

# Minco Plc announces completion of metallurgical development program at Plymouth manganese project, New Brunswick

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- Hydrometallurgical process defined
- Electrolytic Manganese Metal (EMM) produced in bench scale testing

[Minco Plc](#) (AIM - "MIO") (the "Company") is pleased to announce the completion of a bench scale test program that has defined a hydrometallurgical process for the Company's 100% owned Plymouth manganese deposit and successfully produced commercial grade electrolytic manganese metal (EMM) containing between 99.71% to 99.75% Mn.

Completion of the process development program has defined a viable technology for hydrometallurgical processing of the Plymouth deposit that employs high gradient magnetic separation, leaching, solution purification, electrowinning and waste management.

The successful definition of the hydrometallurgical process and the test production of commercial grade electrolytic manganese metal allow Minco to complete a Preliminary Economic Assessment (PEA) of its Woodstock manganese project. Contracts for completion of the PEA have been jointly awarded to independent consultants Tetra Tech of Toronto and Thibault and Associates of Fredericton. The PEA is anticipated to be completed during the second quarter of 2014.

*"We are very pleased to have completed this positive bench scale test program indicating that the proposed hydrometallurgical process for production of high-purity electrolytic manganese metal is technically viable",* stated John Kearney, Chairman of Minco. *"This is a significant step forward for Minco's Woodstock manganese project".*

## HYDROMETALLURGICAL PROGRAM

Since 2011, Thibault and Associates Inc. ("Thibault") of Fredericton, New Brunswick have been working under contract to Minco to develop and design a hydrometallurgical process for the production of electrolytic manganese metal from the Plymouth deposit. Several phases of bench scale test work were completed by Thibault to assess alternative technologies and to optimize each stage of the process. A batch mini-pilot test program was also completed to simulate the purification of manganese sulfate electrolyte for confirmation of EMM product quality.

The process flowsheet includes high-gradient magnetic separation (HGMS) to pre-concentrate the ore prior to hydrometallurgical processing. Pre-concentration of the ore by HGMS resulted in the upgrading of a composite ore sample from 11.4% Mn to obtain a concentrate containing 14.85% to 15.85% Mn at recoveries ranging from 86.6% to 89.6%.

Commercially proven process technologies were selected for purification of the manganese sulfate solution and to minimize the environmental impact of hydrometallurgical residues.

## SUCCESSFUL PRODUCTION OF COMMERCIAL GRADE EMM

The purified manganese sulfate solution generated from mini-pilot simulation of the hydrometallurgical process was used to assess various operating parameters for production of EMM using a prototype electrowinning cell similar to commercial cells. Semi-continuous bench scale electrowinning tests over an 8-hour duration consistently produced EMM (under optimized conditions) with a metallic manganese content (based on trace metal impurity analysis) of greater than 99.99%.

The next phase of process development testing will focus on the operation of a small scale continuous pilot test program to confirm product grade and recovery relative to ore variability and process equipment scale-up parameters.

## ABOUT THE PLYMOUTH DEPOSIT

The Plymouth deposit is one of three known manganese deposits located within Minco's 100% owned Woodstock property, located five kilometres west of the town of Woodstock in New Brunswick, Canada. The Woodstock property is believed to be Canada's largest undeveloped manganese resource

On May 8<sup>th</sup>, 2013, Minco announced an Inferred Resource for the Plymouth manganese deposit of 43.7 million tonnes grading 9.98% Mn at a 5% Mn cut-off. This Inferred Resource estimate is NI 43-101 compliant and contains higher-grade shells with lesser tonnages at higher cut-offs including 22.5 million tonnes grading 11.86% Mn at a 10% Mn cut-off and 9.1 million tonnes grading 13.19% Mn at a 12% Mn cut-off. The estimates were completed by Mercator Geological Services of Dartmouth, Nova Scotia. The Plymouth deposit remains open at depth and along strike in both directions.

## QUALIFIED PERSON AND SAMPLING PROCEDURE

J. Dean Thibault, P.Eng. and Stephanie M. Goodine., P.Eng. of Thibault & Associates Inc., are acting as a Qualified Persons in compliance with National Instrument 43-101 with respect to the metallurgical bench scale process development test program and process flowsheet design information contained in this release and have reviewed the contents for accuracy.

Paul Moore, MSc, P.Geo., (NL), Vice-President Exploration for Buchans Minerals Corporation (100% subsidiary of Minco) is acting as a Qualified Person in compliance with NI-43-101 with respect to the geological technical information contained in this release and has reviewed the contents for accuracy.

## ABOUT MINCO

[Minco Plc](#) is registered in the Republic of Ireland and is listed on the AIM Alternative Investment Market of the London Stock Exchange ("MIO"). The Company is focussed on exploration and development of zinc-lead projects in the United Kingdom, Canada and Ireland; and is also evaluating a manganese project in New Brunswick, Canada.

In the UK, Minco is continuing an ongoing drilling program on its Northern Pennines zinc-lead exploration project, where the Company has intersected promising base metal results from an area that was once the centre of European base metal production in the 17 and 18<sup>th</sup> centuries.

Minco is currently carrying out a pre-feasibility study on its Buchans zinc/lead project in Newfoundland, and is currently undertaking a winter exploration diamond drilling program on its Clementine West prospect adjacent to Buchans

Minco also has interests in zinc-silver projects in Mexico through its holding of 30 million shares (approximately 29%) in [Xtierra Inc.](#) listed on the TSX Venture Exchange (TSX.V-"XAG").

Minco also holds a 2% NSR royalty on the Curraghinalt gold property in Northern Ireland that is being explored by [Dalradian Resources Inc.](#) (TSX-"DNA").

SOURCE [Minco Plc](#)

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refer to Minco's website at [www.minco.ie](http://www.minco.ie) or contact:

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