

Buchans Minerals successfully produces high purity manganese electrolyte for the production of electrolytic manganese metal

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WINDSOR, NS, May 3, 2012 /[CNW](#)/ - [Buchans Minerals Corporation](#) (TSXV: BMC) ("Buchans Minerals" or the "Company") is pleased to announce that Thibault & Associates Inc., of Fredericton, N.B. has completed a bench scale test program for development of a hydrometallurgical flowsheet for recovery of manganese on a representative composite sample prepared from the 2011 drill program of the Company's Plymouth manganese deposit, located in New Brunswick, Canada, which has an average weighted grade of 11.07% manganese and 15.25% iron. The bench scale test program successfully demonstrated that, at optimum leach conditions, leach recoveries averaging 96.6% (range of 94% to 98%) could be achieved using a single stage sulphuric acid leach, an increase of 7.6% over previous non-optimized test results (see November 28th, 2011 news release). In addition, the leach solution purification portion of the test program resulted in the production of a high purity manganese sulphate electrolyte, which is expected to produce high grade electrolytic manganese metal (EMM), based on Evan's Diagram predictions, at greater than 99.7% manganese content. Based on the results of the bench scale test program and mass balance modeling of the proposed hydrometallurgical process, the overall recovery of manganese is expected to be approximately 90%.

The Plymouth deposit is one of three deposits acquired by the Company in 2010 located within the Company's 100% owned, 5,800 hectare, Woodstock Manganese mineral claims. Based on historical work, these deposits potentially represent one of the largest undeveloped manganese resources in North America. In 1957, previous operators, Strategic Manganese Corporation, estimated a non-43-101 compliant, historic, uncategorized resource estimate of 51.2 million short tons (46.5 million tonnes) averaging 10.9% Mn (manganese) and 13.3% Fe (iron) for the Plymouth deposit. In addition, Strategic Manganese Corporation estimated the North Hartford deposit to contain 50 million short tons (45 million tonnes) grading 8% Mn and 12% Fe, and the South Hartford deposit to contain 50 million short tons grading 8% Mn and 12% Fe(3).

Mineralogical examination has shown that the manganese contained in the 2011 drill core composite sample is primarily present as manganese carbonate and this fact is supported by the high leach recoveries reported by Thibault & Associates using a sulphuric acid leach. It is noted that over 90% of Chinese EMM is produced from manganese carbonate ores(1) and that processing of carbonate manganese ores has the distinct advantage of eliminating the requirement for addition of a reducing agent to solubilize manganese in the leach, as is the case with manganese oxide ores. The leach process developed by Thibault & Associates is similar to that used on Chinese manganese carbonate ores(1) but with higher anticipated manganese recoveries.

Warren MacLeod, President and Chief Executive Officer of Buchans Minerals stated; "These are exceptional achievements and we thank Thibault & Associates for their thoroughness and dedication to the project. Establishing the basic metallurgical circuit and operating parameters is a major step forward. In order to put the scale of our Woodstock properties in perspective, I would note that historic resource estimates for Woodstock(3) are equivalent to a total manganese metal content of 12.3 million tonnes Mn and that the manganese content of manganese carbonate reserves in China are estimated at roughly 30 million tonnes Mn(1). Given the development restrictions facing EMM producers in China and the declining tonnages and grades of Chinese manganese carbonate ores, the Company believes a window of opportunity now exists to develop manganese carbonate deposits to produce EMM and other high grade manganese products outside of China to meet the future demand from China and the rest of the world. We believe our Woodstock deposits have the scale and process characteristics to play a major role in this opportunity. Consequently, we will endeavor to advance the project as rapidly as possible and, given the potential scale of the project, will seek a partner to advance the project."

The Hydrometallurgical Process:

The program was aimed at continuing to identify and optimize a leach process to extract the manganese from the deposit, as well as new tests designed to purify the resulting leach solution to produce an electrolyte suitable for the production of EMM.

A four stage circuit to purify the leach solution has been developed comprising a two stage lime precipitation

circuit, primarily to remove iron and aluminum, followed by a two stage sulphide precipitation circuit, primarily to remove base and heavy metals. This process has resulted in the production of manganese electrolyte solution, predicted by the Evans Diagram to produce high purity EMM at greater than 99.7% manganese content. The developed sulphuric acid leach process avoids the use of a reducing sulphur dioxide leach, which results in increased system complexity and cost as well as creating potential for complications in the subsequent circuit as a result of the production of dithionates in the leach.

Thibault & Associates have recommended that the sulphuric acid leach, solution purification unit operations and electrolytic process be piloted to confirm these and other findings.

An additional solution purification circuit employing solvent extraction to further purify the leach solution, with a view to producing EMM of exceptional purity, has been successfully tested. The tests show a reduction in a wide range of impurities to very low levels. The resulting high purity electrolyte is predicted by the Evans Diagram to produce EMM with a purity of greater than 99.9% manganese content. Further bench scale testing of this process is required to optimize operating parameters and establish operating costs before this process can be considered for incorporation in the main hydrometallurgical process.

Use of solvent extraction in the recovery of manganese is extensively reported in the literature; however, it has not been used in the commercial production of EMM, though it is noted that solvent extraction is widely used in the commercial production of copper, uranium and other metals.

Economic Model:

Based on the bench scale test program results and with the use of many conventional unit operations in the design of the process block diagram, Thibault & Associates have established ore grinding requirements, estimated reagent consumption levels, developed block diagrams, established theoretical energy requirements and produced a dynamic economic model which simulates the process flowsheet and quantifies conceptual operating and capital costs. The model has proven invaluable in optimizing conditions that may maximize the predicted economics of the project. A treatment rate of 3,000 tpd producing about 100,000 tpa EMM over thirty years is currently being evaluated. A treatment rate of 6,000 tpd producing about 200,000 tpa EMM over 20 years will also be considered.

Thibault & Associates have identified a number of additional process refinements that may further optimize the technical and economic viability of the hydrometallurgical process. Buchans Minerals intends to pursue such refinements in the near future.

Electrolytic Manganese Metal Market: (1) (2)

The EMM market began to significantly expand in 2000 when stainless steel production began to make use of EMM as a replacement for nickel with great success. Since 2002 development of chrome-manganese stainless steel production has been swift, dramatically increasing demand for manganese and accelerating development of the EMM industry, particularly in China. Worldwide demand rose from 250,000 tonnes in 2002 to over 1,532,000 tonnes in 2011, a 513% increase in 9 years, with China supplying 97% of demand, primarily from low grade manganese carbonate ores. The average manganese content of Chinese carbonate ores currently being treated is 14% and declining at a rate of 1% manganese every two years. (2) EMM world demand is forecast to steadily rise from over 1,532,000 tonnes in 2011 to almost 2,839,000 tonnes in 2021 (an average increase of nearly 131,000 tpa) with the price predicted to increase from \$1.53/lb to \$2.30/lb over the same period(1).

There are currently a number of factors affecting the Chinese EMM industry that highlight an opportunity for the launch of foreign EMM production outside of China. These include diminishing tonnage and grade of Chinese manganese carbonate deposits, high electricity costs (\$0.08/kwh) and erratic supply, high average mining costs due to narrow vein underground ore sources and open pit ore sources with high stripping ratios (\$86/t ore average) and increasing environmental standards that are unattainable by the vast majority of small processors in China. The Shanghai Metals Market identify in their "China Manganese Industry Chain Analysis Annual Report for 2010" that they believe production of Chinese carbonate ores will face increased restrictions of production for the reasons identified above.

Location, Background and Historical Resources:

The Woodstock property hosts three deposits of sediment-hosted-manganese-iron mineralization discovered in 1957 by Strategic Manganese Corporation. These historic deposits include the Plymouth and two Hartford deposits (North & South) located 5 kilometres west of the town of Woodstock. The project possesses

excellent infrastructure, including railway lines (16 km west) as well as the TransCanada Highway and major electrical transmission lines located less than 5 kilometres to the east. The Plymouth deposit is located less than 10 kilometres east of the US border and highway Route 95 (an extension of US Interstate 95) passes less than a kilometre south of the deposit.

In 1957, Strategic Manganese Corporation reported the Plymouth deposit extends from surface to a minimum depth of 500 feet (152 metres) and hosts a non-43-101 compliant, historic, uncategorized resource estimate of (3)51.2 million short tons (46.5 million tonnes) averaging 10.9% Mn (manganese) and 13.3% Fe (iron). The property is also host to historic resource estimates for the Hartford North and South deposits, also compiled by Strategic Manganese Corporation in 1957, and located less than 2 kilometres on strike to the north of the Plymouth deposit. Historic uncategorized resource estimates for the Hartford deposits were reported to have relied on a combination of results obtained from diamond drilling and associated gravimetric data. Strategic Manganese's 1957 resource estimates include 50 million short tons (45 million tonnes) grading 8% Mn and 12% Fe at the (3)North Hartford deposit and an additional resource of 50 million short tons grading 8% Mn and 12% Fe at the (3)South Hartford deposit.

A cross section from Sidwell (3) and two cross sections from Buchans Minerals 2011 drill program show the Plymouth deposit dipping close to vertical and outcropping at surface over widths varying from 88 metres to 214 metres, suggesting the deposit may be amenable to open pit development.

Quoted historical resource estimates are based on data obtained and prepared by previous operators and Buchans Minerals has not located the original assay sheets or details of the estimation methodology completed, nor has Buchans Minerals undertaken the work necessary to verify or classify the mineral resource estimate. Buchans Minerals is not treating the historical mineral resource estimates as NI 43-101 defined resources verified by a qualified person, and the estimates should not be relied upon. Verification and classification of resources will require considerable further evaluation, the scope of which is currently being assessed by the Company's management.

References:

- (1) Manganese Market Outlook, February 2012, CPM Group, New York, USA.
- (2) China Manganese Industry Chain Analysis for 2010 and for 2011-2012, Shanghai Metals Market.
- (3) Historic resource estimates from an article written by K.O.J. Sidwell, 1957: The Woodstock, N.B., Iron-Manganese Deposits. Transactions of the Canadian Institute of Mining and Metallurgy, volume LX, 1957, pages 231-236. The article reports; the Plymouth resource estimate was compiled from data acquired from a total of 17,388 feet (5,300 metres) of drilling; the North Hartford resource estimate was compiled from data acquired from a total of 13 drill holes totaling 5,381 feet (1,640 metres) of drilling as well as gravimetric geophysical data, and; the South Hartford resource estimate was compiled from data acquired from a total of 9 drill holes (footage undisclosed) as well as gravimetric geophysical data.

Qualified Persons and Quality Assurance and Quality Control:

J. Dean Thibault, P. Eng., Senior Process Chemical Engineer and Principal of Thibault & Associates Inc., of Fredericton, New Brunswick, is acting as a Qualified Person in compliance with National Instrument 43-101, with respect to the metallurgical bench scale test program information contained in this release and has reviewed the contents for accuracy.

Paul Moore, MSc, PGeo (NL), Vice-President Exploration for Buchans Minerals Corporation, is acting as a Qualified Person in compliance with National Instrument 43-101 with respect to the geological technical information contained in this release and has reviewed the contents for accuracy. Much of the geological information contained herein is, however, historical in nature and relies entirely on data provided by other sources which have not and cannot be independently verified at this time. As such, the historical resource data discussed herein should not be relied upon, but are presented as an indication of the exploration and development potential of the mineralization described.

About Buchans Minerals:

Buchans Minerals is an Atlantic Canada based resource company that has three main assets that include its base metal properties near Buchans in Central Newfoundland, its manganese property located near Woodstock in New Brunswick and its 50/50 gold & copper joint venture with Benton Resources on the Long Range property in central Newfoundland.

Forward Looking Statements:

Information set forth in this news release may involve forward-looking statements under applicable securities

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We seek Safe Harbor.

For further information:

Buchans Minerals Corporation.
Warren MacLeod, President & CEO
Ph: (902) 472-3520
Windsor, Nova Scotia
www.buchansminerals.com

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