Note to readers
This report provides readers with an overview of metal mining activities (iron and titanium; gold; nickel, platinum group elements, and cobalt; copper, zinc; niobium, lithium, and tantalum; rare earth elements) as well as graphite, phosphate, and diamond mining activities in the province of Québec. Feldspar, mica, salt, and silica mining activities are not discussed.

For each metal or mineral substance discussed in this report, readers will find a table with information on the mineral reserves and resources for the mines and mining projects that have passed the preliminary economic assessment stage.

There is also a map for each metal or mineral substance showing the location of producing mines and mining projects.

The information presented in the report is from June 2018.

Photographs
Mathieu Dupuis, photographer
Francis Fontaine, MERN (photos of minerals)

Ministère de l’Énergie et des Ressources naturelles

Legal Deposit
Bibliothèque et Archives nationales du Québec, 2018
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Québec: A WEALTH OF MINERALS AND OPPORTUNITIES

Québec has significant mining potential that accounts for one-fifth of Canada’s mineral production. The province produces and beneficiates 15 metals and 14 non-metallic minerals, making it the most diverse resource base in Canada. This diversification is set to increase with the arrival of tantalum, vanadium, and apatite mining projects.

Québec is strategically located above the Northeastern United States. It is close to major population and industrial centers and has easy access to Europe and Asia thanks to its deepwater ports.

Québec also works closely with associations that represent the mining sector and with host communities. The latter are natural project partners and work with the government to develop the mining sector and promote it while respecting the principles of sustainable development.

The results of the Fraser Institute’s most recent survey are indicative of the interest Québec has generated among mining investors. The province was ranked the 6th most attractive region in the world according to the mining and exploration companies surveyed.1

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1. [Online], [fraserinstitute.org/categories/mining].
An attractive
BUSINESS ENVIRONMENT

A STABLE LEGAL FRAMEWORK
The Government of Québec has prepared a document in French only that lists all the laws and regulations that govern mining development.

The mining industry is governed primarily by the Mining Act (CQLR, chapter M-13.1), the Mining Tax Act (CQLR, chapter I-0.4) and the Act respecting transparency measures in the mining, oil and gas industries (CQLR, chapter M-11.5).

Mineral substances in Québec generally belong to the province, with a few exceptions. Any person may obtain exclusive exploration rights (a claim) for a parcel of land designated on a map, provided their request complies with the Mining Act and they are the first to register a claim on the land.

Québec laws and regulations can be consulted free of charge on the LégisQuébec website.

Mining Act
The primary purpose of the Mining Act is to promote mineral prospection, research, exploration, and development in keeping with the principle of sustainable development and taking into account other possible uses of the territory. It aims to foster dialogue with communities, maximize the economic benefits, and encourage companies to process their minerals in Québec. It helps protect the environment and ensures greater transparency for better social acceptability through:

- A chapter on First Nations communities, which provides for the development of a First Nations community consultation policy specific to the mining sector. The policy will complement the government policy and will clarify the roles and responsibilities of the various stakeholders. It is slated for publication in 2018-2019. In 2015, the Ministère de l’Énergie et des Ressources naturelles (MERN) also worked with the Secrétariat aux affaires autochtones and other government departments to publish a document entitled Information for Developers and General Information Regarding Relations with Aboriginal Communities in Natural Resource Development Projects;
- A public consultation by the promoter for any metal mine project with a production capacity of less than 2,000 tons per day. MERN published the Guide for Public Consultations Conducted by the Promoter of Certain Mining Projects which describes how to conduct a public consultation in accordance with the Mining Act;

2 [Online], [mern.gouv.qc.ca/publications/mines/cadre-normatif-domaine-minier.pdf].
4 [Online], [legisquebec.gouv.qc.ca/en/ShowDoc/cs/I-0.4].
5 [Online], [legisquebec.gouv.qc.ca/en/showdoc/cs/M-11.5].
6 [Online], [legisquebec.gouv.qc.ca/en].
7 [Online], [mern.gouv.qc.ca/department/social-acceptability].
8 [Online], [autochtones.gouv.qc.ca/publications_documentation/publications/guide_inter_2008_en.pdf].
The establishment of a monitoring committee to get local communities involved in the project. The *Guide to the Organization of the Monitoring Committee*[^11] is available on the MERN website. It contains information for mine operators and monitoring committee members;

The approval of a land rehabilitation and restoration plan before a mining lease is issued. To inform people of the technical content of such plans and the general requirements for restoring mine sites in Québec, MERN has published *Guidelines for Preparing Mine Closure Plans in Québec*[^12];

An obligatory financial guarantee covering 100% of the restoration costs for the entire mine site, supplied within two years of the plan approval date;

The annual publication of the amount and value of ore mined and the royalties paid to the province by mining companies to ensure greater transparency.

**Mining Tax Act**

Québec has one of the friendliest business climates for mining investments. Under the Mining Tax Act, Québec’s tax regime includes various measures to support companies in different phases of the mining cycle, including:

- A refundable duties credit for losses, a unique measure in Canada, which provides a refund of up to 16% of the amount of eligible work (exploration-related development and pre-production development);
- An allowance for community consultations, including First Nations consultations, for mining projects (allows mining companies to deduct a portion of these costs);
- An environmental studies allowance so mining companies can deduct a portion of the costs incurred to produce studies on the social and environmental impact of their projects.

The Act also helps stimulate mining in Québec, including on Plan Nord territory, through:

- An exploration allowance that adds an extra 25% to exploration expenses incurred on Plan Nord territory;
- An additional allowance for mines located on Plan Nord territory to offset the high costs associated with starting production at a mine on this territory.

The mining tax system also facilitates the processing and transformation of extracted mineral substances. For example, companies can get an allowance to acquire assets used in ore processing. The allowance is a percentage of the cost of the items and is determined based on the nature of the processing activity. This percentage is one of the most advantageous in Canada.

**Taxation Act**

The Government of Québec's goal is for the tax regime that applies to Québec businesses to compare favorably to that of its business partners. Québec’s businesses conditions encourage investment and innovation. Its corporate and personal tax regimes include incentives to encourage mineral exploration:

- A 15-year tax holiday for major investment projects, applicable to both corporate income tax and Health Services Fund contributions;
- The resource tax credit, which refunds up to 38.75% of eligible exploration expenses incurred in Québec by an eligible corporation;
- The flow-through share system, under which individuals can deduct up to 120% of the cost of their investment.


Act respecting transparency measures in the mine, oil and gas industries

Born of an international initiative, the Act respecting transparency measures in the mine, oil and gas industries\(^\text{13}\) requires companies to report the amounts they pay each year to various levels of government, government agencies, municipalities, First Nations communities, and organizations that perform public functions for any of them. The information obtained is public.

The requirement applies to extractive companies listed on a Canadian stock exchange that are headquartered in Québec and to large extractive companies, whether listed on a stock exchange or not.

Under the Act, these companies must declare any payment made to a single recipient that totals $100,000 or more in a given fiscal year, in the same payment category such as taxes, royalties, expenses, production fees, certain dividends, bonuses, and contributions to build or improve infrastructure. This applies to payments in cash and in kind.

To avoid putting an unnecessary administrative burden on businesses, the Act is harmonized with the Extractive Sector Transparency Measures Act adopted by Canadian Parliament and the requirements of the European Union Transparency Directive. Québec recognizes returns filed with other\(^\text{14}\) authorities whose requirements are equivalent to those set out in the Act so companies do not have to file separate returns in each country where they are subject.

A SKILLED WORKFORCE

Québec is recognized worldwide for the quality of its labor force. The province has long been a mining producer and boasts experienced workers in every region, as well as specialized suppliers for every phase of the mineral development process. According to a study published in 2016, nearly 5,500 suppliers of goods and services work for the mining sector, 75% of which are in Québec\(^\text{15}\). The mining industry directly employs nearly 16,000 people\(^\text{16}\).

Several leading educational institutions meet the training needs of the mining workforce. In 2008 was created the Institut national des mines\(^\text{17}\), an organization whose mission is to help the Government of Québec meet its commitment to provide mining education.

SOCIAL ACCEPTABILITY: FOR RESPONSIBLE DEVELOPMENT

Québec fosters a collaborative climate where stakeholders in the mining sector work closely with the local and First Nations communities in the areas where mining activities take place. The Ministry's social acceptability guidelines\(^\text{18}\) were adopted to that end.

Agreements with Indigenous Peoples

Québec has already signed treaties with the Cree Nation, the Inuit, and the Naskapi Nation that cover nearly 1.1 million square kilometers (65% of Québec). Indigenous rights on this land have been clarified and the processes that govern the relationship between the parties are defined. The Government of

\(^{13}\) [Online], [mern.gouv.qc.ca/mines/transparency-measures].

\(^{14}\) The regulations under the Act (chapter M-11.5, r. 1) contain a list of these authorities. At the time of writing, the list includes Canada and the vast majority of European countries.

\(^{15}\) [Online], [amq-inc.com/en/documents].

\(^{16}\) This includes mining and mining support activities and some processing activities for zinc, copper, cement, clay, and lime, among others.

\(^{17}\) [Online], [inmq.gouv.qc.ca].

Québec has also established, in a policy, rules for consulting Québec’s other Indigenous nations when a project may affect Indigenous or treaty rights that have been established or credibly claimed. These rules can be replaced by sector-specific consultation agreements with the Indigenous communities concerned, such as the agreement signed with the Abitibiwinni First Nation that defines a clear framework for consulting and accommodating the community on mining activities.

**Support from Project Leaders**

To implement these guidelines, companies must ensure that a project manager from the MERN regional office is available to help developers and local stakeholders obtain information and discuss projects, acquire a better understanding of their respective issues, and ultimately help shape projects that are well received by the community.

**New Leverage for Municipalities**

In order to foster the social acceptability of mining projects in affected municipalities, the Government of Québec published a land use planning guideline for mining activities in January 2017, entitled *Pour assurer une cohabitation harmonieuse de l’activité minière avec les autres utilisations du territoire*¹⁹ (in French only). Regional County Municipalities (RCMs) can use their new land use planning powers to mark off territories that are incompatible with mining activity in their land use and development plans²⁰. This government guideline provides mining developers with greater knowledge of the territories where their mining activities are compatible with other citizen activities.

**THE GOVERNMENT OF QUÉBEC: YOUR INVESTMENT PARTNER**

The government has a special Capital Mines Hydrocarbures fund that it uses to acquire holdings in companies that mine or process mineral substances within the province of Québec. The fund has a capitalization of $1 billion, half of which is earmarked for Plan Nord territory. This amount is in addition to the $500 million in funding from Ressources Québec, a subsidiary of Investissement Québec, which is the entry point for companies looking to invest in the mining sector.

**PLAN NORD: CONCRETE SUPPORT FOR NORTHERN DEVELOPMENT**

The Plan Nord²¹ is designed to develop the mining, forestry, energy, social, cultural, and tourism potential of the part of Québec located north of the 49th parallel. By aligning economic, social, and environmental considerations, the Government of Québec hopes to make the Plan Nord a reference for collaborative, responsible, and sustainable northern development and a project that Quebecers can get behind.

The Plan Nord fosters an environment conducive to mining development by harnessing the diversity of Québec’s resources. The Plan Nord territory shows significant potential in mineral resources including nickel, cobalt, platinum, zinc, iron, ilmenite, gold, apatite, diamond, lithium, vanadium, rare earth elements, and graphite.

The Plan Nord also aims to make it easier to access Northern Québec by land, sea, and air. Improving existing telecommunications infrastructure and supplying Northern Québec with clean energy are also priorities. The plan includes measures to support scientific research throughout this vast territory, notably through Institut nordique du Québec.

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²⁰ [Online], quebecmunicipal.qc.ca/index.asp?module=articles&action=details&id=85423.
²¹ [Online], plannord.gouv.qc.ca/en.
Société du Plan Nord (SPN) is the organization in charge of implementing the Plan Nord. It helps integrate and coordinate planning and development of the Plan Nord territory in consultation with Québec ministries and agencies, regional authorities, First Nations communities, and the private sector. With regional service centers and a head office in Québec City, the organization plays a major role in supporting communities and organizations that have projects on the territory. SPN also has a marketing office to lend support and help clients and investors in the public and private sectors with their projects and to maximize economic benefits to the region.

Infrastructure That Facilitates Access to Land and Resources
Québec is served by a vast network of road, rail, port, and airport infrastructure, most of which is shown on Map 1.

Transportation is, of course, an essential consideration for mining operations. SPN supports the development of ore transportation and transshipment infrastructure in order to keep the province conducive to natural resource development.

Road Network and Access Roads
SPN will inject hundreds of millions of dollars over the next few years to repair roads that provide access to resource-rich areas. In particular, SPN is involved in projects to upgrade and repair the James Bay Road and highway 389.

To further encourage mining development on Plan Nord territory, SPN Nord will provide financial support to mining companies that carry out major upgrade work on existing multi-resource roads with a view to opening a mine site. $20 million has been earmarked for this measure.

Since building new infrastructure to access remote resources can strain the finances of northern development projects, SPN has an interdepartmental committee, which includes MERN, tasked with submitting a proposal to the government for the creation of a new multi-user infrastructure financing framework.

Société Ferroviaire et Portuaire de Pointe-Noire
In 2016 the Government of Québec acquired the railway and port infrastructure from Pointe-Noire to Sept-Îles through Société ferroviaire et portuaire de Pointe-Noire (SFPPN) in order to make the railways, docks, and other transshipment facilities in the region accessible to all potential users. SFPPN became a subsidiary of SPN following a $120+ million investment by the latter to purchase SFPPN’s assets and restart operations.
Map 1 - Transportation Infrastructure in Québec

Transport infrastructures:
- Main Road
- Railroad
- Energy transmission line
- Main network airport
- Local airport
- Breakwater
drop-off merchandise
- Port
- Deep-water port
- Dock

Source: SIGÉOM
Date: June 2018
ENERGY POLICY: ENERGY IN QUÉBEC, A SOURCE OF GROWTH

Québec is a major producer of electricity, 99% of which comes from renewable sources. The province ranks sixth in the world in hydropower generation.

Throughout much of the province, investors have access to green, renewable energy delivered through a reliable distribution network. Companies can also benefit from extremely competitive energy rates, depending on their consumption.

The 2030 Energy Policy includes energy priorities that will benefit the mining sector, including:

- Ensure natural gas supply at competitive prices to enhance the profitability of mines, reduce GHG emissions, and attract new investments
- Ensure electricity supply under competitive conditions for mining development
- Support projects to convert electricity generation using fossil fuels to renewable energy sources

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22 [Online], hydropower.org/2017-hydropower-status-report.
23 [Online], politiqueenergetique.gouv.qc.ca/home/?lang=en.
A VISION FOR THE FUTURE of mining

STRATEGIC VISION FOR MINING DEVELOPMENT IN QUÉBEC 2016-2021

The Strategic Vision for Mining Development in Québec 2016–2021 (Strategic Vision) rallies all stakeholders who want to advance the interests of the mining industry and create a business environment conducive to industry development. It ties in with other government policies, including Plan Nord.

The Strategic Vision defines three broad guidelines that adhere to the principles of sustainable development:

- Advance existing mining industries and develop new ones;
- Prevent and mitigate environmental impacts;
- Promote transparency and citizen participation.

The first guideline covers economic development measures for mining exploration and development, primary processing, and the network of suppliers and equipment manufacturers. The main measures for mineral exploration are in the form of tax incentives. The government’s commitments to mineral exploration companies are primarily detailed in Plan Nord.

Financial support from the Government of Québec via the Capital Mines Hydrocarbures fund, which is managed by Ressources Québec, is an important factor in the development of the mining industry.

Moreover, to speed up the process for obtaining the necessary authorizations in the early phases of a mining project, a single point of access will be established to coordinate the issuance of various permits and authorizations. The Strategic Vision also includes measures to address the labor and training needs of local and First Nations communities in the mining sector, as well as actions to help equipment manufacturers better meet the needs of customers and break into foreign markets.

The second guideline of the Strategic Vision focuses on the environment. For example, all the mine reclamation plans filed and approved after December 10, 2013, are available on the MERN website, as well as the amounts of the financial guarantees required. Furthermore, to stimulate research in mine tailings beneficiation, MERN has added it as a research area under the Joint Research Program on Sustainable Development in the Mining Sector.

The third guideline of the Strategic Vision focuses on the social aspect. Since social acceptability is one of the main issues for the mining industry, a number of actions have been planned to address it. With the support of Association de l’exploration minière du Québec (AEMQ), the MERN is funding the final phase of development for a sustainable development certification program for Québec’s mineral exploration sector. The MERN will also collaborate with the government on efforts to foster the use of local labor on major mining projects.

SUPPORTING INNOVATION

To make Québec’s mining sector even more competitive, the Government of Québec has rolled out a number of initiatives to support innovation and research and development. It has identified the following research priorities:

- Deep mineral exploration and mining;
- Development of the mining sector in the North;
- Energy conservation and greenhouse gases;
- Impact of mining development on the environment and communities;
- Development and optimization of geomatics tools;
- Social acceptability of mining projects;
- Mining waste beneficiation;
- Adaptation to climate change.

Research is supported through:

- **Mining Research and Innovation Support Program (PARIDM)** launched in 2017. This financial assistance program helps fund research projects conducted with recognized universities and research organizations.

- **Hydrometallurgical Processes** The Government of Québec has granted the Ministère de l’Économie, de la Science et de l’Innovation (MESI) an additional $5 million over three years (2016–2017 to 2018–2019) to acquire new knowledge on these processes. The government has also invested nearly $7 million to set up COREM’s new hydrometallurgy platform, which will promote the implementation of efficient, profitable, and environmentally friendly mining projects in emerging mineral sectors.

- Research organizations: The government provides financial support for **CONSOREM**, a research consortium on mineral exploration; **COREM**, a research consortium on mineral processing and transformation; and **Groupe MISA** mines, innovations, solutions, applications, a network of experts who actively contribute to the development of innovative equipment and services for all mining activities, from exploration to restoration.

- **Joint Research Program on Sustainable Development in the Mining Sector** implemented by Fonds de recherche du Québec – Nature et technologies (FRQNT): $16.5 million to fund 63 research projects, the results of which will be available by 2020. The program is intended for university and college researchers and is designed to address the identified research priorities. The minimum contribution from the mining industry must be 10% of project costs.

Québec’s mining sector includes at least 45 research centers whose work is incredibly beneficial:

- 3 college centers for the transfer of technology (CTMP-Thetford, CMQ-Trois-Rivières, and CTRI-Rouyn-Noranda);
- 12 private or university research centers;

[25](https://mern.gouv.qc.ca/mines/programmes/programme-dappui-a-recherche-a-innovation-domaine-minier)

[26](https://economie.gouv.qc.ca/fr/bibliotheques/programmes/aide-financiere/programme-de-soutien-aux-organismes-de-recherche-et-dinnovation-pso/soutien-aux-projets/projets-de-recherche-innovation/appel-de-projets-visant-le-developpement-des-connaissances-en-hydrometallurgie/)

[27](https://consorem.ca)

[28](https://corem.ca)

[29](https://legroupemisa.com)

[30](https://mern.gouv.qc.ca/mines/programmes/recherche-en-partenariat-developpement-durable-secteur-minier)
24 research chairs linked to Québec universities;
> 2 ACCORD niches of excellence (MISA and Industrial, Mining and Metallurgy Process Engineering);
> 5 research laboratories, 3 at Polytechnique Montréal and 2 at Université du Québec à Chicoutimi.

GEOLOGICAL KNOWLEDGE AND MINERAL RIGHTS: ADVANCED MANAGEMENT TOOLS

The acquisition of new geoscientific knowledge throughout the territory is a key component of mining development in Québec. To achieve this, the government has invested $15 million annually over the past few years to acquire, process, and publish geological data.

Québec has developed the SIGÉOM database (Québec geominning information system), which contains geoscientific information that has been collected for over a century by the mining industry and the MERN. An Internet portal with an interactive map provides access to the geoscience database, which is one of the most comprehensive in the world.

In Québec, mining rights are managed electronically and can be accessed online through the GESTIM application. GESTIM gives users real-time access to updated data from Registre des droits miniers, réels et immobiliers du Québec. It allows developers to renew exclusive exploration rights (claims) and pay vested rights in a secure online environment.

CONGRÈS QUÉBEC MINES BECOMES QUÉBEC MINES + ÉNERGIE

For 35 years, the annual Québec Mines conference has been the event par excellence of the Québec mining industry. It aims to promote Québec’s mineral potential with a view to sustainable development. The conference covers the entire mining development process, from exploration and mining to processing and reclamation. It is an event where major mining stakeholders from the research, scientific, economic, and industrial sectors, as well as representatives from local and Indigenous communities, can come together and discuss issues. The MERN will be taking the opportunity to share the latest results of its field work.

The 2018 conference will have an energy component, in addition to the usual offer of industry-related training, top-tier speakers, and expert exhibitors.

November 19 to 22
2018
Québec City Convention Center

31 [Online], [sigeom.mines.gouv.qc.ca/signet/classes/I1102_indexAccueil?l=a].
32 [Online], [gestim.mines.gouv.qc.ca/MRN_GestimP_Presentation/ODM02101_login.aspx].
RESPECTONS nos procédures!
Details of MINING ACTIVITIES

These tables show all of the mining activity in Québec, including producing mines and mining projects where developers are active on their sites.
## IRON
(including TITANIUM and VANADUIM)

<table>
<thead>
<tr>
<th>Mineral Appraisal and Development Projects</th>
<th>Main Substance</th>
<th>Byproducts</th>
<th>Proved and Probable Reserves&lt;sup&gt;(1)(2)&lt;/sup&gt;</th>
<th>Measured and Indicated Resources&lt;sup&gt;(1)(2)(3)&lt;/sup&gt;</th>
<th>Year(s) in Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>BlackRock Blackrock Metals</td>
<td>Iron ore</td>
<td>Vanadium</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><a href="http://www.blackrockmetals.com">www.blackrockmetals.com</a></td>
<td></td>
<td>Ilmenite</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lac Bloom Quebec Iron Ore</td>
<td>Iron ore</td>
<td></td>
<td>411.75 Mt 29.99% Fe</td>
<td>*911.60 Mt 29.71% Fe</td>
<td>2010-2014</td>
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<tr>
<td>mineraiferquebec.com</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Lac Doré Vanadium VanadiumCorp Resource</td>
<td>Vanadium</td>
<td>Iron</td>
<td></td>
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<td><a href="http://www.vanadiumcorp.com">www.vanadiumcorp.com</a></td>
<td></td>
<td>Ilmenite</td>
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</tr>
</tbody>
</table>

### Producing Mines

<table>
<thead>
<tr>
<th>Producing Mines</th>
<th>Main Substance</th>
<th>Byproducts</th>
<th>Proved and Probable Reserves&lt;sup&gt;(1)(2)&lt;/sup&gt;</th>
<th>Measured and Indicated Resources&lt;sup&gt;(1)(2)(3)&lt;/sup&gt;</th>
<th>Year(s) in Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSO</td>
<td>Iron ore</td>
<td></td>
<td></td>
<td></td>
<td>2017-2032 1954-1982</td>
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<tr>
<td>Tata Steel Minerals Canada <a href="http://www.tatasteelcanada.com">www.tatasteelcanada.com</a></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Fire Lake</td>
<td>Iron ore</td>
<td></td>
<td></td>
<td>Included in Mont-Wright reserves</td>
<td>2006-2045 1977-1981</td>
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<td>ArcelorMittal Mining Canada <a href="http://www.transformerlavenir.com">www.transformerlavenir.com</a></td>
<td></td>
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<tr>
<td>Mont-Wright</td>
<td>Iron ore</td>
<td></td>
<td>1,990.00 Mt 28.04% Fe</td>
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<td>1974-2045</td>
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<td>ArcelorMittal Mining Canada <a href="http://www.transformerlavenir.com">www.transformerlavenir.com</a></td>
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<td>Lac Tio</td>
<td>Ilmenite</td>
<td></td>
<td>128.00 Mt 43.75% TiO&lt;sub&gt;2&lt;/sub&gt;</td>
<td>84.60 Mt 44.54% TiO&lt;sub&gt;2&lt;/sub&gt;</td>
<td>1950-2051</td>
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<td>Rio Tinto Iron &amp; Titanium <a href="http://www.riotinto.com">www.riotinto.com</a></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

<sup>(1) </sup>The distinction between reserves and resources is based on the CIM’s *Definition Standards on Mineral Resources and Mineral Reserves*. Warning: Mineral resources do not have demonstrated economic viability and there is no certainty that the resources will be converted, in whole or in part, to reserves.

<sup>(2) </sup>Mt: million metric tons; %: percentage; g/t: gram/ton; c/t: carat/ton.

<sup>(3) </sup>Resources marked with an asterisk (*) include reserves.
Iron – Mining Activities in Québec

Source: SIGÉOM
Date: June 2018
## GOLD

<table>
<thead>
<tr>
<th>Mineral Appraisal and Development Projects</th>
<th>Main Substance</th>
<th>Byproducts</th>
<th>Proved and Probable Reserves(^{(1)(2)})</th>
<th>Measured and Indicated Resources(^{(1)(2)(3)})</th>
<th>Year(s) in Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Akasaba West Agnico Eagle Mines</td>
<td>Gold</td>
<td>Copper</td>
<td>5.19 Mt 0.87 g/t Au 0.49% Cu</td>
<td>2.18 Mt 0.70 g/t Au 0.41% Cu</td>
<td></td>
</tr>
<tr>
<td>Barry Metanor Resources</td>
<td>Gold</td>
<td></td>
<td></td>
<td>8.90 Mt 0.98 g/t Au</td>
<td>2008-2010</td>
</tr>
<tr>
<td>Clearwater Eastmain Resources</td>
<td>Gold</td>
<td></td>
<td></td>
<td>4.29 Mt 6.18 g/t Au</td>
<td></td>
</tr>
<tr>
<td>Croinor Gold Monarques Gold Corporation</td>
<td>Gold</td>
<td></td>
<td>0.60 Mt 6.67 g/t Au</td>
<td>0.80 Mt 9.12 g/t Au</td>
<td>2003-2005 1996-1997 1944-1948</td>
</tr>
<tr>
<td>Douay Maple Gold Mines</td>
<td>Gold</td>
<td></td>
<td>9.38 Mt 1.59 g/t Au</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fenelon Wallbridge Mining Company</td>
<td>Gold</td>
<td>Copper Platinum Nickel</td>
<td></td>
<td>*0.09 Mt 13.21 g/t Au</td>
<td>2004-2004 2001-2001</td>
</tr>
<tr>
<td>Horne 5 Falco Resources</td>
<td>Gold</td>
<td>Zinc Copper Silver</td>
<td>80.90 Mt 1.44 g/t Au 0.78% Zn 0.17% Cu 14.16 g/t Ag</td>
<td>91.20 Mt 1.55 g/t Au 0.88% Zn 0.18% Cu 14.89 g/t Ag</td>
<td></td>
</tr>
<tr>
<td>Lac Windfall Osisko Mining</td>
<td>Gold</td>
<td></td>
<td>2.38 Mt 7.85 g/t Au</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lamaque Eldorado Gold Corporation</td>
<td>Gold</td>
<td></td>
<td>3.81 Mt 7.29 g/t Au</td>
<td>4.70 Mt 8.45 g/t Au</td>
<td></td>
</tr>
<tr>
<td>O’Brien Radisson Mining Resources</td>
<td>Gold</td>
<td></td>
<td>1.13 Mt 6.45 g/t Au</td>
<td></td>
<td>1933-1981</td>
</tr>
<tr>
<td>Producing mines</td>
<td>Main Substance</td>
<td>Byproducts</td>
<td>Proved and Probable Reserves&lt;sup&gt;(1)(2)&lt;/sup&gt;</td>
<td>Measured and Indicated Resources&lt;sup&gt;(1)(2)(3)&lt;/sup&gt;</td>
<td>Year(s) in Operation</td>
</tr>
<tr>
<td>-----------------</td>
<td>----------------</td>
<td>------------</td>
<td>-------------------------------------------</td>
<td>------------------------------------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Beaufor Monarques Gold Corporation <a href="http://www.monarquesgold.com">www.monarquesgold.com</a></td>
<td>Gold</td>
<td></td>
<td>0.14 Mt 6.83 g/t Au</td>
<td>0.35 Mt 7.67 g/t Au</td>
<td>2002-2022 1996-2001 1939-1942</td>
</tr>
<tr>
<td>Canadian Malartic Canadian Malartic Partnership <a href="http://www.canadianmalartic.com">www.canadianmalartic.com</a></td>
<td>Gold</td>
<td>Silver</td>
<td>181.00 Mt 1.09 g/t Au</td>
<td>26.03 Mt 1.54 g/t Au</td>
<td>2011-2028 1933-1965 1927-1929</td>
</tr>
<tr>
<td>Éléonore Les Mines Opinaca <a href="http://www.goldcorp.com">www.goldcorp.com</a></td>
<td>Gold</td>
<td></td>
<td>19.61 Mt 6.02 g/t Au</td>
<td>7.15 Mt 5.81 g/t Au</td>
<td>2015-2025</td>
</tr>
<tr>
<td>Goldex Agnico Eagle Mines <a href="http://www.agnicoeagle.com">www.agnicoeagle.com</a></td>
<td>Gold</td>
<td></td>
<td>18.19 Mt 1.57 g/t Au</td>
<td>30.63 Mt 1.81 g/t Au</td>
<td>2013-2025 2008-2011</td>
</tr>
<tr>
<td>Lac Bachelor Metanor Resources <a href="http://www.metanor.ca">www.metanor.ca</a></td>
<td>Gold</td>
<td></td>
<td>0.84 Mt 7.38 g/t Au</td>
<td>0.84 Mt 7.79 g/t Au</td>
<td>2013-2022 1982-1989</td>
</tr>
<tr>
<td>Lapela Agnico Eagle Mines <a href="http://www.agnicoeagle.com">www.agnicoeagle.com</a></td>
<td>Gold</td>
<td></td>
<td>0.13 Mt 3.75 g/t Au</td>
<td>0.74 Mt 3.97 g/t Au</td>
<td>2009-2018</td>
</tr>
<tr>
<td>LaRonde Agnico Eagle Mines <a href="http://www.agnicoeagle.com">www.agnicoeagle.com</a></td>
<td>Gold</td>
<td>Zinc Copper Silver</td>
<td>15.28 Mt 5.39 g/t Au 0.88% Zn 0.23% Cu 19.09 g/t Ag</td>
<td>7.79 Mt 5.38 g/t Au 0.76% Zn 0.27% Cu 20.20 g/t Ag</td>
<td>1988-2026</td>
</tr>
<tr>
<td>Westwood IAMGOLD Corporation <a href="http://www.iamgold.com">www.iamgold.com</a></td>
<td>Gold</td>
<td></td>
<td>4.77 Mt 7.66 g/t Au</td>
<td>*3.60 Mt 12.18 g/t Au</td>
<td>2013-2035</td>
</tr>
</tbody>
</table>

<sup>(1)</sup> The distinction between reserves and resources is based on the CIM’s Definition Standards on Mineral Resources and Mineral Reserves. Warning: Mineral resources do not have demonstrated economic viability and there is no certainty that the resources will be converted, in whole or in part, to reserves.

<sup>(2)</sup> Mt: million metric tons; %: percentage; g/t: gram/ton; c/t: carat/ton.

<sup>(3)</sup> Resources marked with an asterisk (*) include reserves.
Gold – Mining Activities in Québec

Quebec-Newfoundland-and-Labrador border (this border is not final)

Mining activities

- Mining project - Development - Gold
  1. Lamaque (Eldorado Gold Corporation)
- Mining projects - Deposit Appraisal - Gold
  2. Akasaba Ouest (Agnico Eagle Mines)
- Mining projects - Deposit Appraisal - Gold as by-product
  3. Barry (Metanor Resources)
  4. Clearwater (Eastmain Resources)
  5. Croinor Gold (Monarques Gold Corporation)
  6. Doyu (Maple Gold Mines)
  7. Fenelon (Wallbridge Mining Company)
  8. Granada (Granada Gold Corporation)
  9. Home 5 (Falcon Resources)
  10. Lac Windfall (Osisko Mining)
  11. O’Brien (Radisson Mining Resources)
- Mining project - Deposit Appraisal - Gold as by-product
  12. Lac Scott (Yorbeau Resources)
- Producing mines - Gold
  13. Beaufor (Monarques Gold Corporation)
  14. Canadian Malartic (Canadian Malartic GP)
  15. Casa Berardi (Golden Pond) (Hedla Quebec)
  16. Elder (Abcourt Mines)
  17. Éléonorë (Les Mines Opinaca)
  18. Goldex (Agnico Eagle Mines)
  19. Lac Bachelor (Metanor Resources)
  20. Lapa (Agnico Eagle Mines)
  21. Lafortune (Agnico Eagle Mines)
  22. Vezza (Nottaway Resources)
  23. Westwood (IAMGOLD Corporation)
- Producing mines - Gold as by-product
  24. Bracemac-McLeod (Glencore Canada Corporation)
  25. Langlois (Grevet) (Nyrstar Langlois)
  26. Nunavik Nickel (Canadian Royalties)

Deposits (historical resources)*

- Producing mines - Deposit Appraisal - Gold
- Producing mines - Deposit Appraisal - Gold as by-product
- Deposits (historical resources)*

Source: SIGÉOM
Date: June 2018
# NICKEL
(including elements from the PLATINUM and COBALT groups)

<table>
<thead>
<tr>
<th>Mining Development Project</th>
<th>Main Substance</th>
<th>Byproducts</th>
<th>Proved and Probable Reserves(^{(1)(2)})</th>
<th>Measured and Indicated Resources(^{(1)(2)(3)})</th>
<th>Year(s) in Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dumont Nickel</td>
<td>Nickel</td>
<td>Cobalt</td>
<td>1,178.60 Mt 0.27% Ni 107.22 g/t Co 0.02 g/t Pd 0.01 g/t Pt</td>
<td>1,665.60 Mt 0.26% Ni 107.34 g/t Co 0.02 g/t Pd 0.01 g/t Pt</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Palladium</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Platinum</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Producing mines</th>
<th>Main Substance</th>
<th>Byproducts</th>
<th>Proved and Probable Reserves(^{(1)(2)})</th>
<th>Measured and Indicated Resources(^{(1)(2)(3)})</th>
<th>Year(s) in Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nunavik Nickel</td>
<td>Nickel</td>
<td>Cobalt</td>
<td></td>
<td></td>
<td>2014-2029</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Palladium</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Platinum</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raglan</td>
<td>Nickel</td>
<td>Copper</td>
<td>12.43 Mt 2.86% Ni 0.75% Cu 0.06% Co 1.98 g/t Pd 0.84 g/t Pt</td>
<td>*20.41 Mt 3.35% Ni 0.94% Cu 0.07% Co 2.35 g/t Pd 0.95 g/t Pt</td>
<td>1997-2040</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cobalt</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Palladium</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Platinum</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(1) The distinction between reserves and resources is based on the CIM's Definition Standards on Mineral Resources and Mineral Reserves. Warning: Mineral resources do not have demonstrated economic viability and there is no certainty that the resources will be converted, in whole or in part, to reserves.

(2) Mt: million metric tons; %: percentage; g/t: gram/ton; c/t: carat/ton.

(3) Resources marked with an asterisk (*) include reserves.
Nickel – Mining Activities in Québec

![Map of mining activities in Québec]

- **Mining project - Deposit Appraisal - Nickel**
  1. Dumont Nickel (RNC Minerals)
  2. Fenelon (Wallbridge Mining Company)
  3. Nunavik Nickel (Canadian Royalties)
  4. Raglan (Glencore Canada Corporation)

- **Producing mines - Ni (Cu, Pt, Pd, Co)**
  1. Dumont Nickel (RNC Minerals)
  2. Fenelon (Wallbridge Mining Company)

- **Deposits (historical resources)**

Area covered by the Plan Nord
Quebec-Newfoundland-and-Labrador border
(this border is not final)

Source: SIGÉOM
Date: June 2018
## ZINC

<table>
<thead>
<tr>
<th>Mining Development Project</th>
<th>Main Substance</th>
<th>Byproducts</th>
<th>Proved and Probable Reserves(^{(1)(2)})</th>
<th>Measured and Indicated Resources(^{(1)(2)(3)})</th>
<th>Year(s) in Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lac Scott</td>
<td>Zinc</td>
<td>Copper, Silver, Gold</td>
<td>3.56 Mt 0.95% Cu 4.17% Zn 37.20 g/t Ag 0.22 g/t Au</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Producing mines</th>
<th>Main Substance</th>
<th>Byproducts</th>
<th>Proved and Probable Reserves(^{(1)(2)})</th>
<th>Measured and Indicated Resources(^{(1)(2)(3)})</th>
<th>Year(s) in Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bracemac-McLeod</td>
<td>Zinc</td>
<td>Copper, Silver, Gold</td>
<td>3.47 Mt 6.70% Zn 1.04% Cu 27.30 g/t Ag 0.64 g/t Au</td>
<td>*4.90 Mt 5.96% Zn 1.05% Cu 26.08 g/t Ag 0.99 g/t Au</td>
<td>2013-2022</td>
</tr>
<tr>
<td>Glencore Canada Corporation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><a href="http://www.glencore.com">www.glencore.com</a></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Langlois (Grevet)</td>
<td>Zinc</td>
<td>Copper, Lead, Silver, Gold</td>
<td>1.90 Mt 8.55% Zn 0.65% Cu 0.20% Pb 40.58 g/t Ag 0.05 g/t Au</td>
<td>*4.63 Mt 9.29% Zn 0.60% Cu 0.20% Pb 41.99 g/t Ag 0.08 g/t Au</td>
<td>2012-2023</td>
</tr>
<tr>
<td>Nyrstar Langlois</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><a href="http://www.nyrstar.com">www.nyrstar.com</a></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^{(1)}\) The distinction between reserves and resources is based on the CIM's Definition Standards on Mineral Resources and Mineral Reserves. Warning: Mineral resources do not have demonstrated economic viability and there is no certainty that the resources will be converted, in whole or in part, to reserves.

\(^{(2)}\) Mt: million metric tons; %: percentage; g/t: gram/ton; c/t: carat/ton.

\(^{(3)}\) Resources marked with an asterisk (*) include reserves.
Zinc – Mining Activities in Québec

**Mining activities**

- **Producing mines - Zn (Au, Ag, Cu)**
  - 1- Lac Scott (Yorbeau Resources)
  
- **Producing mining project - Deposit Appraisal - Zinc as by-product**
  - 2- Horne 5 (Falco Resources)
  
- **Producing mining project - Deposit Appraisal - Zinc**
  - 3- Bracemac-McLeod (Glencore Canada Corporation)
  
- **Deposits (historical resources)**
  - 4- Langlois (Grevet) (Nyrstar Langlois)
  
- **Deposits (historical resources)**
  - 5- LaRonde (Agnico Eagle Mines)

Source: SIGÉOM
Date: June 2018
COPPER

Copper isn’t currently the main substance of any mining project or producing mine. However, copper is a byproduct in several mining projects and producing mines, as shown in the “Byproducts” column in gold, nickel and zinc tables.

**NIIOBIUM**

<table>
<thead>
<tr>
<th>Producing mine</th>
<th>Main Substance</th>
<th>Byproducts</th>
<th>Proved and Probable Reserves(^{(1)})</th>
<th>Measured and Indicated Resources(^{(1)})</th>
<th>Year(s) in Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Niobec</td>
<td>Niobium</td>
<td></td>
<td>416.42 Mt 0.41% Nb(_2)O(_5)</td>
<td>288.68 Mt 0.43% Nb(_2)O(_5)</td>
<td>1976-2045</td>
</tr>
</tbody>
</table>

\(^{(1)}\) The distinction between reserves and resources is based on the CIM’s Definition Standards on Mineral Resources and Mineral Reserves. Warning: Mineral resources do not have demonstrated economic viability and there is no certainty that the resources will be converted, in whole or in part, to reserves.

\(^{(2)}\) Mt: million metric tons; %: percentage; g/t: gram/ton; c/t: carat/ton.

\(^{(3)}\) Resources marked with an asterisk (*) include reserves.
Niobium – Mining Activities in Québec

Source: SIGÉOM
Date: June 2018
### RARE EARTH ELEMENTS

<table>
<thead>
<tr>
<th>Mining Development Project</th>
<th>Main Substance</th>
<th>Byproducts</th>
<th>Proved and Probable Reserves(^{(1)(2)})</th>
<th>Measured and Indicated Resources(^{(1)(2)(4)})</th>
<th>Year(s) in Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ashram (Eldor) Commercial Resources Corporation <a href="http://www.commerceresources.com">www.commerceresources.com</a></td>
<td>Rare earth elements (Light REE; Heavy REE; Yttrium)</td>
<td></td>
<td></td>
<td>29.26 Mt 1.89% TREO (1.81% LREO; 0.05% HREO; 0.04% (Y_2O_3))</td>
<td></td>
</tr>
</tbody>
</table>

\(^{(1)}\) The distinction between reserves and resources is based on the CIM’s Definition Standards on Mineral Resources and Mineral Reserves. Warning: Mineral resources do not have demonstrated economic viability and there is no certainty that the resources will be converted, in whole or in part, to reserves.

\(^{(2)}\) Mt: million metric tons; %: percentage; g/t: gram/ton; c/t: carat/ton.

\(^{(3)}\) Resources marked with an asterisk (*) include reserves.

\(^{(4)}\) TREO: sum of rare earth oxides plus yttrium oxide; LREO: sum of light rare earth oxides (La-Sm); HREO: sum of heavy rare earth oxides (Eu-Lu).
Rare Earth Elements – Mining Activities in Québec

Mining activities

• Mining project - Deposit appraisal
  Rare earth elements
  Ashram (Eldor)
  (Commerce Resources Corporation)

• Deposits - REE*

Source: SIGÉOM
Date: June 2018
## LITHIUM
(including TANTALUM)

<table>
<thead>
<tr>
<th>Mineral Appraisal and Development Projects</th>
<th>Main Substance</th>
<th>Byproducts</th>
<th>Proved and Probable Reserves(^{(1)(2)})</th>
<th>Measured and Indicated Resources(^{(1)(2)(3)})</th>
<th>Year(s) in Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authier Sayona Québec</td>
<td>Lithium</td>
<td></td>
<td>11.66 Mt 1.03% Li(_2)O</td>
<td>*17.64 Mt 1.03% Li(_2)O</td>
<td></td>
</tr>
<tr>
<td>Rose Critical Elements Corporation</td>
<td>Lithium</td>
<td>Tantalum</td>
<td>26.80 Mt 0.85% Li(_2)O 133.00 g/t Ta(_2)O(_5)</td>
<td>*31.90 Mt 0.93% Li(_2)O 148.00 g/t Ta(_2)O(_5)</td>
<td></td>
</tr>
<tr>
<td>Whabouchi Nemaska Lithium</td>
<td>Lithium</td>
<td></td>
<td>27.30 Mt 1.46% Li(_2)O</td>
<td>*27.99 Mt 1.57% Li(_2)O</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Producing mine</th>
<th>Main Substance</th>
<th>Byproducts</th>
<th>Proved and Probable Reserves(^{(1)(2)})</th>
<th>Measured and Indicated Resources(^{(1)(2)(3)})</th>
<th>Year(s) in Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>North American Lithium North American Lithium</td>
<td>Lithium</td>
<td></td>
<td>20.50 Mt 0.94% Li(_2)O</td>
<td>39.30 Mt 1.04% Li(_2)O</td>
<td>1956-1965</td>
</tr>
</tbody>
</table>

(1) The distinction between reserves and resources is based on the CIM’s Definition Standards on Mineral Resources and Mineral Reserves. Warning: Mineral resources do not have demonstrated economic viability and there is no certainty that the resources will be converted, in whole or in part, to reserves.

(2) Mt: million metric tons; %: percentage; g/t: gram/ton; c/t: carat/ton.

(3) Resources marked with an asterisk (*) include reserves.
Lithium – Mining Activities in Québec

1- Whabouchi (Nemaska Lithium)
2- Authier (Sayona Québec)
3- Rose (Critical Elements Corporation)
4- North American Lithium (North American Lithium)

Source: SIGÉOM
Date: June 2018
# GRAPHITE

<table>
<thead>
<tr>
<th>Mining Development Projects</th>
<th>Main Substance</th>
<th>Byproducts</th>
<th>Proved and Probable Reserves(^{(1)(2)})</th>
<th>Measured and Indicated Resources(^{(1)(2)(3)})</th>
<th>Year(s) in Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lac Guéret Mason Graphite</td>
<td>Graphite</td>
<td></td>
<td>4.74 Mt 27.78%</td>
<td>*65.69 Mt 17.19%</td>
<td></td>
</tr>
<tr>
<td>Focus Graphite</td>
<td>Graphite</td>
<td></td>
<td>7.86 Mt 15.13%</td>
<td>*13.56 Mt 14.95%</td>
<td></td>
</tr>
<tr>
<td>Matawinie Nouveau Monde Graphite</td>
<td>Graphite</td>
<td></td>
<td>33.00 Mt 4.39%</td>
<td>*32.90 Mt 4.50%</td>
<td></td>
</tr>
<tr>
<td>Miller Canada Carbon</td>
<td>Graphite</td>
<td></td>
<td>2.65 Mt 0.80%</td>
<td></td>
<td>1845-1900</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Producing mine</th>
<th>Main Substance</th>
<th>Byproducts</th>
<th>Proved and Probable Reserves(^{(1)(2)})</th>
<th>Measured and Indicated Resources(^{(1)(2)(3)})</th>
<th>Year(s) in Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lac des Îles Imerys Graphite &amp; Carbon Canada</td>
<td>Graphite</td>
<td></td>
<td></td>
<td></td>
<td>1989-2022</td>
</tr>
</tbody>
</table>

(1) The distinction between reserves and resources is based on the CIM’s Definition Standards on Mineral Resources and Mineral Reserves. Warning: Mineral resources do not have demonstrated economic viability and there is no certainty that the resources will be converted, in whole or in part, to reserves.

(2) Mt: million metric tons; %: percentage; g/t: gram/ton; c/t: carat/ton.

(3) Resources marked with an asterisk (*) include reserves.
Graphite – Mining Activities in Québec

Mining activities
- Mining projects - Deposit appraisal - Graphite
  1- Lac Guéret (Mason Graphite)
  2- Lac Knife (Focus Graphite)
  3- Matawinie (Nouveau Monde Graphite)
  4- Miller (Canada Carbon)

- Producing mine - Graphite
  5- Lac-des-Îles (Imerys Graphite & Carbon Canada)

- Deposits (historical resources)

Source: SIGÉOM
Date: June 2018
**APATITE**

<table>
<thead>
<tr>
<th>Mining Development Projects</th>
<th>Main Substance</th>
<th>Byproducts</th>
<th>Proved and Probable Reserves(1)(2)</th>
<th>Measured and Indicated Resources(1)(2)(3)</th>
<th>Year(s) in Operation</th>
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<tr>
<td>Arnaud</td>
<td>Apatite</td>
<td></td>
<td>342.60 Mt 4.30% P$_2$O$_5$</td>
<td>*545.49 Mt 4.00% P$_2$O$_5$</td>
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<tr>
<td>Lac à Paul</td>
<td>Apatite</td>
<td>Ilmenite</td>
<td>472.09 Mt 6.88% P$_2$O$_5$</td>
<td>*702.70 Mt 7.16% P O$_5$ 7.71% TiO$_2$</td>
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<tr>
<td>Arianne Phosphate</td>
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(1) The distinction between reserves and resources is based on the CIM’s Definition Standards on Mineral Resources and Mineral Reserves. Warning: Mineral resources do not have demonstrated economic viability and there is no certainty that the resources will be converted, in whole or in part, to reserves.

(2) Mt: million metric tons; %: percentage; g/t: gram/ton; c/t: carat/ton.

(3) Resources marked with an asterisk (*) include reserves.
Apatite – Mining Activities in Québec

Mining activities

- Mining projects - Deposit Appraisal - Apatite
  1. Arnaud (Mine Arnaud)
  2. Lac à Paul (Arianne Phosphate)
- Deposits - Apatite

Source: SIGÉOM
Date: June 2018
## DIAMOND

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<th>Producing mine</th>
<th>Main Substance</th>
<th>Byproducts</th>
<th>Proved and Probable Reserves(^{(1)(2)})</th>
<th>Measured and Indicated Resources(^{(1)(2)(3)})</th>
<th>Year(s) in Operation</th>
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<tr>
<td>Renard</td>
<td>Diamond</td>
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<td>30.20 Mt 0.66 c/t</td>
<td>6.10 Mt 0.46 c/t</td>
<td>2017-2031</td>
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(1) The distinction between reserves and resources is based on the CIM’s Definition Standards on Mineral Resources and Mineral Reserves. Warning: Mineral resources do not have demonstrated economic viability and there is no certainty that the resources will be converted, in whole or in part, to reserves.

(2) Mt: million metric tons; %: percentage; g/t: gram/ton; c/t: carat/ton.

(3) Resources marked with an asterisk (*) include reserves.
Diamond – Mining activities in Québec

Producing mine - Diamond
Renard (Stornoway Diamond Corporation)

Deposits and showings - Diamond

Area covered by the Plan Nord
Quebec-Newfoundland-and-Labrador border
(this border is not final)

Source: SIGÉOM
Date: June 2018
FREQUENTLY ASKED QUESTIONS about Québec's mining sector

What are the jurisdictions of the Québec and Canada governments with regard to the mining sector?

The jurisdictions of the federal and provincial governments are divided by domain. Management and oversight of operations to harvest or extract natural resources, including mineral resources, are the exclusive jurisdiction of Québec.

Nevertheless, the federal government has a say with regard to certain environmental impacts. Also, any business established in Québec must pay both provincial and federal taxes according to the laws of each.

What is the regulatory process for having a mining project approved, from mineral exploration through to startup and all the way to mine shutdown?

Under the **Mining Act**, developers must first obtain exclusive exploration rights (a claim) from MERN before looking for mineral substances on a specific parcel of land. If the land is private, the claim holder must obtain written authorization from the landowner before going out onto the land or conducting exploration work. Claim holders must also notify the municipality and the landowner of their claim no more than 60 days after it is registered. They must also inform the municipality and the landowner at least 30 days before work begins. Claim holders must comply with the provisions of the **Environment Quality Act** at all times and obtain the necessary authorizations and permits. Other legislation may also apply.

In the event of a discovery, the claim holder must obtain a **mining lease** under the provisions of the **Mining Act**. The lease application must be accompanied by a land survey of the area for development, a report certified by an engineer or geologist who meets the qualification requirements set out in the regulation, a project feasibility study, and an economic and market opportunity study for processing in Québec. Where applicable, a **public land use application** must also be filed for all uses, temporary and permanent activities, developments, and structures not covered by the mining lease.

Before a mining company applies for a mining lease, it must file a **rehabilitation and restoration plan** with the MERN. The plan must be made publicly available at least 30 days before the public consultation. A mining lease cannot be entered into until the mine rehabilitation and restoration plan has been approved in accordance with the **Mining Act** and an authorization certificate has been issued under the **Environment Quality Act**. The **Mining Act** states that when granting a lease, the government may, on reasonable grounds, require that the economic spinoffs within Québec of mining the mineral resources authorized under the lease be maximized, including with respect to primary processing.

A **financial guarantee** for the closure of the mine site is also required to cover the anticipated cost of carrying out the work provided for in the rehabilitation and restoration plan. The guarantee must be paid in three installments: the first payment (50%) must be made within 90 days of receiving the plan's approval, and each subsequent payment (25% each) must be made on the anniversary of the plan's approval. Developers must also provide MERN with a financial guarantee for certain types of exploration work.
Under the *Environmental Quality Act*, the following types of construction and mining projects are subject to an environmental assessment:

- Metal ore processing plants and projects to develop and operate metal ore mines with a processing or production capacity of 2,000 t or more per day;
- All rare earth element extraction projects, regardless of processing and production capacity.

Exceptionally, as per the *Environmental Quality Act*, other projects may be subject to an environmental assessment on the recommendation of the Ministère du Développement durable, de l’Environnement et de la Lutte contre les changements climatiques (MDDELCC).

Under the *Mining Act*, developers must organize and hold a public consultation before a mining lease for a metal ore mine with a production capacity of less than 2,000 tons per day, a lease for surface mineral substances such as peat, or a lease for an industrial activity or commercial export activity may be granted. After the mining lease is issued, the lessee must establish a monitoring committee to foster the involvement of the local community in the project as a whole.

Once operations have ceased, the mine operator may be required to obtain one or more authorization certificates from MDDELCC for the restoration work. The financial guarantee will be returned once all restoration obligations have been met to the satisfaction of MERN and MDDELCC.

Québec has published a document (in French only) listing the main permits, leases, and authorizations required for mine development in Québec.

Do foreign investors have the same rights as Canadian investors?

In Québec and in Canada as a whole, all investors—whether Canadian or foreign—are treated equally. However, there are rules regarding takeovers of Canadian firms by foreign interests.

Does a mining company need to hire workers from a particular region or union? Can it bring in its own workers?

The Government of Québec encourages companies to employ workers from neighboring communities. Québec has a skilled mining workforce. These workers mostly live in mining regions. However, businesses established in Québec may employ workers from anywhere in Canada. Bringing workers in from outside Canada to occupy positions that could be held by Canadians is generally not allowed, unless the company is having trouble filling those positions.

Does Québec have standards to ensure the safety of workers in the mining sector?

The safety of the mining sector is of great concern to Québec’s labor standards, equity, occupational health and safety board, CNESST (Commission des normes, de l’équité, de la santé et de la sécurité du travail), which oversees the application of the Regulation respecting occupational health and safety in mines.

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33 [Online], [mern.gouv.qc.ca/publications/mines/cadre-normatif-domaine-minier.pdf].
34 [Online], [bdp.parl.ca/content/lop/researchpublications/cei-22-e.htm].
36 [Online], [legisquebec.gouv.qc.ca/en/ShowDoc/cr/S-2.1,%20r.%202014].
In addition, there is an association (Association paritaire pour la santé et la sécurité du travail du secteur minier) dedicated to helping workers and employers in the mining sector eliminate dangers to worker health and safety.

Which mining associations are active in Québec?

There are three mining associations operating in Québec: the Québec Mineral Exploration Association (QMEA), the Québec Mining Association (QMA) and the Québec Peat Moss Producers Association (QPMPA).

What are the roles and responsibilities of the main ministries and agencies that deal with foreign companies looking to invest in mining projects in Québec?

- Ministère de l’Énergie et des Ressources naturelles: all matters related to exploration and mining, extractive metallurgy and mine closure (permits, mineral rights, authorizations, leases, public land use leases, etc.).
- Ministère du Développement durable, de l’Environnement et de la Lutte contre les changements climatiques: all matters relating to the environment and environmental impacts.
- Ministère des Finances, Ministère de l’Économie, de la Science et de l’Innovation, Investissement Québec and its subsidiary, Ressources Québec: financial assistance, equity investments, and general business support.
- Société du Plan Nord: integrates and coordinates development of the Plan Nord territory, with a view to sustainable development.
- Institut national des mines: provides consultation and innovation for training in the mineral industry.

Other departments and agencies may also be involved depending on their areas of jurisdiction.

What laws and regulations generally apply to mining exploration and development?

Québec laws and regulations (non-exhaustive list):

- Mining Act (M-13.1) and Regulation respecting mineral substances other than petroleum, natural gas and brine (M-13.1, r.2)
- Act respecting transparency measures in the mine, oil and gas industries (M-11.5) and Regulation respecting the application of the Act respecting transparency measures in the mining, oil and gas industries (Chapter M-11.5, a. 6, 9, and 18)
- Mining Tax Act (I-0.4)
- Sustainable Forest Development Act (A-18.1) and Regulation respecting standards of forest management for forests in the domain of the State (A-18.1, r.7)

37 [Online], [aspmines.qc.ca].
38 [Online], [aemq.org].
39 [Online], [amg-inc.com].
40 [Online], [peatmoss.com].
41 [Online], [mddelcc.gouv.qc.ca].
42 [Online], [finances.gouv.qc.ca].
43 [Online], [economie.gouv.qc.ca].
44 [Online], [plannord.gouv.qc.ca].
45 [Online], [inmq.gouv.qc.ca].
> Act respecting the lands in the domain of the State (T-8.1)
> Environment Quality Act (Q-2) and various regulations
> Act respecting the conservation of wetlands
> Act respecting occupational health and safety (S-2.1) and Regulation respecting occupational health and safety in mines (S-2.1, r.14)
> Natural Heritage Conservation Act (C-61.01)
> Act respecting the conservation and development of wildlife (C-61.1)
> Parks Act (P-9)

These laws and regulations can be consulted on the LégisQuébec46 website.

Canadian laws and regulations (non-exhaustive list):
> Canadian Environmental Assessment Act (S.C.2012, c.19, s.52)
> Fisheries Act (R.S.C.[1985], c. F-14) and Metal Mining and Diamond Mining Effluent Regulations (SOR/2002-222)
> Nuclear Safety and Control Act (S.C.1997, c.9) and various regulations

These laws and regulations can be found on the Justice Laws Website47.

N.B. The information in this section is for information purposes only and has no legal bearing.

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46 [Online], [legisquebec.gouv.qc.ca].
47 [Online], [laws-lois.justice.gc.ca].
CONTACT US

For additional information or to contact us, contact the international offices of Investissement Québec or the Ministère des Relations internationales et de la Francophonie.

QUÉBEC OFFICES ABROAD

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Ministère des Relations internationales et de la Francophonie

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49 [Online], [www.mrif.gouv.qc.ca/en/ministere/representation-etranger]
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Other Departments – Offices Located in Québec

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<th>Website</th>
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