 420 000.00
Bulk sampling and Assaying:	\$ 20 000.00
Technical Report:	\$ 30 000.00
Contingencies:	\$ 30 000.00

<b>Total Phase II</b>	<b>\$ 500 000.00</b>
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<b>GRAND TOTAL</b>	<b>\$ 600 000.00</b>
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# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

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# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

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# BELL GRAPHITE PROJECT, BUCKINGHAM, QUEBEC.

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## **APPENDICES**



# **APPENDIX I**

## **DIAMOND DRILL HOLE RECORD**

## MAYNE MINERALS INC.

**Survey:** BL-21-01  
**Claims title:** CDC-2544545  
**Section:**  
**Township:** BUCKINGHAM  
**Level:**  
**Range:** V  
**Work place:** Buckingham  
**Contractor:** PROSPECTAIR GEOSURV...  
**Lot:**  
**Author:** Christian DEROSIER, P.Geo.  
**Start date:** 2021-02-08  
**Description date:** 2021-02-10  
**End date:** 2021-02-10

Collar

**Azimuth:** 80.00°  
**Dip:** -52.00°  
**Length:** 100.00

Surveyed

East	471449.0
North	5049913.0
Elevation	115.6

Assay - Averages

Zone	From	To	Core ...	Horiz.....	Vertica...	True t...	Cg (%)	

Description:

Core size: NQ

Cemented: No

Stored: No

# MAYNE MINERALS INC.

Description			Assay - Sample				
			From	To	Sample...	Length	Cg (%)
0.00	99.99	TUB Casing CASING Leda Clay. Yellow brown down to 15 m, then change to light grey-green. Very fine grained. Very few small boulders near the end of hole					
99.99	100.00	END END OF HOLE END OF HOLE Casing removed.					

## **APPENDIX II**

**VERTICAL PROJECTION OF DRILL HOLES**

**AND**

**LONGITUDINAL SECTION**