



SUPERIOR LAKE
RESOURCES

ASX ANNOUNCEMENT

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SUPERIOR COMMENCES ENGINEERING STUDY FOR THE SUPERIOR LAKE PROJECT

HIGHLIGHTS

- Tendering process for the appointment of the preferred engineering provider has been completed
- Scope of work for the preliminary engineering program has been finalised with activities planned to commence shortly
- The results of the engineering study will allow the Company to confidently propose an effective re-start strategy for the Superior Lake Project
- Review of the permitting and licencing requirements has started to ensure studies are aligned with regulatory requirements

Superior Lake Resources Limited (“Superior” or the “Company”) is pleased to announce the commencement of the Stage 1 preliminary engineering study for the re-development of the Pick Lake and Winston Lake mines, together the Superior Lake Project (“the “Project”).

David Woodall, Chief Executive Officer, commented: “this program of work will provide the necessary information to allow the Company to develop a re-start strategy for the Project that will have a solid basis and provide confidence in Superior’s abilities to bring the mines back into operation in the most efficient manner”

Preliminary Engineering Study

Three engineering companies were asked to provide proposals based on an initial scope of work generated by the Company. The scope included the following key programs.

- A dewatering strategy for the mines including cost and schedule estimates;
- A high-level cost estimate to re-equip the mine in preparation for start-up;
- A high-level cost estimate for the installation of a new mill / concentrator and associated infrastructure;
- A schedule of permitting and licensing requirements for the development and start-up of the mines.

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All three engineering companies provided strong proposals with Nordmin Engineering Ltd ("Nordmin") being selected as the preferred consultant for the work. Nordmin's head office is located in Thunder Bay and this combined with a methodology and philosophy closely aligned to Superiors played an important part in their selection. It was also noted that a number of Nordmin's personnel have had previous experience at Winston Lake during either the construction or operating stages and this should provide a valuable source of additional information on the Project.

The purpose of the preliminary engineering study is to allow the following concepts to be investigated and considered as part of the overall re-start strategy:

Mine Dewatering: options to dewater the mine in its entirety or partial dewatering such that either Pick Lake or Winston lake can be dewatered independently depending on the most likely source of the first production.

Mine Re-equipping: establishment of a preferred mining methodology followed by options to re-establish the infrastructure either using the previously installed design or creating a new access to Pick Lake with consideration also given to also extending the Winston shaft so as to potentially access more material at depth.

Mill: a capital cost estimate will be generated based on the previous mill design and throughput (1000tpd), with a sensitivity analysis on the impact of throughput on final capex also being determined. Costs associated with the required infrastructure to operate asset will also be developed.

Licensing: the permitting and licencing requirements from the Ontario provincial and Canadian federal regulator to re-start the operation will be investigated with a schedule and cost estimate developed.

Using the outcomes from these studies, in conjunction with the updated resource and exploration targets that will come from the new 3D geology model that is also being produced as part of the Stage 1 program, will allow the Superior team to develop a preferred restart plan that can be used as the basis for a combined Pre-feasibility / Feasibility Study that will occur as the next stage.

Proposed Timelines

The preliminary engineering study will commence shortly with the delivery of the various studies planned as follows.

| Task Element Milestone | Completion Date |
|---|------------------------|
| Kick-off meeting and site visit | Mid May, 2018 |
| Mine De-watering Study Draft Report | Mid June, 2018 |
| Mine Re-Equipping Study Draft Report | Early July, 2018 |
| Process Plant Design Study Draft Report | Mid July, 2018 |
| Permitting Review and Overall Study Report Draft Submission | End July, 2018 |
| Final Report Submission | August, 2018 |

The preferred concept for the re-start strategy will be developed after the final report submission, after which the project will move directly into Stage 2.

Stage 2: the combined Pre-feasibility Study / Feasibility Study will target the following objectives:

- A minimum Measured and Indicated Mineral Resource of 2.0M tonnes at 15.0% zinc equivalent
- A preferred mine development strategy that optimises the commencement of production
- A preferred project go-forward case based on an optimised production rate and operating strategy that maximises value
- Advancement of the environmental study work such that the permitting and approvals process required to execute the project is de-risked
- Advancement on off-take and financing arrangements

The Stage 2 work is envisaged to take approximately 12 months to complete

Project Background

The Pick and Winston Lake Projects are located in the Pays Plats Lake Area of Ontario close to the shores of Lake Superior and approximately 150 kilometres east of the city of Thunder Bay (see Figure 1). The deposits are within the northern Wawa terrane in the Archean Superior Province. They are hosted in the Winston Lake Greenstone Belt, between the Shebandowan Greenstone Belt located to the west and the Manitouwadge Greenstone Belt to the east. All three belts have been notable base metal past producers:

- Winston Lake mine, past production of 3.3 MT at 14.1% Zn and 1.0% Cu
- Pick Lake mine past production of 173,000t at 10%Zn and 0.7%Cu
- Geco mine, past production of 58 MT at 3.5% Zn and 1.9% Cu



Superior Lake Resources (previously Ishine Resources) entered into an option agreement on 4 December 2017 to acquire Superior Mining Pty Ltd, which has a 70% initial indirect interest in the Pick Lake Zinc Project which is held by Ophiolite Holdings Pty Ltd, an Australian registered company (see ASX announcement dated 6 December 2017).

Further to this Superior Lake entered into an option agreement in February 2018 to acquire 70% of the Winston Lake Project (via its 70% interest in Ophiolite Holdings Pty Ltd) which lies adjacent to the recently acquired Pick Lake Project (see ASX announcement dated 21 February 2018).

This agreement signifies the first time since the cessation of mining in 1998 that the Winston Lake and Pick Lake deposits have been combined into a single project

allowing the integration of all available data from both areas. The inclusion of the Winston Lake patented claim area also allows any future development to utilise the existing infrastructure and ensures any new infrastructure can be located on previously occupied land.

The Pick Lake Project area comprises 47.5km² of prospective ground with a further 4.5km² within the Winston lake Project area. Combined, this covers a large portion of the Winston Lake Greenstone Belt and will allow a comprehensive exploration program to be undertaken that encompasses areas of highly prospective geology.

Previous owners, Minnova commenced mining of Winston Lake in 1988 and mined approximately 3.3 million tonnes grading 14% zinc, 1% copper, 1.0g/t gold and 30g/t silver over an 11-year period.

During this period separate zinc and copper concentrates were produced that were shipped to various smelters both locally and internationally. Approximately 900Mlbs of zinc, 53Mlbs of copper and over 50,000 ounces of gold were produced with reported recoveries of 95% (zinc) and 78% (copper).

1993 saw the commencement of a 2,200m drift to mine the nearby Pick Lake deposit through the mine workings at Winston Lake. The upper Pick Lake deposit was the focus of the mining activity, with the lower Pick Lake deposit virtually untouched when the mine closed in 1998 due to low zinc prices.

Pick Lake foreign non- JORC (2012) compliant mineral resource

Doiron et al. (1997) presented a resource estimate of 1.2 Mt at 15.9 % Zn, 0.86 % Cu, 38 g/t Ag and 0.46 g/t Au for the Pick Lake lower zone and 0.26 Mt at 11.21 % Zn, 0.77 % Cu, 31.5 g/t Ag and 0.65 g/t Au for the Pick Lake upper and middle zone (Table 1). Published reserves (including 20% dilution) for Pick Lake by Inmet as of January, 1996 were 124,800 tonnes at 14% Zn and 0.9% Cu for the upper zone and 1,200,000 tonnes at 19% Zn and 1.2% Cu for the lower zone. By the time mining ceased at the end of 1998, the Proven and Probable reserves were reported as 598,000 tonnes at 21.2% Zn, 1.0% Cu and the dilution had increased to 33%.

The reference to tonnes and grade of the Pick Lake Zinc Project is foreign in nature and not reported in accordance with the JORC Code 2012. A competent person has not done sufficient work to classify the resource estimate as mineral resources or ore reserves in accordance with the JORC Code 2012. It is uncertain that following evaluation and/or further exploration work that the foreign resource estimates of mineralisation will be able to be reported as mineral resources or ore reserves in accordance with the JORC Code 2012.

Table 1: Summary of the Pick Lake foreign non- JORC (2012) compliant mineral resource calculated by Inmet (Doiron et al 1997)

| Deposit | Tonnes | Grade | | | | Dilution (%) |
|--------------------------|--------|-------|------|-------|-------|--------------|
| | (Mt) | %Zn | %Cu | g/tAg | g/tAu | |
| Pick Lake Upper & Middle | 0.26 | 11.21 | 0.77 | 31.5 | 0.65 | 30 |
| Pick Lake Lower | 1.2 | 15.9 | 0.86 | 38 | 0.46 | 25 |
| Total* | 1.46 | 15.06 | 0.84 | 36.84 | 0.49 | |

*Note: it is underdetermined what percentage of these resources are remaining

Under ASX Listing Rule 5.12 (LR 5.12), an entity reporting foreign non- JORC (2012) compliant mineral resource estimates in relation to a material mining project must include all of the information shown in LR5.12. Superior provided this information in its ASX announcement "Pick Lake / Winston lake Zinc Project Exploration Targets Identified" released on 6th March 2018.

Superior has acquired the historic data from the vendors. Following compilation and review of this data Superior will commence a program to fully test the areas peripheral to the main Winston mining area with the view to extending the resource along the plunge directions.

A second program of exploration focused on 'brownfield' type targeting will focus on VMS style mineralisation within the Wawa sub-Province and is aimed at locating VMS horizons within the Archean package of volcanic rocks.

The geochemistry and stratigraphy observed over the extent of the project area within the Wawa sub-Province is consistent with a rifted arc to back-arc setting. The known VMS deposits are tightly constrained with early rifting and the felsic rocks hosting the deposits have been age dated at 2720Ma (2720 million years ago).

A number of geophysical techniques will be used that have the ability to directly detect massive sulphides within this 'marker horizon' due to the physical property contrast between host rock and ore. Also, the use of soil sampling with multi-element assaying has the potential to locate a distal geochemical signature of VMS style mineralisation beyond historic identification of zones of sodic-depletion

Competent Person Statement

The Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the 'JORC Code') sets out minimum standards, recommendations and guidelines for Public Reporting in Australasia of Exploration Results, Mineral Resources and Ore Reserves.

The Information contained in this announcement is an accurate representation of the available data and studies for the Pick and Winston Lake Projects.

The information contained in this announcement that relates to geology and exploration results is based, and fairly reflects, information compiled by Mr Alfred Gillman, who is a Fellow and Chartered Professional of the Australian Institute of Mining and Metallurgy. Mr Gillman is a consultant to Ophiolite Holdings Pty Ltd. Mr Gillman has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Gillman consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears.

All parties have consented to the inclusion of their work for the purposes of this announcement. The interpretations and conclusions reached in this announcement are based on current geological theory and the best evidence available to the authors at the time of writing. It is the nature of all scientific conclusions that they are founded on an assessment of probabilities and, however high these probabilities might be, they make no claim for absolute certainty. Any economic decisions which might be taken on the basis of interpretations or conclusions contained in this announcement will therefore carry an element of risks.