



Drilling and geophysics program identifies a third major conductive body

Highlights

- **The second drill hole and Down-Hole Transient Electromagnetic (DHTEM) survey has successfully identified a new conductive body (Winston South) located approximately 200m south of the Winston deposit (Image 2).**
 - This is the third major conductive body identified in the first two holes of this exploration program (Image 3).
- **The Winston South conductive body has a similar strike, dip and plunge to the Winston deposit. When factored with geological observations and interpretations, this may potentially indicate a new mineralised horizon.**
 - The Winston deposit historically produced approximately 3.1 Mt at 16 % Zn (see ASX announcements 28 August 2019).
- **The DHTEM target is associated with an 8m interval within which there are narrow bands of 10-20 % pyrrhotite and pyrite mineralisation (Image 1). This estimate is based solely on visual estimates of logged core, which is yet to be assayed and analysed.**
 - The presence of pyrrhotite and pyrite mineralisation are important indicators in the identification of VMS systems.
- **Drilling and DHTEM surveying of the final hole has just been completed. DHTEM analysis and interpretation of this hole is underway, with results to be announced in the coming weeks.**

Superior Lake Resources Limited (ASX: SUP) ("Superior Lake" or the "Company") is pleased to provide an update regarding the results of the second of the three drillhole and DHTEM geophysics program at the Company's Superior Lake Zinc Project ("**Project**") located in Ontario, Canada.

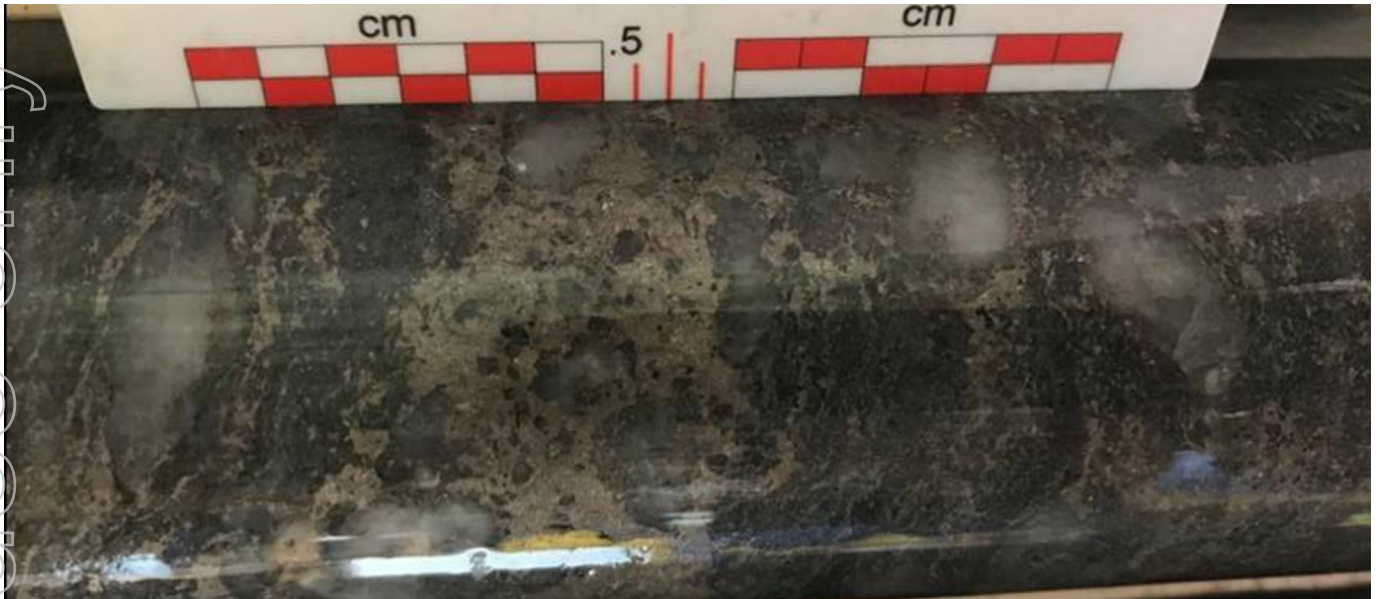
The exploration program is focused on testing conductor models which are supported by geological geochemical, and geophysical analysis to target discrete intervals that are potentially indicative of a mineralizing horizon and any ore systems within the horizon, as interpreted from the Fixed Loop Electromagnetics (FLTEM) survey work completed earlier in the year (see ASX announcements 20 March 2019 and 28 March 2019).

Winston South target was drilled to the planned depth of approximately 450m. Based solely on a visual inspection of logged core, which is yet to be assayed and analysed, this hole intersected an 8m interval with narrow bands of 10-20 % pyrrhotite and pyrite at a depth of 351m, within 10% of target depth. Image 1 below shows an image of the core from the Winston South hole.

Pyrrhotite has a very pronounced geophysical signature and along with pyrite, is typically a key indicator mineral associated with VMS deposits, and was key to the discovery of the Winston and Pick deposits. The Company is currently undertaking a full 50 element assay suite of this core to identify additional key markers related to VMS systems.



Image 1: Winston South Target Hole showing Sulphide Mineralisation, Hole SUP 19-02, 356 meters



Following the drilling, a DHTM survey was completed. The DHTM survey successfully identified an extensive conductive body coplanar with a known mineralised horizon that hosted the Winston Orebody as well as an additional proximal conductor which could indicate a second potentially mineralised horizon.

The new conductor body is located approximately 200m south of the Winston deposit. Similar to the Winston deposit, this interpreted conductive body has a similar strike, dip, and plunge. Image 2 below highlights the location of the hole, the anomaly as well as its proximity to the Winston deposit.



Image 2: Illustrative section of geophysical anomaly 200m south of Winston

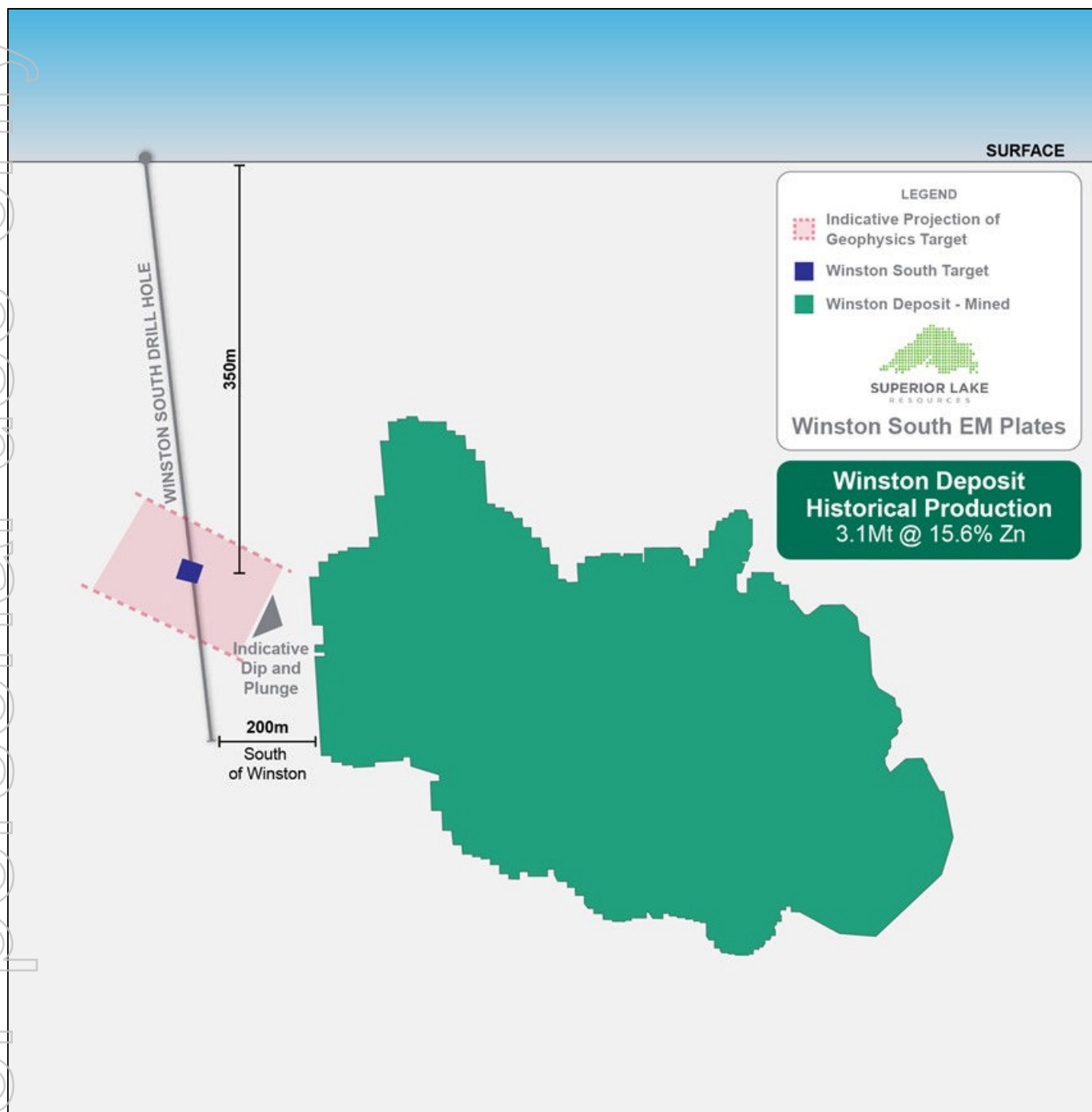
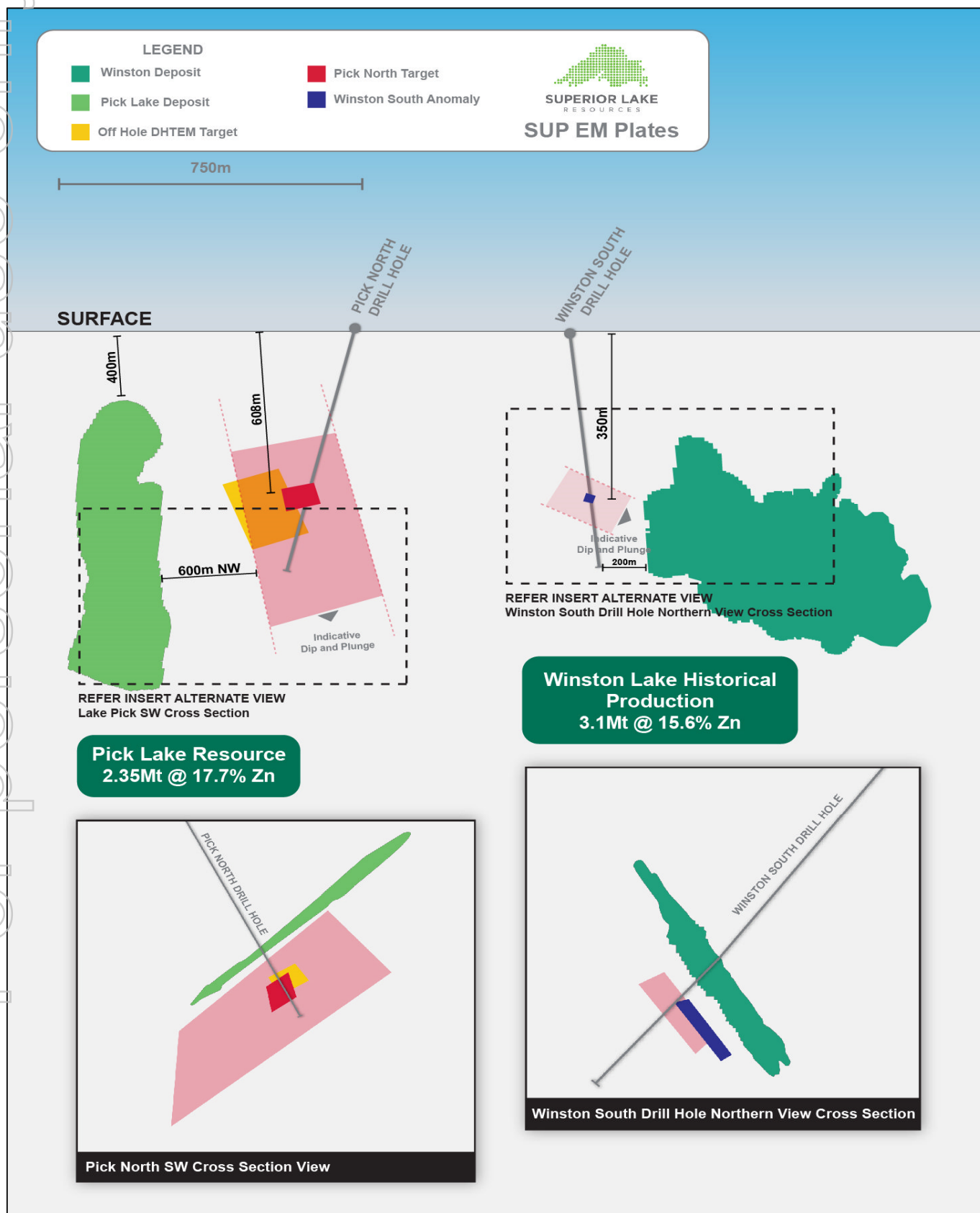




Image 3 highlights the location of each of the three anomalies identified in the first two holes of this program, as well as their respective location in comparison to the Winston and Pick Lake deposits.

Image 3: Illustrative section of all geophysical anomalies identified at Superior Lake





Director Peter Williams commented:

"This is yet another highly positive outcome as we have now identified three major conductive bodies in the first two holes of this program. All of the defined geophysics targets drilled have been shown to comprise chemical and volcanic sediments of the type typically found in the mineralised horizons associated with VMS deposits, which provides further encouragement regarding these results.

"Superior Lake's multidisciplinary exploration approach that integrates geophysical, geochemical and geological information to test the Pick North and Winston South targets has been successful. The Winston South and Pick North targets were predicted within the 3D geometry of the system to within 10% of the confirmed targets, an excellent result."



About the Company

Superior Lake Resources Limited

Superior Lake Resources Limited is focused on the redevelopment of the Superior Lake Zinc Project in North Western Ontario, Canada. The Project is a high-grade zinc deposit with a JORC resource of 2.35 Mt at 17.7% Zn, 0.9% Cu, 0.38 g/t Au and 34 g/t Ag (see ASX announcement 7 March 2019) and a Probable Ore Reserve of 1.96Mt at 13.9% Zn, 0.6%Cu, 0.2g/t Au and 26.2g/t Ag (ASX announcement 28 August 2019).

Superior Lake Mineral Resource at 3% Zn cut-off grade					
Classification	Tonnage Mt	Zn%	Cu%	Au g/t	Ag g/t
Indicated	2.07	18.0	0.9	0.38	34
Inferred	0.28	16.2	1.0	0.31	37
Total	2.35	17.7	0.9	0.38	34
Superior Lake Ore Reserve at 5.2% Zn cut-off grade					
Classification	Tonnage Mt	Zn%	Cu%	Au g/t	Ag g/t
Probable	1.96	13.9	0.6	0.2	26.2
Total	1.96	13.9	0.6	0.2	26.2

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

David Woodall Chief Executive Officer +61 8 6117 0479

Reference to previous ASX announcements

In relation to the Mineral Resource estimate previously reported on 7th 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 7th March 2019 and that all material assumptions and technical parameters underpinning the Mineral Resource estimate in the announcement of 7th March 2019 continue to apply and have not materially changed.

In relation to the Ore Reserve estimate previously reported on 28th August 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 28th August 2019 and that all material assumptions and technical parameters underpinning the Mineral Resource estimate in the announcement of 28th August 2019 continue to apply and have not materially changed.

In relation to previous announcements containing exploration results referred to in this announcement, Superior Lake confirms that it is not aware of any new information or data that materially affects the information included in those announcements.



SUPERIOR LAKE
R E S O U R C E S

Competent Person's Statement

Drilling Results

The information contained in this announcement that relates to drilling exploration results is based on, and fairly reflects, information compiled by Mr. Avrom Howard, an independent consultant, employed by Nebu Consulting Inc, a Practicing Member of the Association of Professional Geoscientists of Ontario (a Recognised Professional Organisation included in a list that is posted on the website of the Australian Securities Exchange) to complete the drilling program and the analysis of the results. Mr. Howard has sufficient experience which is relevant to the drilling program, style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person. Mr. Howard consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears.

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 sampling or assaying conducted. Exploration results have been reviewed and verified.
	Aspects of the determination of mineralisation that are Material to the Public Report.	<ul style="list-style-type: none"> The determination of mineralisation has been by a combination of geological observations (logging and mapping) in conjunction with assay results from the surface and underground database. Information from mine level plans and cross-sections along with reports and studies was used to compile a 3D geological model (wireframes) of the VMS system at Pick and Winston. This was used as the framework for the mineralisation models.
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.).	<p>All drilling completed in this program at both Pick Lake and Winston Lake was diamond drilling from the surface, a total of m of drilling in 3 holes.</p> <ul style="list-style-type: none"> Core size NQ a diameter of 75.7mm.
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 sampling or assaying conducted. Exploration results have been reviewed and verified.
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.	Drill core has been geologically logged to a high standard and includes lithology descriptions, texture, structure, alteration, sulphide percentages, colour, and grainsize.
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	Not applicable, no sampling or assaying conducted



Criteria	Explanation	Commentary
	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.	
Quality of Assay Date and Laboratory Tests	<p>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</p> <p>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.</p> <p>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.</p>	<p>Down-hole EM (DHEM) survey undertaken by Superior Lake has confirmed geophysics targets shown in images in the announcement.</p> <p>The survey details are as follows:</p> <ul style="list-style-type: none"> Digital down-hole EM system: Volterra-BH proprietary to SJ Geophysics, consisting of digital recording unit, 3-component fluxgate magnetometer (as used in DigiAtlantis) and axial component B-field coil sensor. Transmitter: Volterra transmitter proprietary to SJ Geophysics Transmitter energized loop with 100% duty cycle square wave current (i.e. on-time EM measurements taken) <p>The transmitter energized a loop measuring roughly 300m x 300m that was surveyed using handheld GPS.</p> <p>Data were modelled using the program Maxwell distributed by Electromagnetic Imaging Technology which implements a variant of the current ribbon approximation for the EM response of a plate-like conductor devised by Lamontagne et al (1998).</p> <p>Lamontagne, Y., Macnae, J., Polzer, B., 1998. Multiple conductor modelling using program Multiloop. 58th Ann. Mtg. of Soc. Exploration Geophysics, Expanded Abstracts.</p>
Verification of Sampling and Assaying	<p>The verification of significant intersections by either independent or alternative company personnel.</p> <p>The use of twinned holes.</p> <p>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</p> <p>Discuss any adjustment to assay data.</p>	<p>Not applicable, no sampling or assaying conducted. Exploration results have been reviewed and verified.</p>
Location of Data Points	<p>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.</p> <p>Specification of the grid system used.</p>	<ul style="list-style-type: none"> DHEM transmitter loops were surveyed utilising GPS. Down-hole measurement depths were recorded using a digital counter at the hole collar



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Criteria	Explanation	Commentary
	Quality and adequacy of topographic control.	
Data Spacing and Distribution	<p>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.</p> <p>Whether sample compositing has been applied.</p>	Not applicable, no sampling or assaying conducted. Exploration results have been reviewed and verified.
Orientation of Data in relation to geological structure	<p>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</p> <p>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.</p>	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 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.	<p>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.</p> <p>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.</p>
	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 Silvov 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 "Silvov Fox".
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. Aeromagnetism 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 hanging wall 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.

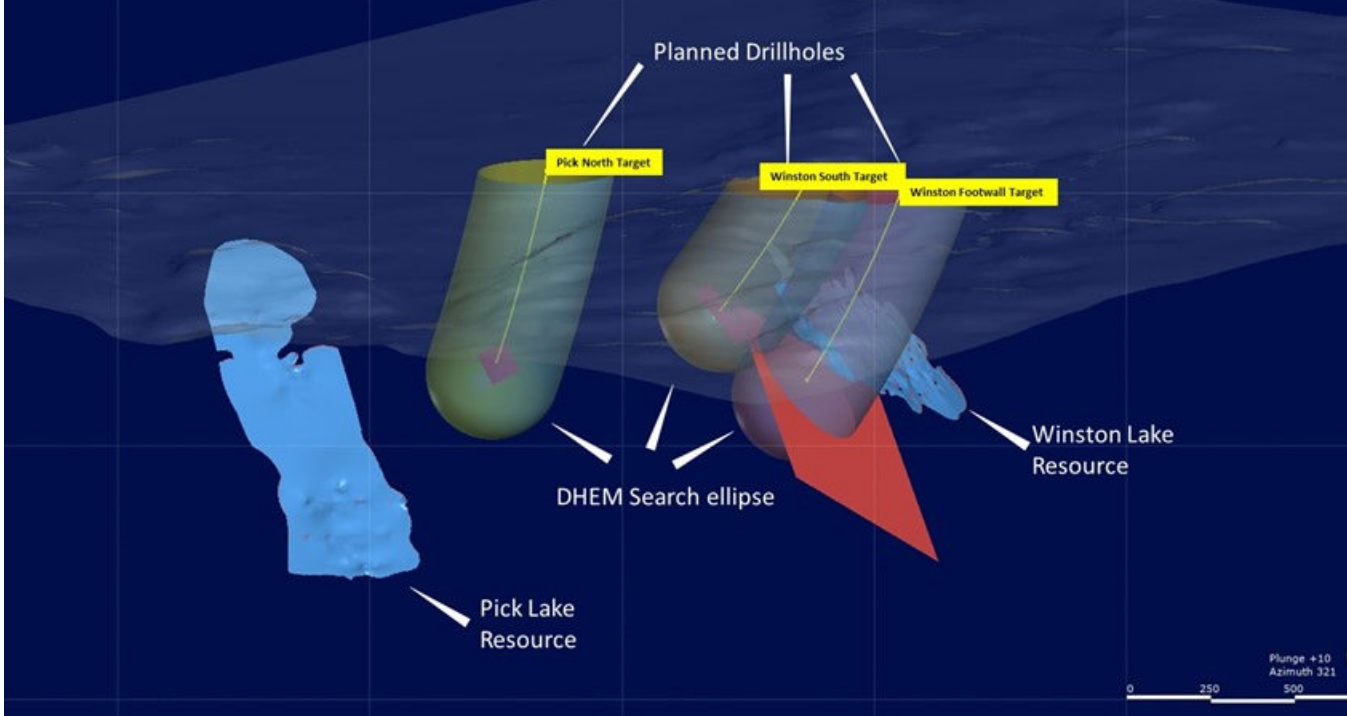


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Criteria	Explanation	Commentary					
		The Winston Lake deposit lies at the top of the Winston Lake sequence within cherty exhalite and altered felsic-to-intermediate laminated ash tuff. In places, gabbro forms the hanging wall for the deposit. The footwall consists of altered mafic flow rocks and felsic-to-intermediate volcanoclastic 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 feldspar 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.					
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.						
		Drillhole Name	Easting	Northing	Elevation	Azimuth	Dip
		Pick North	471720	5424710	10426	275	75
		Winston Footwall	472860	5424975	10456.44	240	70
		Winston South	472650	5424770	10471.44	250	60



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Criteria	Explanation	Commentary
		
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 assaying conducted



Criteria	Explanation	Commentary
Relationship between mineralisation widths and intercept lengths	<p>These relationships are particularly important in the reporting of Exploration Results.</p> <p>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</p> <p>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').</p>	Not applicable, no assaying conducted
Diagrams	Inclusion of appropriate maps and sections and tabulations of significant intercepts.	Refer to body of announcement for figures.
Balanced Reporting	Where comprehensive reporting of all exploration results is 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	<p>Other exploration data, if meaningful and material, should be reported including (but not limited to):</p> <p>Geological observations;</p> <p>Geophysical survey results;</p> <p>Geochemical survey results;</p> <p>bulk samples – size and method</p>	<p>Exploration activities carried out by other parties include surface geochemistry, drilling, surface geology mapping, VTEM, structural mapping.</p> <p>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".</p> <p>Superior has completed both DHTEM and FLTEM geophysical surveys</p> <p>DHTEM</p>



Criteria	Explanation	Commentary
	<p>of treatment;</p> <p>metallurgical test results; bulk density, groundwater,</p> <p>geotechnical and rock;</p> <p>characteristics; potential; and deleterious or contaminating substances.</p>	<p>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.</p> <p>Results were interpreted by David Johnson, MSc, MAIG of Zion Geophysics, Inc. using the Maxwell modeling software distributed by Electromagnetic Imaging Technology Pty Ltd.</p> <p>FLTEM</p> <p>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.</p> <p>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.</p> <p>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.</p>
Further work	<p>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</p>	<p>The following work is planned for the Superior Lake Project:</p> <ul style="list-style-type: none"> • Assays and analysis • Completion of the geophysics modelling of the DHTEM program • Completion of Optimisation study review of the BFS