



## **Imperial Mining Provides Update on Development Plans for the Crater Lake Scandium Project**

**MONTREAL, QUEBEC – July 30, 2019 – Imperial Mining Group Ltd. ("Imperial") (TSX VENTURE: IPG)** is to provide an update on progress made to date and future plans for the development of the 100% owned Crater Lake scandium project, northeastern Quebec.

Imperial Mining management and staff have been working diligently throughout 2019 to prove the significant scandium resource potential of the Crater Lake project. A drive to enhance investor and consumer awareness of the critical importance of scandium as a new technology metal in increasing demand for applications in the automotive, aerospace, transportation and defense sectors related to strengthening aluminum alloys has also been made. Recently reported drilling results (*see* Press Release: June 18, 2019) confirm the potential at Crater Lake for a large, near-surface resource of economic grade scandium mineralization and rare earths. Initial process test work indicates that it is amenable to a low-cost pre-concentration method at the site. A clear path towards the initial development of the Crater Lake scandium resource has now been defined and is summarized below.

### **METALLURGY AND MARKET DEVELOPMENT**

Previous mineralogical studies completed by SGS Lakefield on a composite sample collected from historical drill core on the property (*see* Press Release: June 27, 2018) indicates that the scandium is primarily hosted by two common iron silicate minerals (pyroxene and amphibole) that are ferro-magnetic. The Phase I Mineral Processing scoping program completed on a composite core sample showed that a scandium mineral concentrate can be produced by using simple magnetic separation. This provides a low-cost method for pre-concentrating the scandium mineralization on the site for shipping to an off-site processing facility, located in a community with the necessary supporting infrastructure and aluminum production capacity. The goal of the work is to obtain a minimum 50% waste material rejection rate while maintaining an 85% scandium recovery. Subsequent processing steps will involve acid digestion of the concentrate, high-temperature kiln baking and water wash to produce a high-quality scandium leach solution. Scandium oxide would then be recovered using conventional solvent extraction techniques. Two 100 kg bulk samples were collected from the split core from the 2019 winter drilling that will be used for further metallurgical test work with a Canadian-based metallurgical consultant.

Imperial management has been very active in identifying market opportunities for its scandium products with aluminum alloys manufacturers as well as domestic and overseas consumers in the automotive, aerospace, defense and fuel cell industries. Initial discussions with major industry participants have provided Imperial with good insight into future scandium market demand growth and pricing for scandium-

modified aluminum alloys across various applications. The trend toward “light-weighting” in electric vehicles in order to extend EV battery range is expected to be one of the largest new demand drivers for scandium aluminum alloys. Imperial is also in advanced discussions with domestic and international R&D institutions to commence material and application research to expand the range of potential scandium applications. It appears that future scandium demand in Sc-Al alloys is only limited by the availability of reliable long term, low-cost supply sources. Like the rare earth elements, there is no well-established scandium supply chain outside China/Russia and Crater Lake represents the only significant new supply source in North America.

## **ANTICIPATED MILESTONES TOWARDS INITIAL PRODUCTION OF SCANDIUM**

From the successful work completed on the project to date, management has developed a series of tentative development milestone targets which are required to position the project for initial production, at least at a pilot scale, that will allow Imperial to become North America’s first primary scandium producer. It should be noted that the development steps to a production decision can be accelerated should the appropriate funding envelope be available to Imperial for moving the project forward.

### **Phase I: Resource Definition, Preliminary Metallurgy, Market Intelligence (Phase completion Contingent on the receipt of funding)**

Deliverable: Preliminary Deposit Resource Report and preliminary metallurgical studies (basis of Preliminary Economic Assessment Study), metals market study to determine potential depth of the market.

Description: Surface target evaluation and resource definition drilling of the most attractive mineralized body, exploration to expand known deposit and review of project with stakeholders. Collection of a large bulk sample for material processing.

### **Phase II: Preliminary Economic Assessment (Contingent on positive Phase I results)**

Deliverable: Preliminary Economic Assessment Report (refined financial model of project).

Description: Definition drilling of known scandium resources on the property, process flowsheet confirmation, initiation of Environmental Assessment Study and discussion of project with Aboriginal groups towards an Impacts & Benefits Agreement (IBA).

### **Phase III: Definitive Feasibility Study, Initiation of Pilot Plant Studies, Environmental Assessment (Contingent on Positive Phase II results)**

Deliverables: Initiation of Pilot Plant work using design parameters developed by the preliminary metallurgical work, Technical Report, Definitive Feasibility Study, Formal Environmental Impact Statement and Archeological Review.

Description: Pilot plant construction, filing of project description and Environmental Impact Statement with Federal (Canadian), Provincial (Quebec) and Aboriginal Environmental authorities. The Feasibility Study provides detailed financial model (+/- 10%) including project capital requirements and operating expenses and is the basis for major project financing. Once the general engineering costs of project are defined, applications for necessary project approvals are initiated.

### **Phase IV: Completion of Pilot Plant Processing, Product Marketing and Off-Take, Commencement of Mine Financing Activities (Contingent on positive Phase III results)**

**Deliverables:** Completion of pilot plant processing and detailed plant engineering report. Concluding off-take agreements.

**Description:** Final plant construction and operating costs will be developed from pilot plant operation; samples of final product will be available for end user evaluation and developing product off-take arrangements. Commencement of project financing activities.

**ULTIMATE OBJECTIVE:** To develop an operation that will initially be scaled to meet the most immediate market demands for scandium. The operation will be engineered to be sufficiently flexible to scale-up production capacity as market demand grows.

The technical content in this press release reviewed and certified by Pierre Guay, P. Geo., Imperial's Vice-President, Exploration, a Geologist and Qualified Person as defined by NI43-101.

#### **ABOUT IMPERIAL MINING GROUP LTD.**

*Imperial is a new Canadian mineral exploration and development company focused on advancing its copper-zinc, gold and technology metals properties in Québec. Imperial is publicly listed on the TSX Venture Exchange as "IPG" and is led by an experienced team of mineral exploration and development professionals with a strong track record of mineral deposit discovery in numerous metal commodities.*

#### **For further information please contact:**

Peter J. Cashin  
President and Chief Executive Officer  
Tel: +1 (514) 360-0571  
Email: [info@imperialmgrp.com](mailto:info@imperialmgrp.com)  
URL: [www.imperialmgrp.com](http://www.imperialmgrp.com)

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