ASX Announcement
ASX: SUP
20th March 2019
superiorlake.com.au

SUPERIOR LAKE RESOURCES

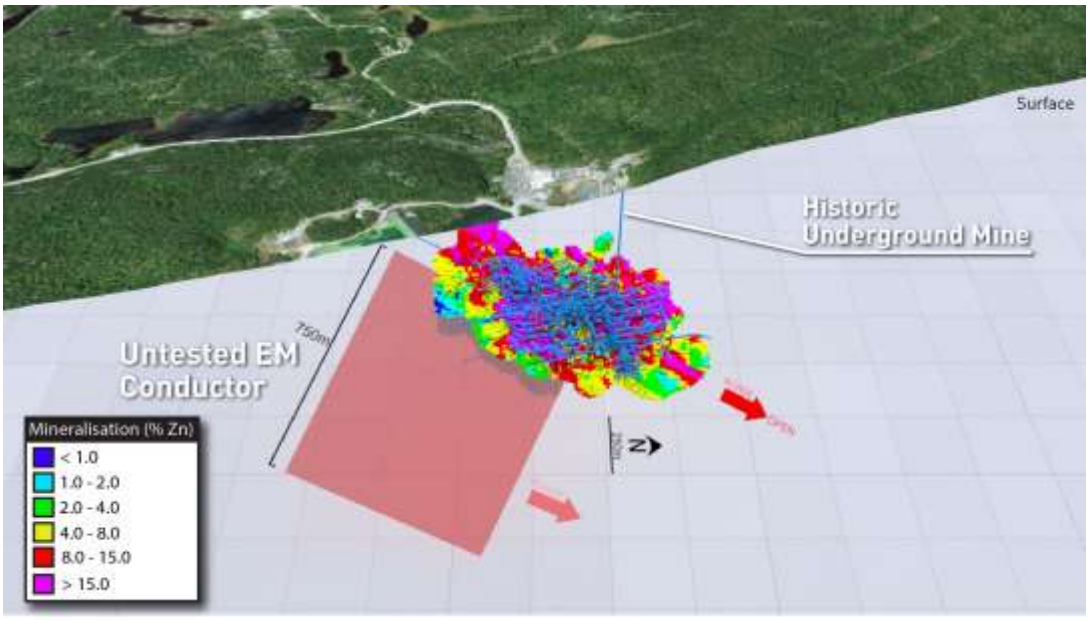
Major geophysics anomaly identified adjacent to Winston Lake deposit and existing UG infrastructure

Highlights

- **Major mineralised conductive anomaly identified adjacent to Winston Lake deposit**
  - **Initial electromagnetic "test" confirmed known Pick Lake deposit**
- **Discovered as part of the brownfields exploration program which focused on high priority targets identified in early 2019**
- **The brownfields exploration program focused on a small 9km² area surrounding the current defined deposits and existing infrastructure – represents only 5% of total landholding**
- **This discovery follows the 10% increase in the JORC resource to 2.35 Mt @ 17.7 % Zn, 0.9% Cu, 0.38 g/t Au and 34 g/t Ag[1] (ASX announcement 7 March 2019)**
- **Further results from the geophysics program expected later this month**

Superior Lake Resources Limited (ASX: SUP) ("Superior Lake" or the "Company") is pleased to announce the identification of a large mineralised conductive anomaly (Figure 1 below) adjacent to the Winston Lake deposit at the Company's Superior Lake Zinc Project located in Ontario, Canada. This major anomaly, located in the footwall of the Winston Lake deposit was identified from an ongoing geophysics program, which is targeting the seven major areas for follow up that were identified in the Company's structural and lithogeochemical program.

Figure 1: Winston Footwall Geophysics Anomaly (can you expand this a bit?)



The Company's brownfields exploration strategy has specifically targeted a localised 9km² area which surrounds the current resource and historical mining operation. This area was targeted as VMS deposits,

[1] ASX announcement 7 March 2019. Superior Lake confirms that it is not aware of any new information or data that materially affects the information included in the announcement of 7 March 2019 and that all material assumptions and technical parameters underpinning the Mineral Resource estimate in the announcement of 7 March 2019 continue to apply and have not materially changed.

like Winston Lake and Pick Lake, typically occur in clusters. Despite this, limited historical exploration work had been completed in the area and no modern exploration applied, including during the 1980s and 1990s, when the Project was in production.

This is the first significant exploration program at the Project in more than 20 years, and the first application of modern exploration techniques to assist in refining future drill targets. Further results from the geophysics program are expected in the coming weeks.

Superior Lake Chief Executive Officer David Woodall commented:

"The identification of a new major anomaly is a significant development for the Company and vindicates the measured and structured approach taken with our brownfields exploration program. Whilst drilling in the future is required to test whether this is as an economic deposit, given the work we have completed, and our knowledge of VMS deposits, this result gives us confidence in the technology and our exploration process.

Modern exploration technologies, most notably electromagnetics (EM), has advanced significantly during the past three decades and is recognised as an excellent tool in identifying VMS deposits. The recent program confirmed the ability of EM to detect mineralisation at the Project as Pick Lake, a known deposit, was used as a test case, with both Down the Hole Transient Electromagnetics and Fixed Loop Electromagnetics, clearly identifying and defining the deposit.

This geophysical work, together with the structural and lithogeochemical program, has enhanced *our exploration program and given us confidence in making an additional commercial discovery in the future.*

While the Company remains focused on delivering the Definitive Feasibility Study by mid-2019, this result demonstrates the exploration potential at Superior Lake and the prospect of adding further resources In the future.

Brownfield Exploration Strategy

The brownfield exploration program, which commenced in 2018, has incorporated multiple modern exploration techniques, many used for the first time at the Project, and targeted only a small portion (9km^2) of the total Project area (175km^2). This area was selected due to its high prospectively as it hosts two known high-grade VMS deposits (Winston Lake and Pick Lake), whilst only limited historical exploration has been completed.

This program has included the following.

1. Structural and lithogeochemical program - seven targets identified
2. Drill program and Down the Hole Transient Electromagnetics ("DHTEM") - Pick Lake deposit
3. High powered, Fixed Loop Electromagnetics ("FLTEM") geophysics program testing identified and unknown targets.

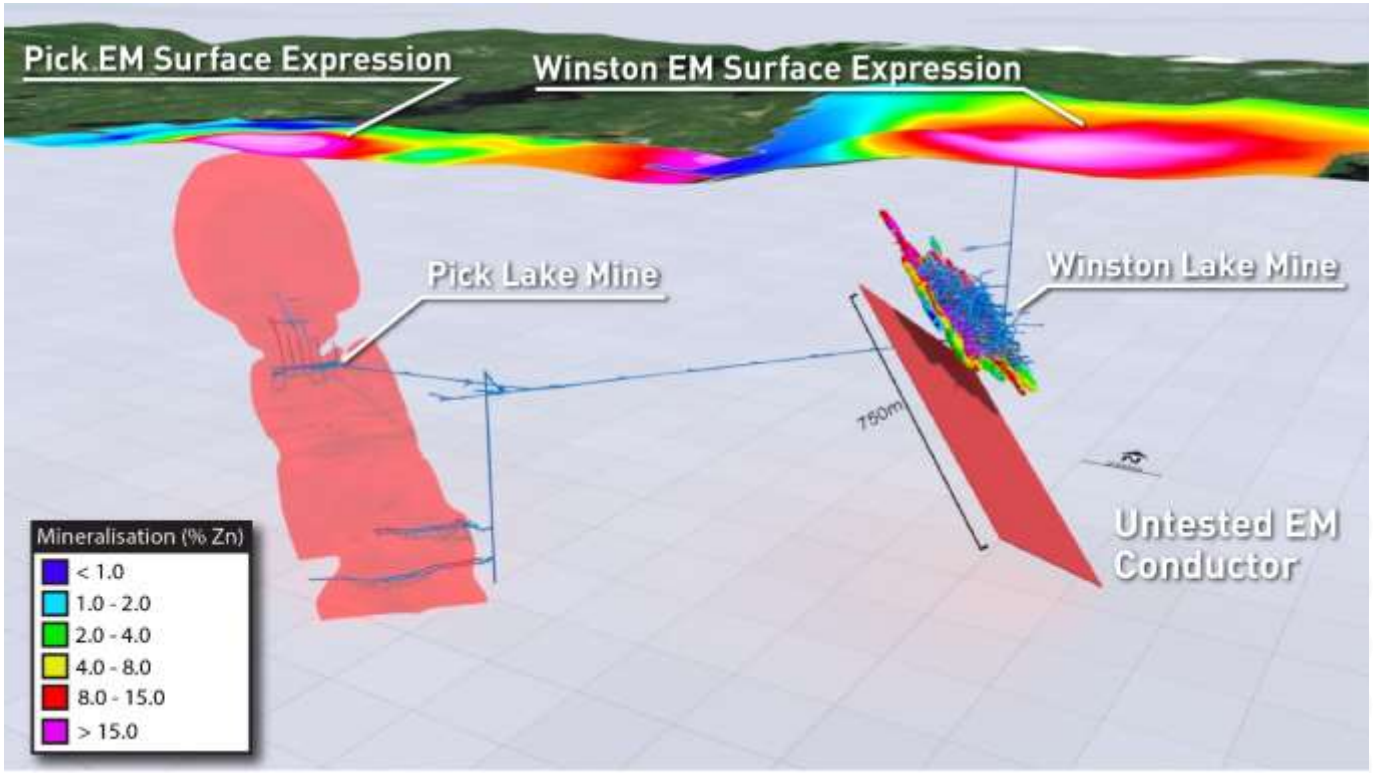
To date, this program has been a success with the first drill program in more than 20 years delivering a 10% increase to the size of the resource (2.35 Mt at 17.7 %Zn, 0.9% Cu) (see footnote 1, page 1). Following the drill program, a DHTEM program was completed at Pick Lake. As Pick Lake is a known deposit, this was simply a "test case" to confirm EM could successful identify the deposit. The results were positive as Pick Lake was clearly identified.

The DHTEM program was subsequently followed by a surface FLTEM program, incorporating 5 transmitting loops over a 3km x3km area using state of the art transmitter and sensor technology.

Loop 1 of the 5 Loop program targeted the Pick Lake area (Figure 2 below). The Pick Lake deposit was again clearly identifiable, which provided further confidence in electromagnetics as a highly appropriate exploration technique to assist in detecting new mineralisation.

Loop 2 and Loop 3 of this program identified a new major conductive anomaly adjacent to the Winston Lake deposit in the footwall. This anomaly is significant as it measures 750m x 500m.

Figure 2: Comparison between untested EM conductor and known Pick Lake deposit

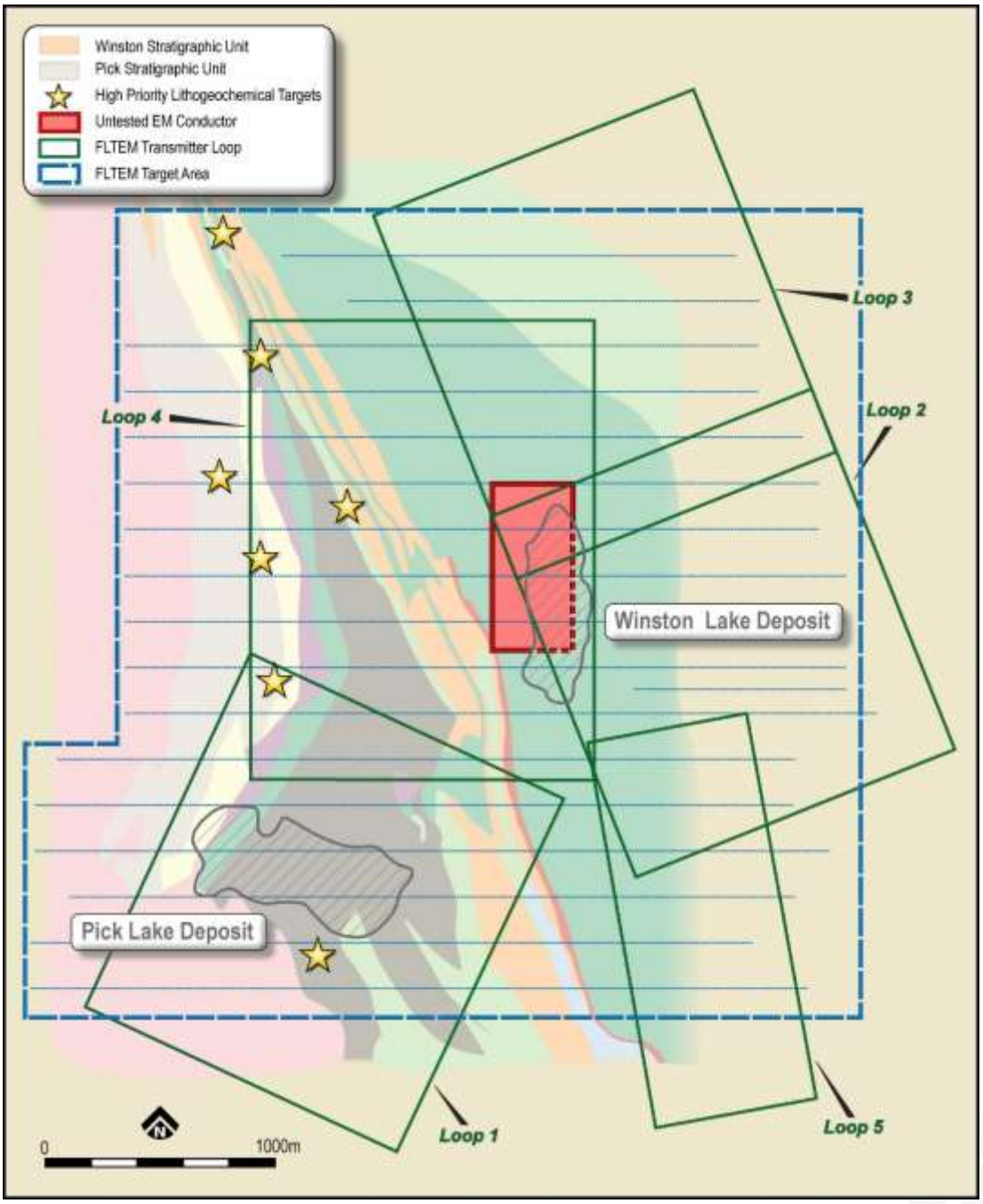


Geophysics Program - FLTEM

Following the identification of seven targets from the structural and lithogeochemical program as highlighted in Figure 3 below, the Company commenced a FLTEM program during February 2019. In addition to identifying the location, the lithogeochemical program defined that potential targets are likely to be at similar depths to the Winston Lake (> 300m) and Pick Lake (>450m) deposits.

The Company considered multiple EM technologies however elected to utilise FLTEM geometry, along with a high-powered transmitter and state of the art magnetic field sensors due to its capacity to test at further depth compared to other technologies. The Company engaged highly experienced Zion Geophysics to manage the FLTEM program.

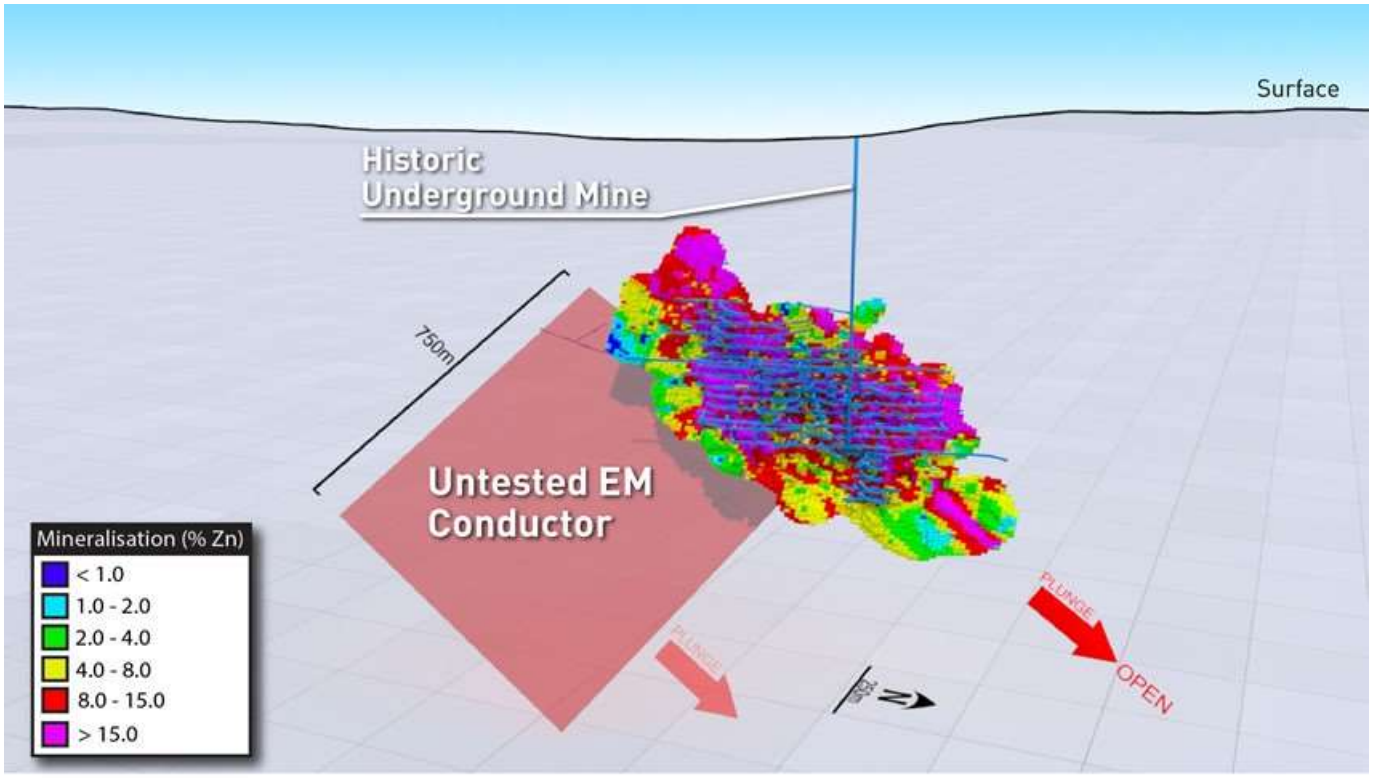
Figure 3: Brownfield FLTEM Geophysics Program



Loop 1 (Figure 3 above) targeted the spectral response of the known Pick Lake mineralisation partially as a "test" case, and like the DHTEM program, FLTEM both detected and defined the Pick Lake deposit. This has provided further confidence in FLTEM as a key exploration tool to be used by the Company in identifying new targets. No other significant anomalies were identified by Loop 1.

Loops 2 and 3 (Figure 3 above) targeted the Winston Lake area, where a major anomaly adjacent to the Winston Lake deposit was identified in the footwall. This anomaly is significant in size as its across 750m x 500m. The dimensions and location of the anomaly in relation to the Winston Lake deposit is illustrated in Figure 4 below.

Figure 4: Long section showing untested anomaly relative to the Winston deposit



Given the depth of this anomaly (approximately 300m below the surface) and its position in relation to Winston Lake (approximately 60m into the footwall), which hosts significant existing underground infrastructure, for cost and logistical reasons, the Company will not drill test this target until the underground mine has been re-entered.

The final modeling and interpretation of the data collected from the transmitting loops 4 and 5 are currently being finalised with results expected in the coming weeks.

Proving EM as a strong exploration tool at Pick Lake - DHTEM program

Being the subject of a historical operation, mineralisation at the Winston Lake and Pick Lake deposits is well understood. The mineralisation at Pick Lake consists predominantly of massive fine to medium grained sphalerite and pyrrhotite with minor, but significantly from a geophysical perspective, chalcopyrite and pyrite. Whilst at Winston Lake, the mineralisation is massive fine to coarse homogenous mix of sphalerite, pyrrhotite, pyrite and chalcopyrite. Importantly, both styles are easily identified through modern EM technology.

Figure 5: Drillhole PL-18-01 1.56m @ 20.12% Zn, 0.8% Cu (see footnote 1, page 1)

During the recent drill program, a DHTEM program was undertaken at Pick Lake, a known deposit, as a "test case" to confirm if EM could successfully detect and define potential mineralisation. If the DHTEM was successful, it would provide the Company further confidence regarding the use of modern EM technology across the brownfields target area. The results were positive as Pick Lake was clearly identified, thereby increasing the Company's confidence that electromagnetics is the correct technique for identifying new anomalies at Superior Lake.

About the Company

Superior Lake Resources Limited

Superior Lake Resources Limited (ASX: SUP) is focused on the redevelopment of the Superior Lake Project in North Western Ontario, Canada. The Project hosts a JORC resource of 2.35 Mt at 17% Zn, 0.9% Cu, 0.4 g/t Au and 34 g/t Ag (see footnote 1, page 1). A Restart Study completed in 2018, forecasted the Project to produce approximately 46,000tpa Zn, with an AISC of US$0.51 / lb.[2] The Company is currently working towards the release of a Definitive Feasibility Study by mid-2019.

To learn more about the Company, please visit www.superiorlake.com.au, or contact:

David Woodall Chief Executive Officer +61 8 6143 6740

[2] 2 See ASX announcement "Outstanding study confirms Superior Lake as low-cost project" dated 10 October 2018. The Company confirms that it is not aware of any new information or data that materially affects the information in that announcement (save for the inclusion of the additional 200,000 tonnes), and that all material assumptions and technical parameters underpinning the production targets and forecast financial information based on production targets in that announcement continue to apply and have not materially changed. As stated above, the inclusion of the 200,000 tonnes will not materially affect the throughput set out in the Restart Study.

Competent Person Statement

Geophysics Results

The information contained in this announcement that relates to geophysics exploration results is based on, and fairly reflects, information compiled by Mr. David Johnson, an independent consultant, employed by Zion Geophysics and reviewed by Mr. Peter Williams, a Fellow and Chartered Professional of the Australian Institute of Mining and Metallurgy and a Director of Superior Lake Resources Limited to complete the geophysical survey and the analysis of the results. Mr. Williams has sufficient experience which is relevant to the geophysics technology, style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person. Mr. Williams consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears.

Appendix 1 JORC 2012 Table 1 Reporting

Section 1. Sampling Techniques and Data

Criteria	Explanation	Commentary
Sampling Techniques	Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling**.**	Not applicable, no soil or drill samples collected
Drilling Techniques	Drill type (e.g. core, reverse circulation, open- hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face- sampling bit or other type, whether core is oriented and if so, by what method, etc.).	Not applicable, no drilling conducted
Drilling Sample Recovery	Method of recording and assessing core and chip sample recoveries and results assessed. Measures taken to maximise sample recovery and ensure representative nature of the samples. Whether a relationship exists between sample recovery and grade and whether sample	Not applicable, no drilling conducted
Logging	Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography. The total length and percentage of the relevant intersections logged.	Not applicable, no drilling conducted
Sub-sampling techniques and sample preparation	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry. For all sample types, the nature, quality and appropriateness of the sample preparation technique. Quality control procedures adopted for all sub- sampling stages to maximise representivity of samples. Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/second- half sampling.	Not applicable, no sampling or assaying conducted
Quality of Sampling and Assaying	The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc. Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	Not applicable, no sampling or assaying conducted

Criteria	Explanation	Commentary
Verification of Sampling and Assaying	The verification of significant intersections by either independent or alternative company personnel. The use of twinned holes. Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. Discuss any adjustment to assay data.	Not applicable, no sampling or assaying conducted. Exploration results have been reviewed and verified.
Location of Data Points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. Specification of the grid system used. Quality and adequacy of topographic control.	• FLTEM lines were surveyed utilising GPS. • Survey lines referenced UTM NAD83 coordinates. • FLTEM line spacing is approximately 200m. (18 lines in total). • Data was collected on 100m intervals. This was reduced to 50m intervals if an EM response was noted in the field. The FLTEM survey was oriented in an east-west direction.
Data Spacing and Distribution	Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. Whether sample compositing has been applied.	Not applicable, no drilling conducted
Orientation of Data in relation to geological structure	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	Not applicable, no drilling or sampling conducted
Sample Security	The measures taken to ensure sample security.	Not applicable, no sampling or assaying conducted
Audits or Reviews	The results of any audits or reviews of sampling techniques and data.	No independent audits have been conducted on this data. Data has been reviewed and accepted in in its raw form independently by Zion Geophysics

Section 2 Reporting of Exploration Results

Criteria	Explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The Pick Lake Project comprises 297 claim units (each claim unit is 400mx400m or 16Ha in area) totaling 47.5km2. The claims are made up of a number of claims acquired in August 2016 and claims recently staked and registered in October 2017. The total of all claim areas is >17,000Ha. Superior is the legal and beneficial owner of 70% of the issue capital of Ophiolite Holdings Pty Ltd (ACN 617 182 966) (Ophiolite). Ophiolite is a proprietary exploration company and is the legal and beneficial owner of the zinc and copper prospective "Pick Lake Project", located in Ontario. Please see ASX announcement dated 6 December 2017. Superior Lake currently has an option over the Winston Lake project claims. These claims are owned by FQM. For further details please refer to ASX announcement dated 21st February 2018.
	The security of the tenure held at the time of reporting along with any known impediments to obtaining a license to operate in the area.	The claims are in good standing.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	The Pick Lake deposit was discovered in 1983 and the Winston Lake deposit was discovered in 1982. The Pick Lake and Winston Lake project areas have been the subject of a variety of exploration campaigns. Some of the previous explorers include Zenamc Metal Mines Limited, Falconbridge Copper Corporation, Minnova, Inmet Mining, Noranda, and Silvore Fox. Please refer report filed on SEDAR for further details - Independent Technical Report on the Pick Lake Property, Pays Plat Lake and Rope Lake Area, Ontario, Canada, dated June 19, 2013 prepared by Bruno Turcotte, MSc, P. Geo and Remi Verschelden, BSc, P. Geo (filed June 21, 2013 on SEDAR). This report can be accessed via the url: http://www.sedar.com under the company name "Silvore Fox".

Criteria	Explanation	Commentary
Geology	Deposit type, geological setting and style of mineralisation	The Pick Lake deposit occurs at the extreme western edge of the Winston-Big Duck Lake sequence of volcanic rocks, approximately 35 metres above a granitic contact. Aeromagnetics within the Project area depicts a distinctive V shaped sequence of magnetic and non-magnetic units converging to a northern "V" apex and appears remarkably similar to the aeromagnetic character of the older Archean Warriedar Fold Belt in Western Australia which hosts the Golden Grove VMS deposits. The Pick Lake deposit occurs as a large sheet like zone of massive sulphides within a series of bedded pyroclastic rocks. Hydrothermal alteration exists in both footwall and hangingwall rocks resulting in varying assemblages of quartz, cordierite, biotite, anthophyllite, garnet, chlorite and sericite with minor disseminated sulphides. The hydrothermal alteration zone appears to be spatially related to the Winston Lake deposit; recent structural mapping provides evidence that Pick Lake and Winston Lake are hosted within the same stratigraphic horizon. The Anderson showing, located near the southeast shore of Winston Lake, appears to be the surface expression of the Pick Lake deposit. This is a rusty pyritic weakly altered series of bimodal volcanics. Massive sulphides of the Pick Lake deposit occur from approximately 300m to 1200m vertically and over a strike length averaging 250 metres. The lower portion of the deposit appears to increase in strike length to approximately 500 metres. The deposit strikes at 20 degrees and dips to the east at 50 degrees. The thickness of the deposit is generally between 2 and 4m, however, locally it is up to 14 metres in width. Sulphide mineralisation is generally very consistent, composed of a fine-grained mixture of sphalerite (50-80%) and pyrrhotite (5-35%) with minor chalcopyrite (0-5%) and pyrite (0-3%). Commonly contained within the sulphides is up to 5% transparent rounded quartz inclusions up to 3mm in size as well as rare (1-3%) sub-rounded biotitic volcanic inclusions. The contacts to the deposit are typically knife sharp and commonly show the presence of minor amounts of silica. The Winston Lake deposit lies at the top of the Winston Lake sequence within cherty exhalite and altered felsic-to-intermediate laminated ash tuff. In places, gabbro forms the hanging wall for the deposit. The footwall consists of altered mafic flow rocks and felsic-to-intermediate volcaniclastic rocks which are underlain by altered quartz and feldspar porphyritic rhyolite and feldspar pyritic basalt with intercalated sulphide-rich, bedded, tuffaceous rocks which, in turn, are underlain by the "Main" quartz fledspar porphyry which is intruded by gabbro and pyroxenite. Hydrothermal alteration, confined to the Winston Lake sequence, and later metamorphism of altered rock have resulted in spectacular assemblages of cordierite, anthophyllite, biotite, garnet, sillimanite, staurolite, muscovite and quartz coincident with an increase in iron, magnesium, and potassium and a decrease in sodium and calcium. Zinc content is directly proportional to the intensity of alteration. High copper values occur at the flanks and top of the alteration "pipe" with the core of the pipe containing relatively depleted copper values. The most common forms of ore are finely banded sphalerite and pyrrhotite and massive-to-coarsely banded sphalerite and pyrrhotite with minor pyrite and chalcopyrite and up to 45% of sub-angular mafic and felsic fragments averaging 3cm in diameter. The north-striking and 50 degrees eastwardly dipping deposit has a strike length of 750m and width of 350m. It has an average true thickness of 6m and is open to depth.

Criteria	Explanation	Commentary
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: easting and northing of the drill hole collar elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar dip and azimuth of the hole down hole length and interception.	Not applicable, no drilling conducted
Data aggregation methods	In reporting Exploration results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut- off grades are usually Material and should be stated	Not applicable, no drilling conducted
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results. If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').	Not applicable, no drilling conducted
Diagrams		Refer to body of announcement for figures.

Criteria	Explanation	Commentary
Balanced Reporting	Where comprehensive reporting of all Exploration results are not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	All geophysical results obtained and modelling completed are reported in this announcement
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): Geological observations; Geophysical survey results; Geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	Exploration activities carried out by other parties include surface geochemistry, drilling, surface geology mapping, VTEM, structural mapping. Refer to the report filed on SEDAR for further details - Independent Technical Report on the Pick Lake Property, Pays Plat Lake and Rope Lake Area, Ontario, Canada, dated June 19, 2013 prepared by Bruno Turcotte, MSc, P. Geo and Remi Verschelden, BSc, P. Geo (filed June 21, 2013 on SEDAR). This report can be accessed via the url: http://www.sedar.com under the company name "Silvore Fox". Superior has completed both DHTEM and FLTEM geophysical surveys DHTEM • Hole PL-18-01-W1 was surveyed using a DigiAtlantis 3-component fluxgate magnetometer probe from 30m to 850m down-hole. A 1500m x 1200m transmitter loop was energized by a TerraScope PRO5U transmitter with a bipolar 50% duty cycle square waveform with base frequency 1 Hz and peak current 20 A. • Results were interpreted by David Johnson, MSc, MAIG of Zion Geophysics, Inc. using the Maxwell modeling software distributed by Electromagnetic Imaging Technology Pty Ltd. FLTEM • A total of five overlapping fixed-loop transient electromagnetic (FLTEM) surveys were read using transmitter loops that varied in dimension but were typically 1500m x 1700m. Readings were taken using a SMARTem24 receiver and ARMIT B-field sensor, proprietary to Abitibi Geophysics and developed by Prof. James Macnae at RMIT University, at 100m intervals along 200m spaced east-west survey lines, with infill to 50m spacing where the crew leader judged it necessary to properly sample the response. A TerraScope transmitter operating at base frequency of 5 Hz with peak transmitter current typically 23 A was used. • The surveys were designed to extend the maximum depth of investigation below that of the VTEM survey to a minimum of 600m below surface. The survey over the Pick Lake mineralization confirmed that this survey configuration resulted in detection of mineralization at least 400m below surface. • The surveys covered the prospective stratigraphy containing the Pick Lake and Winston Lake VMS deposits, extending north from Pick Lake and both north and south from Winston Lake.
Further work	The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).	The following work is planned for the Superior Lake Project: • Completion of the geophysics modelling of the FLTEM program • Completion of DFS