

## **POSITIVE TEST RESULTS IN LITHIUM ION CELLS FOR MASON GRAPHITE'S ANODE MATERIAL**

*Laval, Quebec, Canada, December 10, 2019* – The battery test results obtained on a pilot batch of spherical graphite for Li-ion batteries from Mason Graphite Inc. (Mason Graphite or the Company) as part of a value-added product (VAP) development project are positive.

The spherical graphite, purified and coated at pilot scale level, was tested in button half-cells to confirm its electrochemical performances as an anode material for Li-ion batteries. The micronization—spheronization—classification portions of the transformation process were carried out in the Company's pilot facilities located in the Quebec City vicinity. This first test is also a result of close collaboration with major partners: COREM carried out part of the manufacturing process with pilot-scale equipment (for purification and coating), and the National Research Council of Canada (NRC) carried out the development of the transformation process (including the coating process) used at COREM and performed the electrochemical tests.

*"The Mason Graphite team is fortunate to be partnered with and supported by Canada's largest federal research organization (NRC) and Canada's largest organization dedicated entirely to research and development in ore processing (COREM). With the support of these key partners, we are now able to show that the graphite extracted from the Lac Guéret deposit can be effectively transformed into spherical graphite and offer the performance needs sought by Li-ion battery producers,"* says Benoît Gascon, President and CEO of Mason Graphite.

### **Positive Results**

These results confirm the hypothesis that the fine graphite flakes extracted from the Lac Guéret deposit are a suitable material to manufacture spherical graphite for the lithium-ion anode market, particularly for electric vehicles.

Mason Graphite proposes a product with physicochemical and electrochemical properties similar to those of commercial products currently available on the market. These promising results will be soon validated by tests in complete batteries (graphite and lithiated metal oxide).

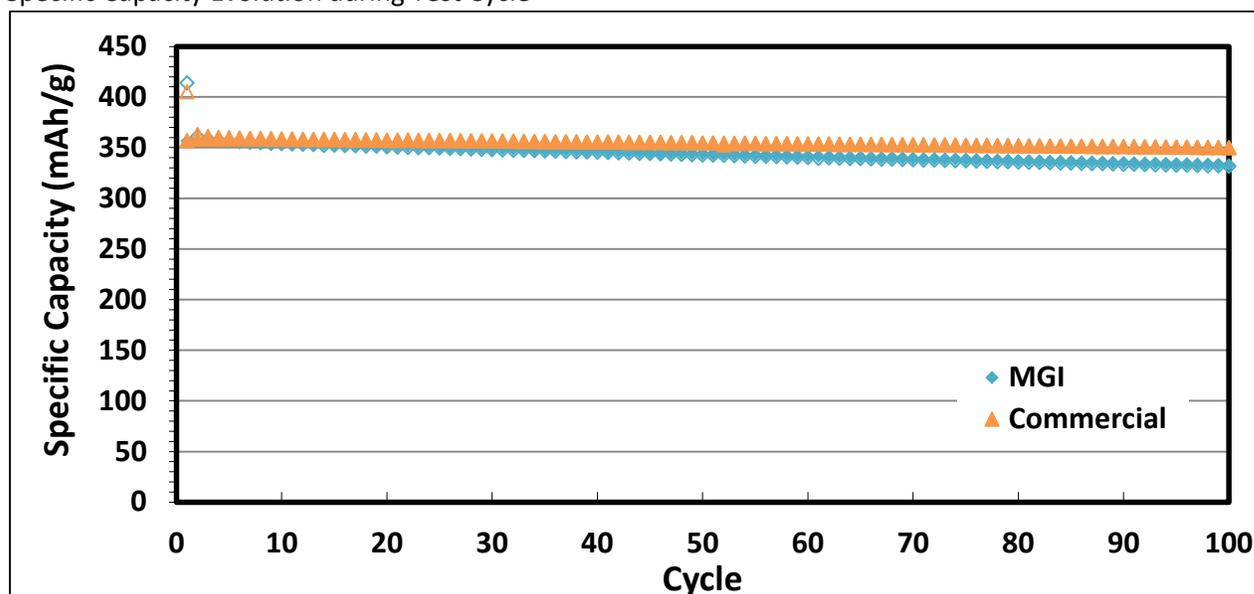
### **Comparison Criteria**

The purity, bulk density, grain size, and specific surface area of graphite are some of the physical properties evaluated to determine the quality of the spherical graphite. The specific capacity and its evolution (retention) are parameters that indicate the product's performance in Li-ion application. The table and graph below compare the results of the Mason Graphite product with the properties and performance of other commercial products available on the market.



	Physicochemical properties			Electrochemical Performance	
	Purity (%C)	BET Surface (m <sup>2</sup> /g)	Tapped Density (g/cm <sup>3</sup> )	Specific Capacity (mAh/g)	Capacity Retention (%)
<b>Mason Graphite Product</b>	> 99.95	2.8	1.21	356	94
<b>Commercial Product</b>	99,93-99,99	0,8-3,0	1,01-1,28	> 350	> 90

Specific Capacity Evolution during Test Cycle



*Specific capacity of Mason Graphite product compared to the best grade of natural commercial graphite. (Measuring conditions: coin cell CR2325, lithium metal counter electrode, PVDF binder, electrolyte 1M LiPF<sub>6</sub> EC: DEC with additive, charge / discharge at C/10 between 1.5 V and 5 mV vs. Li/Li<sup>+</sup>).*

It should be noted that the development of value-added products represents Phase 2 of the global Mason Graphite project, with the Lac Guéret mine and the Baie-Comeau concentrator site representing Phase 1. The Company is making progress and investing in both phases concurrently as demand in the markets targeted by the second phase is expected to grow significantly in the coming years, particularly with regard to electric vehicles. Furthermore, a technical and economic study on the industrialization of Phase 2 is currently underway and its results should be disclosed in 2020. The new VAP plant would be built in Baie-Comeau, on the same land as the concentrator (Phase 1), land already owned by the Company.



With respect to Phase 1, in recent months Mason Graphite received, in Baie-Comeau, the essential equipment that could have taken up to one year for delivery, obtained new permits, and revised the layout of the mine infrastructure to improve water management and environmental protection. The Company is ready to begin construction as soon as financing is completed, which is on track following the \$45M raised in early 2018 and the \$28M raised through the sale of NanoXplore Inc. shares. To date, Mason Graphite has invested approximately \$40M in detailed engineering (75% completion), equipment purchases, construction contract negotiations, purchase of land in Baie-Comeau, and preparatory work.

### **Consent of the Qualified Person**

Jean L'Heureux, Eng., M. Eng., Executive Vice President, Process Development for Mason Graphite, and a Qualified Person, as defined by NI 43-101 for Mason Graphite, was responsible for the audit of data presented in this press release and read and approved it.

### **About Mason Graphite and the Lac Guéret Project**

Mason Graphite is a Canadian mining and processing company focused on the development of its 100% owned Lac Guéret natural graphite deposit located in northeastern Québec. The Company is led by a highly experienced team that has over six decades of experience in graphite production, sales, and research and development. For more information, visit [www.masongraphite.com](http://www.masongraphite.com).

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### **Source:**

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