GéoMégA Subsidiary Innord Succesfully Separates Nd and Dy from Magnet Residues

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MONTREAL, Sept. 17, 2018 - Geomega Resources Inc. (“GéoMégA” or the “Corporation”) (TSX.V: GMA) is pleased to announce that Innord Inc. (“Innord”), a private subsidiary controlled by GéoMégA, has successfully separated Neodymium oxide (Nd_2O_3) and Dysprosium oxide (Dy_2O_3) using the ISR technology from magnetic residues after removing other impurities such as iron, cobalt, nickel, boron and other minor metals.

+99.5% Neodymium Oxide Powder (left), +99.5% Dysprosium Oxide Powder (right)

ISR technology and the circular economy of rare earth magnets

Recoveries of Dysprosium per single run range between 60% and 85% and keep improving as the technology advances. Dysprosium that is not recovered in the first separation run, is not lost but is recirculated back to the process.

The key parameter to look at when comparing ISR versus solvent extraction (SX) is the separation factor (SF) between two separating elements which quantifies readiness and efficiency of a single stage of separation. In the case of Nd and Dy, the SF in SX is reported between 22 and 42 while ISR technology shows a consistent SF of around 30 (see Table 1). The higher the SF, the smaller the number of repetitions is required to attain a certain purity which makes the technology more cost effective. Additional work continues to further increase the SF and current indications are positive.

“Since April 2018, the main objective in the ISR technology development was to purify Dysprosium from Neodymium and other impurities in a cost-efficient manner. To achieve that, we focused on increasing the separation factor. Any developing separation technology can purify Dy and Nd but doing it in just a few steps in high concentrations and in an environmentally sustainable and scalable way, is now a key selling point of the ISR technology. Now that we are comfortable with purifying the key rare earths out of magnetic residues up to magnet purity oxides, we believe ISR is the missing link to bringing circular economy to the permanent magnet industry outside of China. We will be working with the various sections of the supply chain to make this circular economy a reality.” commented Kiril Mugerman, President and CEO of GéoMégA and Innord.

	2016	2017	2018[i]	2019[ii]
Separation Technique	MF Rotofor	ISR	ISR	ISR
Capacity of a Single Separation Reactor, (ml)	50	2,500	20,000	200,000
REE Concentration in Separation Reactor, (g/l) [iii]	0.0025 - 30	~130	~100	~100
Approx. Cost of Prototype, (US$)	150,000	15,000	20,000	< 100,000
Type of Sample Separated	Synthetic Mixture	Industrial Residue	Industrial Residue	Industrial Residue
Major Separated Elements	La, Eu, Yb	Nd, Dy	Nd, Dy	Nd, Dy
Purity of Separated REO, (%)	95 to 98	85 to 95	+99[vi]	+99.9
Single Run Recovery, (%)	40 to 90	60 to 90	60 to 95	80 to 95
Residence Time in Separation Reactor, (hr) [iv]	4-6	~12	~8	4-6
Separation Factor (Nd/Dy) [v]	-	~10	~30	?

[i] Plan for this year
[ii] Objectives and estimates
[iii] Volume/average concentration
[iv] Single run
[v] SX HCl/HDEHP SF = 42, SX HCl/EHEHPA SF = 22 (Gupta)
[vi] Work on Dy final purity continues

Table 1: Summary of progression over the years and key objectives for 2019.

All the sample analyses have been performed internally by Innord Inc. using ICP-OES.

All the experiments and the technology development have been conducted and supervised by Dr. Pouya Hajiani (PhD Chemical Engineering), CTO of GéoMégA and he approves the technical information in this press release.

About GéoMégA (www.geomega.ca)
GéoMégA is a mineral exploration and evaluation company focused on the discovery and sustainable development of economic deposits of metals in Québec. GéoMégA is committed to meeting the Canadian mining industry standards and distinguishing itself with innovative engineering, stakeholders’ engagement and dedication to local transformation benefits.

About Innord Inc.
Innord is a private subsidiary of GéoMégA of which GéoMégA owns 96.1%. The goal of Innord Inc. is to develop and optimize the proprietary separation process of rare earth elements based on electrophoresis, for which it holds all the rights. Electrophoresis is the migration of charged species (ions, proteins, particles) in solution in the presence of an electric field. Innord has filed patents in Canada and the United States to protect its novel separation process and is looking to file in other jurisdictions.

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Two photos accompanying this announcement are available at

http://www.globenewswire.com/NewsRoom/AttachmentNg/be720fb8-e35f-4523-8e7b-b0ec84dd4b80

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