THE POLYMETALLIC COPPER NICKEL POTENTIAL

OF THE LAKE SUPERIOR DISTRICT

THUNDER BAY
CEDC
COMMUNITY ECONOMIC
DEVELOPMENT COMMISSION

INTRODUCTION

The purpose of this paper is to introduce a high-level review of the possibilities of a copper nickel producing hydrometallurgical industry, based in the municipality of Thunder Bay, Ontario. It is hoped that this review will stimulate industry interest and study of the significant possibilities lying in application of modern hydrometallurgy to the known polymetallic mineral deposits of both the Archean eon and the younger Mid-Continent rift related, 1.1-Billion-year-old Proterozoic age copper nickel deposits of Northwestern Ontario and the adjacent US States of Michigan and Minnesota. Thunder Bay is well suited by its location and infrastructure to site the processing facilities for the concentrates derived from The Lake Superior District's operating mines, known resources, and advanced exploration projects.

> **THIS PAPER'S PRIMARY FOCUS IS THE ENORMOUS POLYMETALLIC COPPER NICKEL POTENTIAL OF THE LAKE SUPERIOR DISTRICT!**

But in view of the known oxide resources and expressed interest of Avalon Advanced Materials (www.avalonadvancedmaterials.com), Frontier Lithium (Frontier Lithium | Lithium Chemicals & Concentrates | Ontario), Green Technology Metals (www.greentm.com.au) and RockTech Lithium (www.rocktechlithium.com). In the possible establishment of a joint hydrometallurgical lithium processing plant, to be located in Thunder Bay, the possibilities of oxide mineral processing will be briefly touched on. An excellent recent paper on world lithium resources and hydrometallurgical processing: OJC_Vol34_No6_p_2762-2769.pdf

The Lake Superior District also contains economically significant resources of titanium, vanadium, and iron, which are amenable to hydrometallurgical processing. In this context attention is directed to the recent independent study, by the Natural Resource Research Institute (NRRI) of Minnesota, of hydrometallurgy in Ilmenite processing NRRI-TR-2017-25.pdf (umn.edu)

There are numerous polymetallic mafic and ultramafic hosted mineral occurrences, ranging in age from Archean to Proterozoic located within the Lake Superior District of the Proterozoic Mid Continent Rift system. The known mineralization ranges from producing mines to relatively early-stage exploration projects and covers a wide spectrum of mineralization. Ranging from nickel dominant to copper dominant with variable amounts of cobalt and precious metals. Total known polymetallic mineral resources in the Lake Superior District unquestionably exceed 7 billion tonnes of ore. Many currently known deposits include considerable exploration upside. Many of the lower grade disseminated deposits appear to be amenable to open pit methodology. Practically all of the Lake Superior District's deposits, on a NSR basis, would rank in the top quartile of comparable operating porphyry mines and deposits around the world.

Thunder Bay with its central location, skilled labor pool, established mining support industries, low carbon electricity, available water, and strong transportation links is well situated to supply North American demand for the metals required by the green economy.

Historically the accepted method of processing ores has involved pyrometallurgic (smelting) methods of processing the concentrates derived from base metal deposits. Recent advances in hydrometallurgical technology and processing have suggested that hydrometallurgy can potentially offer advantageous alternatives to conventional pyrometallurgical methodologies. This is especially the case when considering the necessity of minimizing environmental impacts derived from processing the metals that will be required by a sustainable renewable economy.

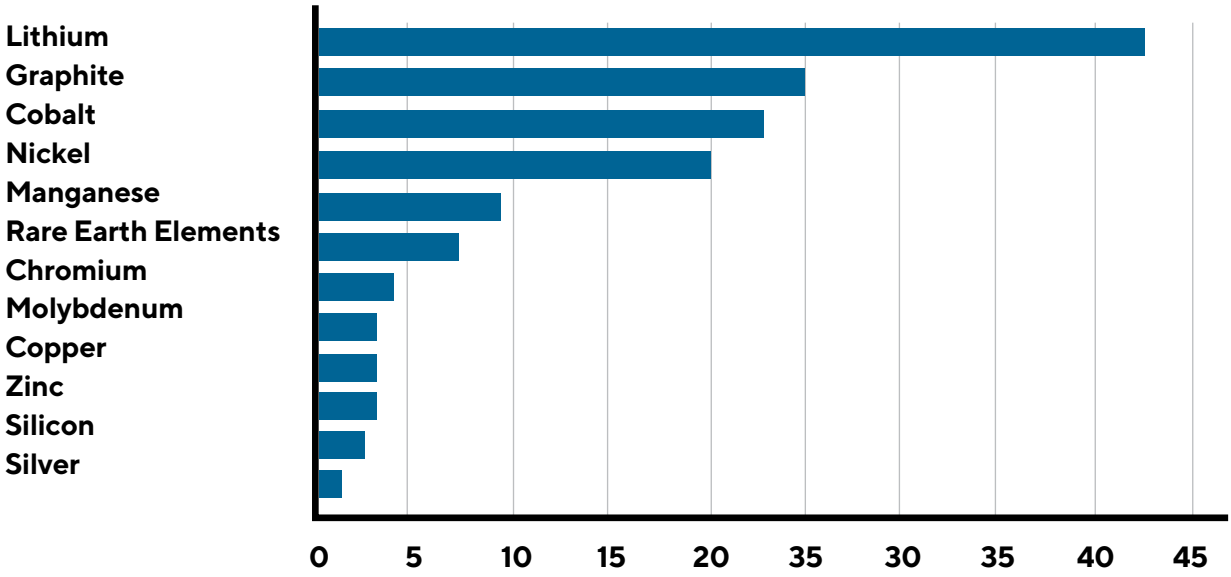
This paper is presented as a review and compilation of the most current public information available hence, in some cases, the reader is advised to contact the relevant entities direct for nonpublic data as to technology or resources and reserves of the various deposits

Predictions, especially about the future, are notoriously inaccurate and unreliable. But a recent World Bank report indicated the likely massive demand increases for nickel, copper, and numerous other metals, which could be derived from the world class mineral endowment of the Lake Superior District. "Minerals for Climate Action: The Mineral Intensity of the Clean Energy Transition" 2020 International Bank for Reconstruction and Development/ The World Bank. 110 pages. (https://pubdocs.worldbank.org/en/961711588875536384/Minerals-for-Climate-Action-The-Mineral-Intensity-of-the-Clean-Energy-Transition.pdf)

Figure 3 shows how many minerals used in green technologies will go through a significant surge in demand during the energy transition. Demand for raw materials used in existing clean-energy technologies, such as solar panels and wind turbines, is expected to increase significantly.

Figure 3

TIMES COMPARED TO 2020 LEVEL, DEMAND FOR MINERALS IN 2040

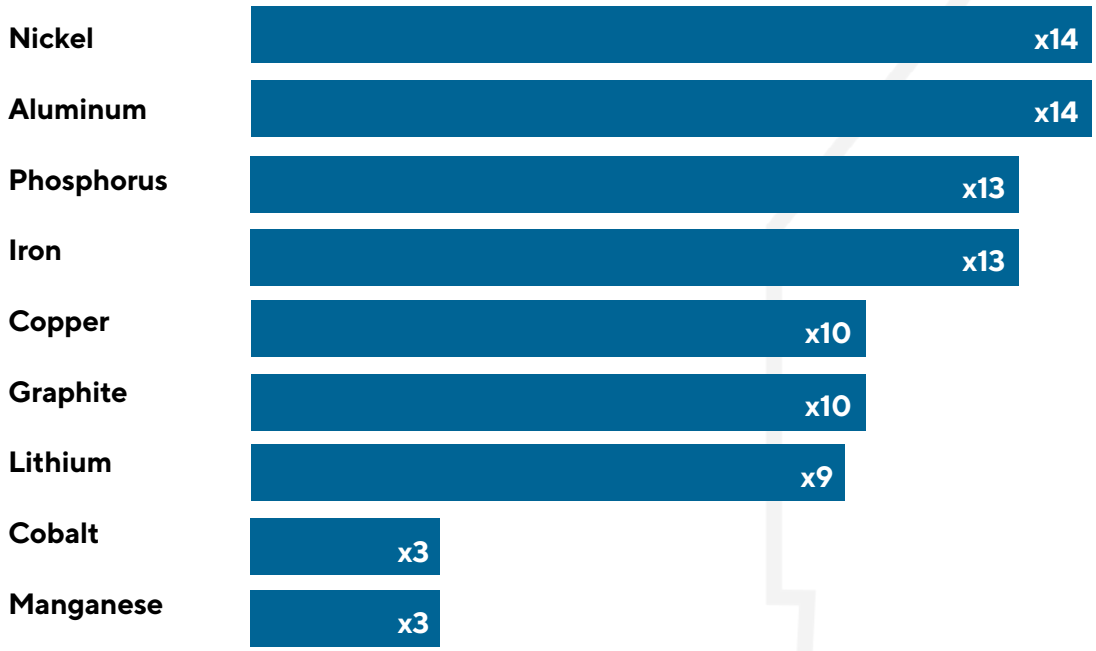


Source: IIF (2021)." Quoted from O. Canuto article published on seeking Alpha December 12 2021 https://seekingalpha.com/article/4474720-decarbonization-and-greenflation?

Another demand projection to present the variability of projected demand. From Statista using Bloomberg Data. All reputable projections indicate metal demard at many multiples of current world production, over the next few decades.

ELECTRIC CARS BOOST METAL DEMAND

Demand increase in precious metals and materials between 2019 and 2030



Source: Bloomberg

HYDROMETALLURGY

There are a number of hydrometallurgical approaches that might be applied to processing the concentrates derived from the polymetallic deposits of the Lake Superior District. Currently existing technologies fall into two broad categories. Those involving autoclave methodologies at pressures of several atmospheres and operating temperatures in excess of 100^0 C. and those not involving autoclaves and operating at ambient pressures and temperatures lower than 100^0 C. Individual technologies will be discussed briefly in broad general terms. Where patented technologies are involved references to the appropriate owners are provided. A relevant quotation from Hatch Consulting Engineering:

"Hydrometallurgy has evolved, both as an alternative to and a complementary method for the pyrometallurgical recovery of metals. It eases the recovery of value metals from ores containing impurities that can produce high-melting-point slags. It also makes it economically viable to recover metals on a smaller scale and from sulfide ores without producing acid. Hydrometallurgy provides for a more direct metal-recovery route, reducing working capital and enabling new methods that can recover metals now in scarce supply.

Through research and development, hydrometallurgical processing has made steady progress. Now, it makes better use of resources like water, energy, and available land, greatly improving both capital and operating costs and reducing atmospheric emissions."

Hydrometallurgy (hatch.com)

All of the various hydrometallurgical process discussed in the following paragraphs are much less capital intensive and operate with far less environmental impact than the historical smelting pyrometallurgical route of concentrate treatment. In general terms autoclave plants are normally more capital intensive and require greater operational sophistication, than ambient pressure plants.

Some unpublished economic studies have indicated that a potentially attractive economic pathway to treatment of some of the polymetallic ores of the Lake Superior District might involve a two-concentrate route with the copper rich concentrates being shipped to existing smelters and the nickel dominant concentrates being subject to hydrometallurgical processing. Preliminary metallurgical studies have indicated that for at least some of the known deposits it will be difficult to generate a concentrate with sufficiently attractive nickel grade for easy sale to existing smelters. Economic modeling requires more study.

Another possible attractive area of hydrometallurgical processing is the potential for direct production of salable battery, including flow battery, precursors and other marketable chemicals and compounds without the need to proceed to nickel or cobalt metal first.

Brief hydrometallurgical process description and limited discussion. The bulk of the information on these technologies was derived from the company websites, published papers, and email or verbal communications with company personnel, relevant links are provided.

ALBION PROCESS™

Albion Process™ (glencoretechnology.com)

The Albion Process™ is a demonstrated fine grinding and leach technology for the treatment of refractory arsenopyrite/pyrite gold and complex base metal resources. It incorporates the IsaMill™ fine grind technology and conventional atmospheric oxidative leaching.

"The Albion Process is a highly attractive process to treat refractory sulphide minerals to recover valuable metals housed in the sulphide lattice. The process consists of ultrafine grinding of the mineral, followed by oxidative leaching at atmospheric pressure in open tanks. The flowsheet utilises existing, commercially proven technology in its unit operations. The Albion Process is therefore an important technical breakthrough."

"The process can be applied to the recovery of base metals such as copper, zinc, nickel and cobalt from sulphide concentrates." It also is quite amenable to the recovery of precious metals from refractory concentrates. A good Randol technical paper which compares the costs of Albion leaching to Pressure oxidation and bacterial oxidation is linked. (www.albionprocess.com/en/downloads/TechnicalPapers/Benefits-of-Using-the-Albion-Process-for-a-North-Queensland-Project-Randoll-2006-(3).pdf)

The Albion Process uses a combination of ultrafine grinding and oxidative leaching at atmospheric pressure to work. It also tolerates a more variable feed and lower grade than other processes, according to Glencore Technology, meaning it can make some projects feasible and profitable where alternative technologies could not. The sulphides in the feed are oxidised and valuable metals liberated, with the economic metals recovered by conventional downstream processing. Test work requires only small sample masses with no pilot plant, according to Glencore Technology.

The process has produced high recoveries in refractory gold and in base metal concentrates at the six Albion Process plants in commercial operation (in 2020) across the globe, according to the company.

The Albion patented technology was developed by and is controlled by Glencore Technology.

CESL PROCESS

(www.teck.com/products/technology-and-innovation/cesl)

CESL one of Teck's technology centers oversees the development and commercialization of Teck's proprietary CESL hydrometallurgy and has developed hydrometallurgical processes for the production of copper and nickel cathode from their respective concentrates, the economic recovery of cobalt, PGE, gold and silver from the residues, and the removal of copper from molybdenum. CESL is a proprietary suit of hydrometallurgical technologies developed by Teck.

CESL is an autoclave-based technology which has been studied in numerous campaigns both public and nonpublic for its application to processing of concentrates derived from the disseminated sulphide ores of the Midcontinent Rift. Concentrates studied have been derived from Teck's Mesaba deposit, Twin Metals Maturi Deposit as well as other Lake Superior deposits. Published and nonpublic data indicate that the CESL technologies are very well suited for the processing of concentrate derived from the disseminated ores of the Lake Superior District.

PLATSOL™

(www.polymetmining.com)

Platsol is an autoclave-based technology originally developed for a predecessor of Polymet. Polymet controls the currently permitted NorthMet disseminated copper nickel deposit located within the Duluth Complex of Minnesota.

Published studies over about two decades, including Polymet's most recent feasibility study continue to highlight the suitability of Platsoltm for processing of concentrate derived from the NorthMet orebody. And, by extrapolation, numerous mineralogically similar deposits in the Lake Superior District

PRO:
[Process Research Ortech Inc. (processortech.com)]

The PRO process consists of a series of hydrometallurgical technologies developed by Process Research Ortech Inc. The PRO Mixed Chloride Leaching process operates at ambient pressure and temperatures of less than 100C. PRO processing has been piloted on several occasions for metal or industrial minerals production. PRO technology appears to be highly amenable to generating marketable metals and compounds from the polymetallic ores of the Lake Superior District.

The PRO Mixed Chloride technology has been, very successfully, independently piloted on Lake Superior Oxides, as reported by the Natural Resource Research Institute (NRRI) "Pilot-Scale Demonstration of Ilmenite Processing Technology" NRRI-TR-2017-25.pdf (umn.edu)

VALE LONG HARBOR
[(www.vale.com/canada/EN/aboutvale/communities/long-harbour/Pages/default.aspx)]

The Vale Long Harbor hydrometallurgical plant and operating methodologies will only be discussed in the most general detail in this paper. This is due to the lack of availability of reliable public information as to capital, operational and technical data. Long Harbor involves autoclave processing technology. From the Vale website:

Snapshot of Operations

"The Long Harbour Processing Plant (LHPP) began operations in 2014 and currently employs approximately 500 people, the vast majority of whom are from Newfoundland and Labrador. The LHPP and the Voisey's Bay mine and concentrator are an integrated operation. Nickel concentrates from Voisey's Bay are shipped to Long Harbour to be processed into finished nickel and associated copper and cobalt products.

In designing the LHPP, Vale sought to develop a new, more efficient process for processing Voisey's Bay concentrate than traditional smelting and refining. In advance of commercial plant construction, an extensive $200 million R&D program was launched to explore the feasibility of hydrometallurgical (hydromet) technology. Based on the success of this program, a decision was made to build a commercial scale hydromet facility in Long Harbour."

It is the opinion of the author, based on the limited publicly available data that the capital intensity of the Vale (Inco) plant was and is, substantially in excess of other potential hydrometallurgical technologies considered for the treatment of Lake Superior derived polymetallic concentrates.

HYDROMET TECHNOLOGY

"The nickel industry worldwide has traditionally smelted concentrates produced from nickel, copper and cobalt sulphide ores to make an intermediate sulphide product called matte. Hydrometallurgy has been used for refining the matte to produce high purity nickel, copper and cobalt for the market. Thus, traditional production of these metals has occurred in two steps: smelting and refining"Hydrometallurgy, or "hydromet" for short, is a metal processing technology that uses a chemical process combining water, oxygen or other substances in a pressurized or other vessel to dissolve a metal from its ore, concentrate or an intermediate product (such as matte).

The new hydrometallurgical process that Vale developed will process the nickel concentrate directly to metal products without first having to smelt the concentrate.

The concentrate will be processed in a pressurized vessel where it will react with oxygen and sulphuric acid to produce an impure solution of nickel, cobalt and copper. This solution will pass through a number of chemical purification steps ending with removal of impurities and separation of nickel, copper and cobalt. The copper and cobalt will be recovered as by-products. The nickel will be recovered by electrolysis as high quality electronickel product suitable for market. The waste solids from the

process will be neutralized with lime and will be deposited in a specially designed disposal facility. All water leaving the plant, including precipitation run-off water, will be processed to remove contaminants.

Because the hydromet process used at Long Harbour eliminates the requirement for smelting concentrate, it has an economic advantage over the traditional two-step smelting and refining process. The process will also yield more of the valuable cobalt which is lost to a great extent in the smelting process.

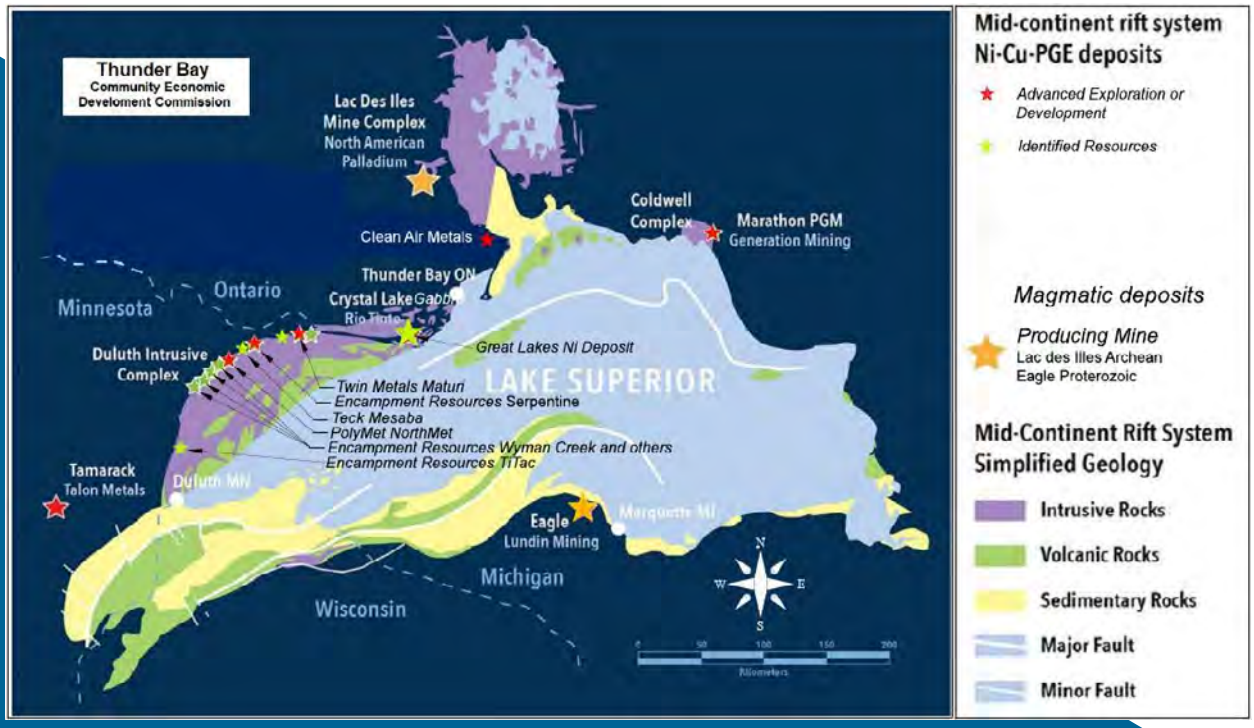
This type of hydrometallurgical process is not entirely new. Many operations, some of them in Canada, have used hydrometallurgical processes for years for extraction of zinc and copper from sulphide concentrates. However, it was not until the 1990s that an acid-oxidative hydromet technology was developed to process nickel sulphide concentrates". As quoted from the Vale website. (www.vale.com/canada/EN/business/mining/nickel/vale-canada/long-harbour/Pages/Hydromet-Technology.aspx)

COPPER NICKEL DEPOSITS OF THE LAKE SUPERIOR DISTRICT

The map below will provide an overview picture of the major deposits and resources of the Lake Superior District. A very accurate map of the Duluth Complex showing partial property control and polymetallic deposits can be accessed via the following link. (files.dnr.state.mn.us/lands_minerals/mpes_projects/mnmin2017_coppernickel.pdf)

It should be noted that the map only shows Federal and state leases and lands and does not go into detail as to the lease status of privately owned lands and mineral rights. In several cases private properties have been consolidated with state and Federal lands, by the various companies

MAP OF THE POLYMETALLIC DEPOSITS AND OCCURRENCES OF THE LAKE SUPERIOR DISTRICT



POLYMETALLIC MINES AND PROSPECTS OF LAKE SUPERIOR

LAC DES ILES MINE:
Impala Canada – Investor Relations

A currently operating mine. Located in Northwestern Ontario, in close proximity to Thunder Bay. This mine was recently acquired by Impala Canada. A moderate sized current underground operation. The major pay metal is palladium, but the mine also produces some copper, nickel, other PGE, and gold. Ships sulphide concentrates for smelting and further refining. Significant exploration potential exists for development of additional resources on both mine contiguous and noncontiguous properties. As of early 2015 Reserves were stated at 20.4 million tonnes at a grade of 2.1 grams per tonne pd. And total resources of 71.2 million tonnes at 2.0 grams pd tonne. The ore contains minor amounts of copper , nickel, and other precious metals.

EAGLE MINE:
Eagle | Lundin Mining Corporation

Currently the only primary nickel mine located in the US. A high-grade underground mine exploiting two relatively small nickel, copper, cobalt and PGE underground orebodies. Eagle has a limited projected life span (approximately 2025). And since the company apparently has essentially ceased exploration, no potential for developing additional resources. Mine is owned by Lundin Mining Corp. Ships concentrate for smelting and further processing. The company states current reserves and resources at 3.28 million tonnes at 1.9% copper and 2.4% nickel with cobalt and precious metal credits

ACTIVE ADVANCED DEVELOPMENTS

MARATHON PROJECT:
Events | Generation Mining Limited (genmining.com)

The Marathon project is a large copper palladium deposit under development by Generation Mining. Generation Mining is developing the 100%-owned Marathon Palladium-Copper project in Northwestern Ontario. The project is located northeast of Marathon Ontario and west of the gold mining center of Hemlo. The exploration upside for the development of additional resources and reserves in considered to be high. The latest Technical Report estimate for the main Marathon deposit is approximately 180 million tonnes at a grade of 0.20% cu and 0.56 grams tonne palladium, the deposit contains minor amounts of platinum and gold, but very little nickel. Current global property resources in all categories are estimated at around 275 million tonnes

MATURI PROJECT:
Twin Metals Minnesota (twin-metals.com)

The Maturi project is currently owned by Twin Metals Minnesota a subsidiary of Antofagasta. Currently the Maturi resource of Twin Metals Minnesota is under active development. The long-term objective is to establish a long-life underground operation. Total property resources in four deposits in all categories are estimated to exceed 2.5 billion tonnes. Proposed mine reserves have not been published. There are substantial geologic potentials to define additional copper nickel resources on the present Twin Metals property and on adjacent properties to the east. Current potential resource expansion upside is roughly estimated to exceed 2 billion tonnes, resulting in a total potential in excess of 5 billion tonnes, at an 0.30% cu cutoff. Duluth Metals-Twin Metals 2014 AMEX Resource calculations: www.prnewswire.com/news-releases/duluth-metals-announces-sedar-filing-of-updated-amec-resource-study-on-twin-metals-254946451.html

Technical Report filed on SEDAR April 11, 2014, under Duluth Metals.

NORTHMET PROJECT MINE:
[PolyMet | The Next Generation of Mining in Minnesota (polymetmining.com)]

"PolyMet will be the first to commercially mine copper, nickel and precious metals in the world-class **Duluth Complex**. Located within Minnesota's Mesabi Iron Range, the NorthMet project features significant assets made up of the deposit itself and infrastructure including existing rail, roads, utilities, and established supplier networks. The NorthMet deposit will be mined by open pit methods to a depth of approximately 700 feet below surface." From the PolyMet website.

The operating permits required for a NorthMet mine were issued in late 2018 & 2019 and have been the subject of prolonged litigation ever since. PolyMet has prevailed in the resolved litigation. But several suits remain to be resolved and timing of actual development remains uncertain.

The proposed NorthMet operation would be a long-lived open pit mine feeding ore into the nearby existing and refurbished Erie mill. Known resources are believed to aggregate about 1.25 billion tonnes. Additional resource expansion is constrained by property but considered to be geologically permissive. The overall resource grade is approximately 0.235% copper and 0.07% nickel with minor amounts of cobalt and precious metals.

PolyMet's feasibility study proposed an initial stage of producing a concentrate for sale to existing smelting facilities with a later stage of self-financed hydrometallurgical processing.

DEFINED RESOURCES NOT CURRENTLY UNDER ACTIVE DEVELOPMENT

GREAT LAKES NICKEL DEPOSIT:
[www.geologyontario.mndm.gov.on.ca/mndmfiles/mdi/data/records/MDI52A04SE00026.html]

This deposit is hosted in the Crystal Lake Gabbro about 35 km southwest of Thunder Bay ON. The deposit has been estimated to contain in excess of 40 million tonnes of ore at a grade of about 0.344% Cu, 0.183% Ni, 0.0043 opt Pt, 0.021 opt Pd, 0.0007 opt Rh, 0.003 opt Au, 0.096 opt Ag. The potential to increase the size of this deposit with additional exploration is considered high. The deposit is currently believed to be controlled by Rio.

MESABA DEPOSIT:
[www.teck.com/media/2017-Investor-and-Analyst-Day-Overview-and-Strategy.pdf]

Pages 1 and 2 Mesaba in Teck's Investor's Day Overview and Strategy presentations 2017. This presentation contains considerable general information as to the application of CESL hydrometallurgy to the very large Mesaba Deposit. From other sources it is believed that the Mesaba deposit (located In Minnesota) has a global resource in the range of 3 billion tons at about 0.40% copper and ≥0.10% nickel with minor amounts of cobalt and other metals and includes the very much smaller (4 to 5 million tonne) but high-grade Local Boy deposit. Teck has been internally studying the Mesaba deposit for several years but has maintained a quite low public profile.

EAGLES NEST:
[Noront Resources]

This is a highly advanced exploration project with no infrastructure. Eagles Nest is located in the Ring of Fire about 500 km northeast of Thunder Bay. It is currently regarded as beyond the scope of this paper as its location is exterior to the Lake Superior District. It is briefly mentioned as it is administered in the Thunder Bay Administrative District.

SERPENTINE DEPOSIT:

This, Minnesota, copper nickel deposit is controlled by a private company Encampment Resources. Serpentine has an estimated resource of over 400 million tons." Geology and Mineralization of the Serpentine Copper-Nickel Deposit" Zanko, Lawrence M; Severson, Mark J; Ripley, Edward M. (1994). Geology and Mineralization of the Serpentine Copper-Nickel Deposit. University of Minnesota Duluth. Retrieved from the University of Minnesota Digital Conservancy, https://hdl.handle.net/11299/188521. The Serpentine resource is located immediately proximal to Cliffs operating Peter Mitchell iron mine

Encampment also controls other properties with significant exploration potential, some with already identified resources, within the Duluth Complex.

ADVANCED EXPLORATION PROJECTS

CLEAN AIR METALS:

Home | Clean Air Metals Inc.

This company has announced a preliminary resource but is still in the active exploration stage of development of the Thunder Bay North project. Preliminary resources all categories: Clean Air Metals Announces a Mineral Resource for the Thunder Bay North Project including a total Indicated Resource of 16,285,396 tonnes at an average grade of 3.5 g/t PdEq containing 1,834,158 ounces PdEq and a total Inferred Resource of 9,852,138 tonne. Exploration work performed in 2021 indicates that the Maiden Resource will be subject to a significant increase in the fairly near future

From a Clean Air press release dated December 1, 2021: Clean Air Metals Announces a PEA of the Current and Escape PGE-Cu-Ni Deposits of the Thunder Bay North Project, with post-tax NPV5 of C$378m, IRR 29.8% The full press release may be accessed at: 2021 News Releases | Clean Air Metals Inc.

ENCAMPMENT RESOURCES

This private company controls several highly prospective Duluth Complex advanced exploration targets, with resources, some of which have been the subject of recent drilling. These include Wyman Creek, which is located in close proximity to the Polymet Erie mill facility. Additional resources controlled by Encampment include Skibo, Section 22, South Filson Creek, and several other attractive deposits.

TAMARACK PROJECT:

www.talonmetals.com

Talon Metal's Tamarack project is currently considered a very promising advanced exploration project in Minnesota. It is located in a separate intrusion west of the Duluth Complex. The developing massive and net textured nickel rich resources appear to be permissive for an underground mining operation comparable to Eagle. Substantial additional resource delineation and development will be required. Talon is considering Albion Technology in its preliminary economic evaluations of Tamarack

Early-stage exploration projects such as Palladium One's Tyko project. Home | Palladium One Mining Inc. (palladiumoneinc.com) are beyond the scope of this paper and will not be further discussed.

OXIDE RESOURCES OF THE LAKE SUPERIOR DISTRICT

There are economically significant resources of oxide minerals within the Lake Superior District a number of those minerals and their concentrates derived from the Lake Superior District would be amenable to processing, into salable form, by hydrometallurgical methodologies by a plant located at Thunder Bay. Explore Minnesota Titanium. Explore Minnesota - Titanium (state.mn.us) has additional information as to the Oxide resources of the Duluth Complex.

FINAL THOUGHTS AND RECOMMENDATIONS

It is hoped that this paper will stimulate industry consideration of the numerous economic implications of the current hydrometallurgic revolution in mineral processing technology. Based on substantial research and analysis it is considered extremely likely that a hydrometallurgical approach to concentrate processing, located in the municipality of Thunder Bay would compare favorably, in economic terms, both CAPEX and OPEX, to the customary pyrometallurgical approach of selling concentrate to an existing smelter complex. From an ESG standpoint it is likely that a hydrometallurgical approach to processing would be perceived as a positive by the investing and financial community.

Some specific recommendations for industry consideration.

- Consider the economic potential for adding a study of hydrometallurgical technologies to any developmental studies

- All of the referenced hydrometallurgic companies have the capacity and have informally indicated a willingness to perform bench level suitability studies on Lake Superior derived concentrates. If initial Bench Studies are satisfactory and, it is anticipated they will be based on current information, it would be quite simple to proceed and integrate hydrometallurgy into Preliminary Economic evaluations or full Feasibility level studies.

- Consider the potential advantages, in terms of individual company capital requirements in the development of a centralized processing facility to serve two or even more mines and companies. Just avoidance of the capital cost of duplicate facilities and infrastructure would be of substantial capital cost benefit.

- One large plant is normally significantly less capital intensive than a number of smaller plants with the same aggregate capacity.

- Consider multicompany concentrate studies with the objective of optimizing a centralized plant to treat the concentrates to be derived from multiple deposits.

- Make use of the facilities and contacts that the Thunder Bay Community Economic Development Commission CEDC has available to assist industry **www.gotothunderbay.ca**

- For mining and mineral assistance and Thunder Bay regional information the CEDC link is: **Mining - CEDC (gotothunderbay.ca/mining)**