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MINING INFORMATION BULLETIN

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## Mineral Exploration Highlights in Québec in 2005

Thanks to healthy metal prices and the number of significant discoveries made in Québec, 2005 will be remembered as a great year for Québec in terms of exploration and mineral deposit appraisal expenditures. The latter reached a total amount of \$226.5M (preliminary data), similar to the amount of \$227.2M recorded in 2004.

In 2004, exploration and deposit appraisal activities focused on precious metals, namely gold (\$135M, 60% of overall spending), as well as copper and zinc (\$23M, 10%) mainly in northwestern Québec, nickel and copper (\$34M, 15%) essentially in Ungava, diamond (\$28M, 12%) especially north of the Monts Otish, and other commodities (\$7M, 3%).

The year 2006 promises to be another outstanding year. The bulk of exploration spending should be concentrated in the Abitibi and Ungava regions, but growing investments are to be expected in other regions of Québec, namely for gold and diamond in the James Bay region.

The report on mineral exploration activities in Québec in 2005 will be released during the PDAC convention. To give you a preview of its contents, here are some of the highlights.

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DV 2006-02 - [Report on mineral exploration activities in Québec 2005](#)

### Gold

Certain advanced projects reached significant milestones in 2005. In Val-d'Or, **Century Mining Corp.** resumed commercial gold production at the Sigma pit in late May 2005. At the Casa Berardi project north of La Sarre, **Aurizon Mines Ltd** began shaft sinking and continued underground development

work as well as definition and exploration drilling. Commercial production, averaging 175,000 ounces of gold per year, is slated to commence in November 2006. **Agnico-Eagle Mines Ltd** announced in July the start-up of the Goldex mine project, where reserves stand at 21.77 Mt grading 2.4 g/t Au, with an investment of \$176M over the 3-year construction period. Commercial production, averaging 170,000 ounces of gold per year, is slated to begin in 2008.

Many advanced underground gold exploration projects were announced or continued during the year. **Agnico-Eagle Mines Ltd** launched a \$30M program on the Lapa property near Cadillac, which includes sinking a shaft to 823 m depth, followed by underground development. Probable reserves are estimated at 4.08 Mt grading 8.91 g/t Au. Near Malartic, **Richmont Mines Inc.** invested more than \$10M on its East Amphi property, in order to advance underground development and complete a bulk-sampling program of 25,900 tonnes. At the Kiena mine complex, **Wesdome Gold Mines Inc.** carried out definition drilling in the VC, 388, North, and Martin zones, and excavated two exploration drifts on its Kiena/Wesdome project. Near Val-d'Or, **Alexis Minerals Corp.** began excavating a 1.5-km ramp in September 2005 and completed 18,000 m of drilling on the Lac Herbin project, in order to upgrade inferred resources currently estimated at 1.07 Mt grading 7.3 g/t Au.

Interesting results were also announced on other gold exploration projects in the Abitibi region. On the Wood-Pandora property, located a few kilometres west of Lapa, **Globex Mining Enterprises Inc.** and **Queenston Mining Inc.** intersected 6.0 m grading 25.35 g/t Au. At the Bachelor Lake project near Desmaraisville, **Metanor Resources Inc.** and **Halo Resources Ltd** conducted underground drilling and released a new resource estimate of 0.84 Mt grading 7.79 g/t Au in the measured and indicated categories. On the Windfall Lake property, located in the Urban-Barry belt east of Lebel-sur-Quévillon, **Noront Resources Ltd** intersected in drillhole a gold-bearing stockwork (5.9 g/t Au over 7.05 m). On a contiguous property, **Murgor Resources Inc.** encountered high-grade gold zones in drillhole (10.46 g/t Au over 11 m).

The James Bay region garners more and more attention for gold since the discovery by **Virginia Gold Mines Inc.** of the Roberto mineralized system on the Eleonore property northeast of Opinaca Reservoir. This high-grade gold system, now traced in drillhole over a strike length of 1.9 km and to a vertical depth of 900 m, contains three main zones: Roberto (22.56 g/t Au over 15 m), Mid-Roberto (13.35 g/t Au over 10.8 m; 11.11 g/t Au over 5.1 m), and Roberto Est (11.23 g/t Au over 10.8 m), all of which remain open at depth and along strike. In December, Virginia Gold Mines announced the signing of an agreement with **Goldcorp Inc.** whereby the latter will acquire the Eleonore project pursuant to an approved plan of arrangement. The company intends to actively pursue exploration and development work on the project in 2006. An initial mineral resource estimate is expected for the summer 2006. This significant discovery in a new geological setting has spurred a reassessment of the regional gold potential. **Everton Resources Inc.** and **Azimut Exploration Inc.** reported the discovery of a 1.7-km-long gold-bearing trend on the A-Block of the Opinaca property, contiguous to the north of Eleonore. Surface grab samples collected in strongly metamorphosed sedimentary rocks yielded grades ranging from 0.1 to 29.07 g/t Au.

## Base Metals

In the base metals sector, some advanced projects reached significant milestones but the year was shadowed in northwestern Québec by mine closures at Bouchard-Hébert and Louvicourt. In September 2005, **Campbell Resources Inc.**'s Copper Rand 5000 mine had produced 3.6 million pounds of copper and 3,944 ounces of gold, but the development of new production stopes is required to reach full commercial production. In November, **Breakwater Resources Ltd** announced the development of the past-producing Langlois (Zn-Ag-Cu) mine near Lebel-sur-Quévillon, where production is slated to begin in 2007.

Promising results are also reported for many copper and zinc exploration projects. **Falconbridge Ltd** and **Alexis Minerals Corp.** announced in March a significant discovery in the Rouyn-Noranda mining camp. One intersection yielded grades of 3.57% Cu, 0.25% Zn, 0.52 g/t Au, and 7.27 g/t Ag over 52.70 m. An initial resource estimate is expected in 2006, although the depth extension of mineralized zones remains to be defined. Near Val-d'Or on the Louvex project, located 1 km from the former Louvicourt mine, **Alexis Minerals Corp.** and **Novicourt Inc.** intersected an alteration zone with stringer sulphides over a core length of 235.9 m, including a 12.4-m section grading 1.48% Zn. Near Chibougamau, **COGITORE Resources Woodruff Capital Management Inc.** completed 9 drillholes to test the former Lemoine mine host sequence and intersected 3 m grading 3.20% Zn and 0.31% Cu. **Campbell Resources Inc.** also reported good results from drillholes testing the depth extension of the Corner Bay deposit, including a 16.10-m interval grading 9.27% Cu.

## Diamond

North of the Monts Otish, **Ashton Mining of Canada Inc.** and **SOQUEM INC.** continued drill-testing diamond-bearing kimberlite bodies at Renard 2, 3, 4, 7, 8, 9, and 10, as well as diamond-bearing kimberlite dykes of the Lynx system. In April, a valuation of 459 carats of diamonds recovered from a 664-tonne bulk sample collected in 2004 from Renard 2, 3, 4, and 65, yielded a modeled value of US \$88 per carat. Summer fieldwork led to the discovery of an important kimberlite dyke (Hibou) and of several kimberlitic boulders scattered between the Renard cluster and the Lynx dyke system. In November, the joint venture announced that the Renard 2, 3, 4, and 9 bodies could potentially host between 18.6 and 22.0 million carats of diamonds within an aggregate 23.2 to 27.5 million tonnes of kimberlitic material. The joint venture plans to invest \$24M in exploration on the Foxtrot property in 2006, namely to collect a parcel of at least 6,000 carats of diamonds from a bulk-sampling program on the Renard 2, 3, 4, and 9 kimberlitic bodies.

## Nickel

In the Nord-du-Québec region, the Ungava belt consistently yields new and promising nickel discoveries. **Canadian Royalties Inc.** uncovered two new zones (Ivakkak and Tootoo West). The Ivakkak zone yielded average grades of 3.3% Ni, 3.6% Cu, 1.6 g/t Pt, and 4.9 g/t Pd over 9.5 m, within a wider interval grading 1.76% Ni, 2.11% Cu, and 3.95 g/t Pt+Pd over 22.5 m. The Tootoo West zone graded 1.10% Ni, 1.06% Cu, and 6.51 g/t Pt+Pd+Au over 19 m, including 2.88 m grading 31.02 g/t Pt+Pd. Total resources for deposits on the Raglan South Nickel project held by **Canadian Royalties Inc.** are currently estimated at more than 10 million tonnes. **Knight Resources Ltd** and **Anglo American Exploration (Canada) Ltd** also reported a new discovery on the West Raglan project. The Century zone, in the Greater Frontier area, yielded interesting intercepts, including 7.8 m at 2.16% Ni, and 1.4 m at 3.37% Ni. **Anglo American Exploration (Canada) Ltd** and **Goldbrook Ventures Inc.** reported the discovery of two Ni-Cu-Pt-Pd showings on the Bélanger property: the Pad1/R2 zone with grades of 0.85% Ni, 1.49% Cu, 1.14 g/t Pd, and 0.14 g/t Pt over 24.73 m, and the Timtu zone grading 1.01% Ni, 0.63% Cu, 1.81 g/t Pd, and 0.57 g/t Pt over 8.65 m. **Falconbridge Ltd** has identified zone 5-8, located 5 km east of the Katinniq mill, as the next core mining area at the Raglan mine. A 44.65-m section in Lens 8H yielded grades on the order of 3% Ni and 0.94% Cu.

In the Grenville Province, **Exploration Esbec Inc.** discovered a new showing north-northwest of Forestville, where grab samples yielded assays up to 1.40% Ni. Near Mont-Laurier, **Quinto Technology Inc.** carried out trenching and channel sampling, and reported results including an average grade of 2.22% Cu over 6.45 m. **Matamec Explorations Inc.** namely drilled three holes along the northern extension of the former Renzy Lake mine. Best results are: 1.01% Ni and 1.24% Cu over 14.7 m. North of Port-Cartier, two prospectors discovered uranium occurrences associated with pegmatites and pink granites. Grab samples yielded grades of 2920 ppm U and 995 ppm Th.

In the Gaspésie region on the Lac Arsenault property, **Ressources Appalaches Inc.** traced the Baker gold-bearing quartz vein over a strike length of 80 m and down to 90 m depth. Grades of 7.4 g/t Au and 74.3 g/t Ag over 0.5 m are reported. On the Mont-de-l'Aigle property, drilling by the same company encountered stockwork breccias with pyrite, chalcopyrite, hematite and magnetite mineralization, over thicknesses reaching 60 m and grades on the order of 0.2% Cu. In the Bas-Saint-Laurent region on the Sainte-Marguerite property, **Puma Exploration Inc.** confirmed in drillhole the presence and continuity of two mineralized zones, composed of subhorizontal gold-bearing quartz veins, over respective lengths of 35 and 70 m. Best results to date on these zones range from 1.6 g/t Au over 0.3 m to 40.8 g/t Au over 0.2 m.

## Architectural Stone

In the architectural stone industry, **A. Lacroix et Fils Granit Ltée** and **Granijem Inc.** continued the development of a number of deposits respectively located in Saint-Alexis-des-Monts and north of Saint-Ludger-de-Milot, as well as north of Baie-Comeau and near the Manic-3 hydroelectric dam. In Saint-Mathieu-de-Rioux, **Les Pierres Saint-Mathieu Inc.** began quarrying a red sandstone variety used for masonry and landscaping stone. More than 15 exploration projects for slate and marble are reported in 2005, a record high in many decades in Québec.

## Industrial Minerals

In the field of industrial minerals, **Junex Inc.** completed the drilling of a new well in Bécancour and increased its natural brine production capacity. In the Murdochville area, **Exploration Orbite V.S.P.A. Inc.** acquired mining rights on the Grande-Vallée red clay deposit, which contains mineral substances of interest for aluminium smelters, cement plants and refractory plants.



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## 313 new golds targets in the Abitibi-Témiscamingue Region

Again this year, a delegation from Québec will be in Toronto from March 6 to 8, for the annual convention of the *Prospectors and Developers Association of Canada*. The *Ministère des Ressources naturelles et de la Faune* will take advantage of the occasion to disseminate a Géologie Québec study on the gold potential of the Abitibi area. It defines, for the entire Abitibi area, 313 targets corresponding to highly prospective gold zones that had not been staked at the time of the study.

Beginning March 6, the document (EP 2006-01) , will be available on CD from the [Department's website](#); it includes:

- 132 maps of gold potential at 1:50,000 in PDF format
- A comprehensive 1:50,000 map showing the gold potential of the Abitibi area in PDF format
- A PDF document detailing study design
- The highly prospective zones identified in the Abitibi area
- An Access database of the 313 unstaked targets inventoried
- Vector files and raster images of the 19 attributes dealt with in the project

Please note that it will only be available in French. The English version (EP 2006-02) will be published on May 15, 2006.



## Discover the potential of the Urban-Barry Belt at the PDAC Convention

Pierre Rhéaume  
Direction de Géologie Québec

The potential of the Urban-Barry Belt (UBB) will be under the spotlight in Québec's booth, at this year's PDAC convention. Since 2000, the Department has completely re-evaluated the geology, structure and stratigraphic setting of this emerging mining camp. The progress of exploration work on the UBB will probably translate into new discoveries and might even lead to some of the known deposits being put into production in the medium or short term.

This new interpretation of the UBB has provided a conceptual framework that accounts for most of the gold mineralization for which the Belt is known. The work has also led to the discovery of new exploration guides and metallogenetic models for future exploration. In particular, it has revealed the development of a large synvolcanic hydrothermal system in the central part of the UBB. The characterization of the system has made it possible to account for the distribution of alteration, metals and trace elements associated with gold mineralization in the Windfall Lake and Lac aux Loutres areas.

The UBB's synvolcanic mineralization is characterized by gold-bearing pyrite veins and stringer zones within narrow silicified aureoles crosscutting a regional potassic alteration zone. Orogenic gold veins associated with regional fault zones and carbonate alteration have also been noted. The UBB also has interesting potential for other types of deposits, including volcanogenic base metal deposits.

New products will be available in 2006:

- four geological maps at a scale of 1:50,000 (NTS 32G04, 32G03, 32B14, 32B13),
- eight geological maps at 1:20,000 (NTS 32G04-101, 32G04-102, 32G03-101, 32G03-102, 32B14-201, 32B14-202, 32B13-201, 32B13-202),
- an update of the 3D model of Lac aux Loutres,
- a regional 3D model of the UBB,
- a study of the UBB's stratigraphy.



## **Québec-Ontario Partnership: To Improve our Knowledge of the Abitibi Belt**

Robert Marquis  
Manager, Service géologique du Nord-Ouest  
Géologie Québec Department

For the first time in its history, the Géologie Québec directorate is developing its annual exploration program for the Abitibi area jointly with its Ontarian counterpart, the *Ontario Geological Survey*. The goal of this unprecedented partnership is to acquire new geological knowledge relevant to mineral exploration for the entire Abitibi Greenstone Belt. In 2006-2007, the emphasis will particularly be on sharing information concerning the Blake River Group as well as the Kidd-Munroe and Kinojévis assemblages. It will rapidly improve our understanding of these complex areas that straddle the border and are highly prospective for copper.

This major partnership project is benefiting significantly from the Geological Survey of Canada's Targeted Geoscience Initiative IGC/TGI, which has identified the Abitibi project as a federal priority. To date, several planning sessions have been held to come to an agreement on a tripartite method of governance, and to set objectives, priorities, products, and deadlines. A two-day workshop was held in Rouyn-Noranda in early February to determine how the new data collected by the various partners would be managed, which is essential to ensuring its rapid integration into existing delivery systems. The respective contributions of Québec, Ontario, and Canada, which will make it possible to meet the targeted objectives, were also precisely defined.

This new partnership will make it possible to open up the network to a greater number of stakeholders. It will also increase the economic impact of geological work carried out in the Abitibi Greenstone Belt, in a sustainable economic development perspective.



## **Amendments to the Mining Act Adjustements to fine tune the mining system**

The government adopted the Québec Protected Areas Strategy, in the last few years. The *Ministère des Ressources naturelles et de la Faune (MRNF)* is already contributing to it through the exceptional forest ecosystems, in particular, and intends to cooperate even more by protecting outstanding geological sites (OGS). The goal is to protect Québec's geological heritage, which, in a manner of speaking, is part of the Earth's archives.

The Act amending the Mining Act was assented to on December 16, 2005. In addition to the special protection measures for OGSs, the Department made additional amendments to the Mining Act:

- The Minister's power to classify outstanding geological sites to ensure the conservation and protection of Québec's geological heritage.
- A length of eighteen months, instead of six, for the temporary suspension of the right to stake land or designate it on a map. This suspension usually precedes a ministerial order reserving

land to the State or withdrawing it from mining activities.

- The possibility for an inspector, authorized by the Minister, to take photographs on land where an activity governed by the Mining Act is being carried out, to prove a penal offence in court.
- The prohibition against prospecting on land withdrawn from mining activities or subject to a notice of temporary suspension.
- The transmission of a monthly or quarterly report of activities from mine operators within 30 days after the end of the period referred to in the report.

#### See also

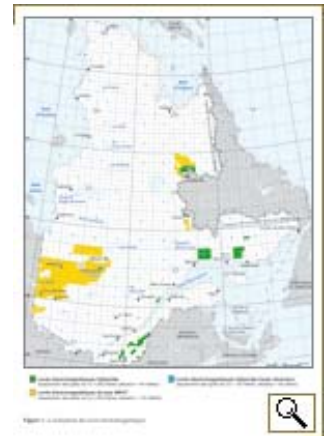
Bill 121, *An Act to amend the Mining Act* ([PDF Format, 72,1 Kb](#))



## Electromagnetic (EM) anomalies: a review of digital data

SIGEOM is Québec's GIS geomining information system. This unique tool contains a geoscience database full of information collected over 150 years. Constantly evolving, SIGEOM is supplied with new data from geological, geochemical and geophysical surveys carried out across Québec.

The results of airborne geophysical surveys are an important component of SIGEOM. The **electromagnetic** (EM) anomaly database, combined with other types of data available in SIGEOM, is an exceptional tool for the mineral industry. It makes it possible, at minimal cost, to identify new exploration targets in Québec. In this regard, from 1969 to 1997, the Québec Government funded 59 magnetic and electromagnetic surveys. The surveys cover 204 NTS map sheets at 1:50,000. They were first published on paper in reports of the DP series. Then, in the mid-1990s, the data was converted and disseminated in digital format.



(PDF Format, 1,8 Mb  
(Available in French) )

The *Ministère des Ressources naturelles et de la Faune* recently revised the numeric data relating to EM anomalies available in SIGEOM. From now on, all the information will be fully consistent with data from the original surveys in terms of position and characteristics such as conductivity-thickness (conductance) and magnetic field values.

The revised EM anomaly data will be accessible in July 2006 through **E-sigeom à la carte**. It will be possible to order it by unit or by lot, on NTS map sheets at a scale of 1:50,000. The files will be provided in ArcView (SHAPE) or MapInfo (MID/MIF) formats.

For more information about SIGEOM:

#### Centre de service des Mines

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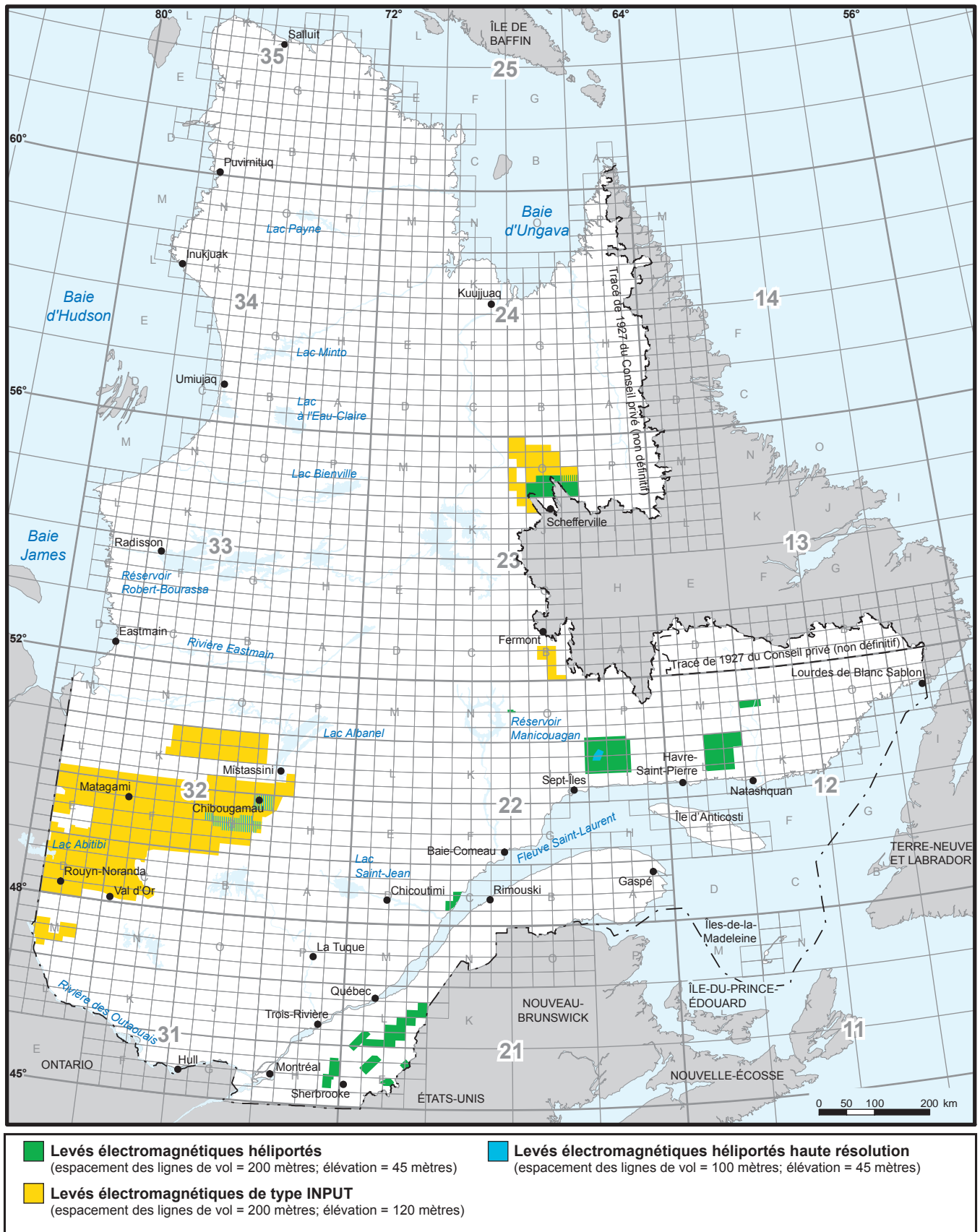


Figure 1 - Localisation des levés électromagnétiques.