



KAN Regional Exploration Update:

Quebec Drill Program Begins

August 21, 2012, Toronto, Ontario, Canada- Rio Silver Inc. (TSX-V: RYO) (the "Company") is pleased to announce the commencement of the 2012 exploration program at its 100% owned KAN property, located in the Labrador Trough area of Nunavik Territory, Quebec, approximately 80 km southwest of Kuujuaq.

The KAN property is a gold, lead-zinc-silver project consisting of over 30,000 hectares of prospective Paleoproterozoic volcanic-sedimentary host rocks and is considered to be a poly-metallic target characterized by iron formation hosted gold mineralization and SEDEX style lead-zinc-silver mineralization. The exploration fieldwork is being supervised by Dahrouge Geological Consulting Ltd., Edmonton, Alberta.

Management plans to carry out a modest exploration program at the KAN given the challenging markets for financing junior exploration companies. The current 1000 metre limited diamond drill program is planned to assess the potential for three main gold and base metal targets of interest identified during the 2011 exploration season.

Pump Pad Ridge

During the 2011 program, channel sampling reported 3.12 g/t gold over 13.89 metres at a robust quartz ankerite stockwork zone in a carbonate iron formation exposed at surface. The current program plans diamond drilling to determine the potential of this newly discovered iron formation hosted gold target.

MUN Gravity Anomaly

Two gravity surveys were completed over portions of the KAN property between 1999 and 2000 while being explored by Noranda. The Company's review of the data has identified a significant gravity anomaly that has previously been overlooked and never drilled. This geophysical signature is typical of a SEDEX environment. The gravity anomaly covers an extensive area of approximately 350 metres x 850 metres (see map 2-MUN Gravity Anomaly) and it is proximal to the massive sulphide boulder trains and the original KAN base metal showing. In 2011 the Company sampled 41 high grade boulders averaging 9.03% zinc, 6.94% lead, 270 g/t silver and 0.65 g/t gold north of the MUN gravity anomaly.

Additional Base Metal Targets

Geotech Ltd., of Aurora Ontario, was retained by the Company in 2011 to fly a VTEM survey over the KAN property claims held at that time. Geotech interpreted the VTEM data and identified several electromagnetic and magnetic anomalies in a previously unexplored area indicative of potential volcanogenic massive sulphide targets. The Geotech report used Maxwell Model imaging to identify over forty target models appearing in pairs of sub-vertical and sub-

horizontal conductors, which are common for VMS exploration targets. The entire report is available at the Rio Silver website. The company will plan follow up drilling of these geophysical targets as budgets allow.

Jean-Paul M. Tsotsos, M.Sc. P.Geo. is the Qualified Person who has reviewed and is responsible for the technical information contained in this news release.

ON BEHALF OF THE BOARD OF DIRECTORS OF
RIO SILVER INC.

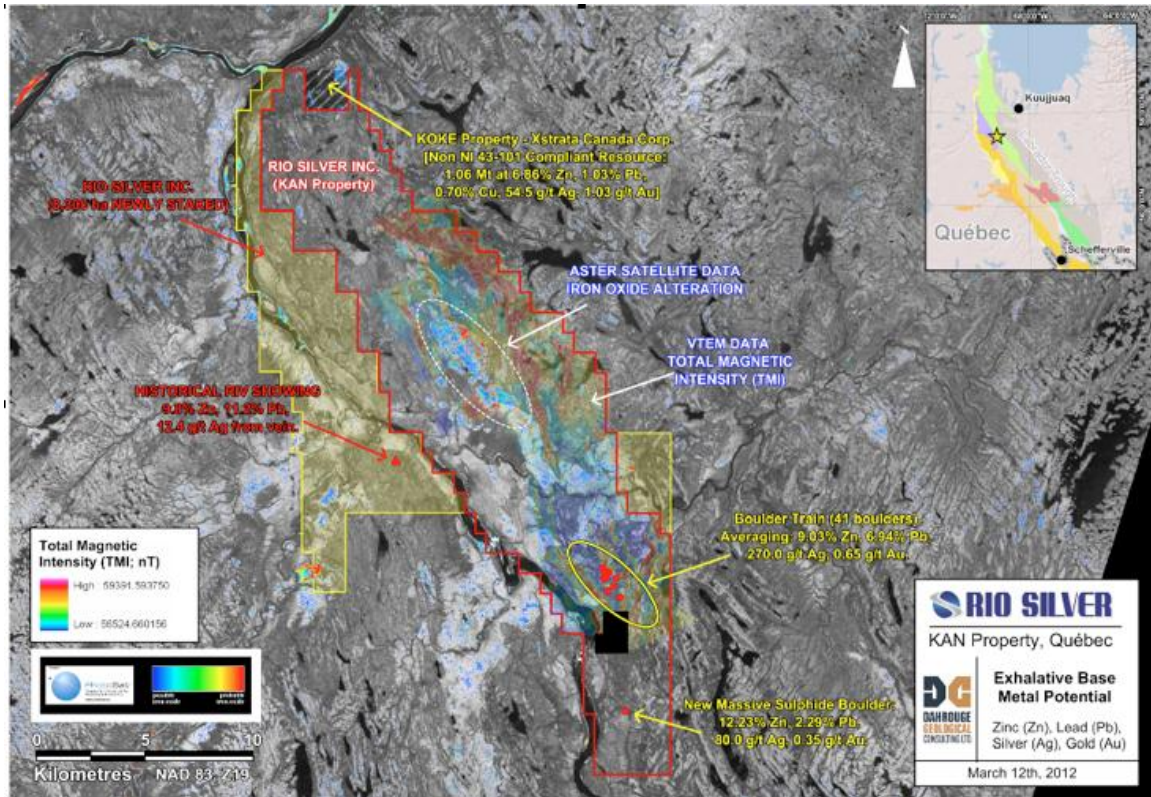
Thomas John Magee
CEO and President

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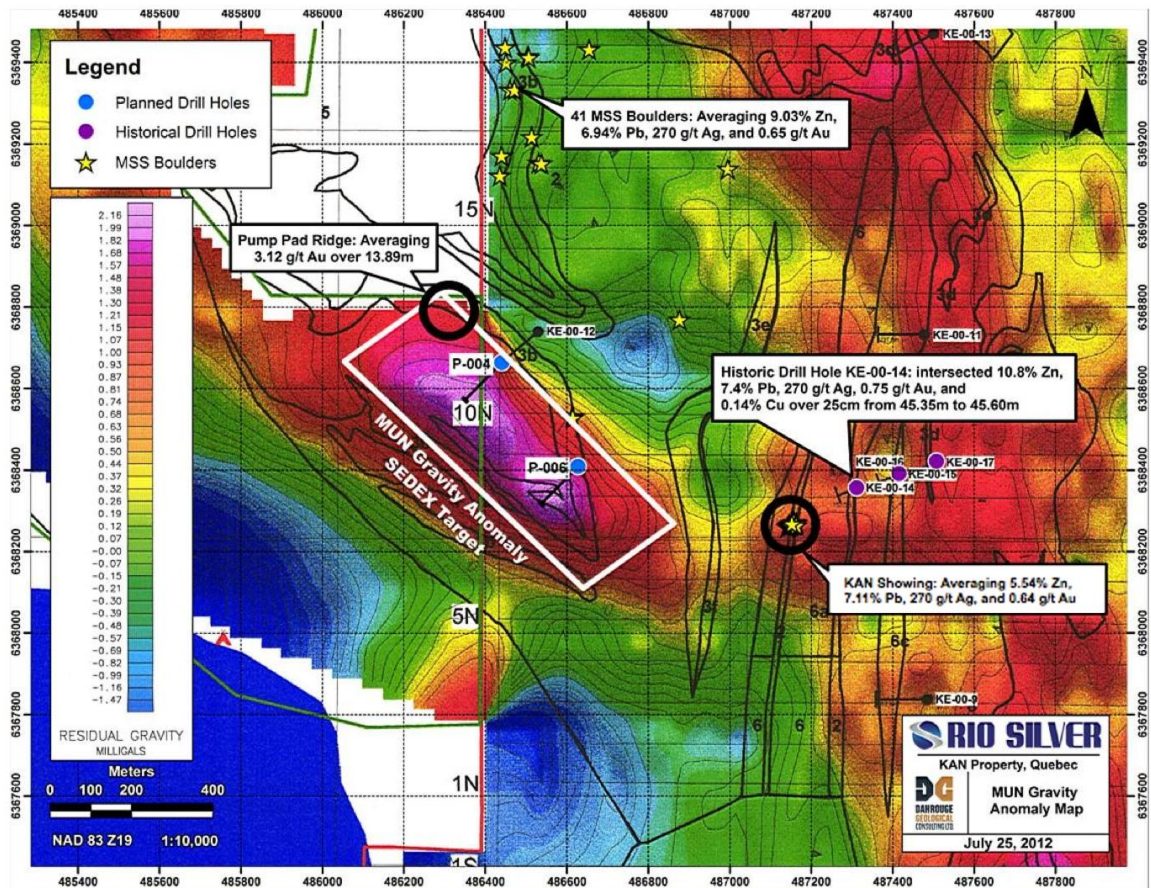
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KAN claim outline



MUN Gravity Anomaly