



## PRESS RELEASE

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### POSITIVE RESULTS FROM METALLURGICAL RESEARCH PROGRAM CENTRAL NEWFOUNDLAND VMS DEPOSITS

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Vancouver, British Columbia, March 7, 2017 - Canadian Zinc Corporation (TSX: CZN; OTCQB: CZICF) (“the Company” or “Canadian Zinc”) provides a summary of the results from its recently completed research program investigating the viability of a central milling facility to develop its volcanogenic massive sulphide (“VMS”) Zn-Pb-Cu-Ag-Au base metal deposits in central Newfoundland.

#### Objectives of the Research Program

Canadian Zinc and Buchans Minerals Corporation (100% owned subsidiary of Minco PLC (AIM:MIO)) undertook the collaborative study to explore the concept of a centralized milling facility to process multiple base metal deposits in Newfoundland.

Both companies have base metal exploration projects with several polymetallic deposits under advanced exploration and early development within the vicinity of the past producing Buchans and Duck Pond mines in central Newfoundland. The main copper, lead, zinc silver and gold deposits that were included in this study were the Lemarchant and Boomerang-Domino deposits, 100% owned by Canadian Zinc and the Bobbys Pond, Daniels Pond and Lundberg deposits, 100% owned by Buchans Minerals.

The Lundberg deposit is the largest, most advanced property in terms of resource definition, mine planning (with the potential to have an open pit mine), metallurgical testing and economic studies completed to date. All the other mineral deposits are smaller, higher grade deposits that may not individually support a mine and processing operation and therefore the principal goal of the research program was to assess the technical and economic viability of developing a number of these mineral deposits utilizing a common central processing facility.

The metallurgical research program was funded in part by the Research & Development Corporation of Newfoundland and Labrador through the GeoEXPLORE Industry-led program.

#### Research Study Methodology

To evaluate the potential for centralized milling of some or all of these deposits, the study included bench scale testing for process development, preliminary mine plan development and using a conceptual economic model to assess the economics of various processing scenarios.

The bench scale test work was undertaken by Thibault & Associates Inc. of Fredericton, New Brunswick, to characterize each deposit with respect to dense media separation (“DMS”) and flotation for production of copper, lead and zinc concentrates. The use of DMS was considered as an opportunity to reduce transportation costs by rejecting waste at the mine site before

trucking to the central milling facility. The bench scale flotation testing was completed in order to develop a common flotation flowsheet with flexibility for processing of the five different deposits involved, and improve grades, recoveries and operating costs defined by previous test programs.

Canadian Zinc and Buchans provided preliminary mine plans, mining costs and operating costs for each of their respective deposits. Thibault & Associates Inc. combined the mining inputs with a process simulation and costing model to develop a conceptual economic model for the project, which was used to evaluate various process options. The variables assessed included several potential mill sites, with or without DMS, new or used process equipment, mining rate, and processing feedstock composition for each deposit.

### **Highlights of Results of Research Program:**

- Pre-concentration of the samples by bench scale DMS testing (prior to flotation) was determined to be technically viable for the Lundberg deposit, Bobbys Pond samples and the semi-massive and stringer sulphide sample from the Lemarchant Footwall.
- Metallurgical test results strongly support the development of a sequential flotation flowsheet for the processing of all five deposits using a centralized processing facility.
- Bench scale flotation test programs indicated improved grade and recovery relationship for the production of copper, lead and zinc concentrates using a common sequential flotation flowsheet rather than a bulk flotation flowsheet.
- Test results and METSIM™ metallurgical simulations confirm that selective zinc, lead and copper concentrates at marketable grades can be produced using a sequential flotation flowsheet.
- The process simulation and cost assessment results (conceptual economic modeling) provided key information on which to base future studies and development plans, including the ongoing exploration programs that are critical to expanding the deposits and advancing the viability of developing the central Newfoundland deposits through a centralized milling facility.

*“We are very satisfied and encouraged with the results of the research program”, stated **John Kearney, Chairman and Chief Executive of Canadian Zinc.** “From the important metallurgical standpoint, demonstrating that these five different deposits can be processed on a common flotation flowsheet is a key step forward in evaluating the viability of centralized milling as a development opportunity for these projects. The initial economic simulations utilizing this new metallurgical data provides valuable information and direction on which to guide our future exploration and development plans for our Newfoundland deposits”.*

### **Summary Findings of Research Program**

The DMS and metallurgical test results for all five deposits were reported in November 2016 (see news release November 3, 2016).

The DMS and metallurgical test programs were followed-up by Thibault & Associates with a **Process Simulation and Cost Assessment** model (AACE Class V – order of magnitude conceptual assessment) to evaluate and identify the key factors impacting the operating economics of a centralized processing concept for the production of the base metal concentrates from the five base metal deposits.

Multiple conceptual economic scenarios at three potential sites were developed to simulate the proposed centralized milling concept. The variables assessed included the different potential mill sites, with or without DMS, new or used process equipment, mining rate, and processing feedstock composition for each deposit. Lundberg, being the largest but lowest grade deposit, was considered the main plant feed and Lemarchant, Boomerang, Daniels Pond and Bobbys Pond were treated as satellite deposits.

The metallurgical research study demonstrated that the ore from the Company's Lemarchant and Boomerang-Domino deposits can be successfully processed in a central mill using a sequential flotation flowsheet, and that selective zinc, lead and copper concentrates at marketable grades can be produced from these deposits.

The positive results of the research project provide valuable direction to guide future exploration on the Company's central Newfoundland deposits and the conceptual economic modeling provided key information on which to focus future economic studies and development plans for advancing the development of these deposits through a centralized milling facility

It was recommended that further review of the satellite deposits should be undertaken to examine the potential to increase minable resource size, run of mine ore grades and mine production rates, and to evaluate alternative cost effective mining methods.

### **Acknowledgement**

Canadian Zinc would like to recognize the Research & Development Corporation of Newfoundland and Labrador for its financial support of the centralized milling research initiative through the GeoEXPLORE Industry-led program.

### **About Canadian Zinc**

Canadian Zinc is a TSX-listed exploration and development company trading under the symbol "CZN". The Company's key project is the 100%-owned Prairie Creek Project, a fully permitted, advanced-stage zinc-lead-silver property, located in the Northwest Territories.

Canadian Zinc owns an extensive land package in central Newfoundland that it is exploring for copper-lead-zinc-silver-gold deposits. These include the **South Tally Pond project** (Lemarchant deposit); **Tulks South project** (Boomerang-Domino and Tulks East deposits) and **Long Lake project** (Long Lake deposit).

Canadian Zinc is currently undertaking a 2017 winter drill program designed to test for mineralized extensions to the Lemarchant massive sulphide deposit immediately along strike and dip of the currently defined Lemarchant resource.

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Cautionary Statement – Forward-Looking Information

*This press release contains certain forward-looking information, including, among other things, the expected completion of acquisitions and the advancement of mineral properties. This forward looking information includes, or may be based upon, estimates, forecasts, and statements as to management's expectations with respect to, among other things, the completion of transactions, the issue of permits, the size and quality of mineral resources, future trends for the company, progress in development of mineral properties, future production and sales volumes, capital costs, mine production costs, demand and market outlook for metals, future metal prices and treatment and refining charges, the outcome of legal proceedings, the timing of exploration, development and mining activities, acquisition of shares in other companies and the financial results of the company. There can be no assurances that such statements will prove to be accurate and actual results and future events could differ materially from those anticipated in such statements. Mineral resources that are not mineral reserves do not have demonstrated economic viability. Inferred mineral resources are considered too speculative geologically to have economic considerations applied to them that would enable them to be categorized as mineral reserves. There is no certainty that mineral resources will be converted into mineral reserves.*

*Michael J. Vande Guchte, P.Geo., Vice President of Canadian Zinc Corporation is a Qualified Person as defined by NI 43-101 and has reviewed and approved the contents of this press release.*

*J. Dean Thibault, P.Eng., Senior Process Chemical Engineer of Thibault & Associates Inc. is a qualified person for this release and has reviewed the contents for accuracy and approved this release. Thibault & Associates Inc. is a process chemical engineering firm specializing in process flowsheet development, plant design and process intensification assessments.*

Cautionary Note to United States Investors

*The United States Securities and Exchange Commission ("SEC") permits U.S. mining companies, in their filings with the SEC, to disclose only those mineral deposits that a company can economically and legally extract or produce. We use certain terms in this press release, such as "measured," "indicated," and "inferred" "resources," which the SEC guidelines prohibit U.S. registered companies from including in their filings with the SEC.*