# **ASX Announcement**

Monday 24th February 2020





# NEW GOLD TREND IDENTIFIED IN BASE OF TILL DRILLING IN FINLAND

### **Key points**

- Base of till (BOT) drilling has defined a new gold mineralised trend 2 kilometres east of Aarnivalkea
- BOT holes grade up to 4.3g/t gold with associated arsenic, antimony and copper anomalism
- Gold and multielement anomalism is associated with a north-south striking zone of strongly deformed, altered and quartz-arsenopyrite veined bedrock
- Identified over a 1.2 kilometre strike length so far
- 10.7g/t gold and pathfinder elements in a BOT hole further east of this may represent a fault offset southern continuation of this trend
- Diamond drilling scheduled to commence mid-March

S2 Resources Ltd ("S2" or the "Company") advises that recent base of till (BOT) drilling has identified a new gold mineralised trend to the east of its 100% owned Aarnivalkea gold prospect in northern Finland (Figure 1). This BOT drilling was undertaken in lieu of planned extensional diamond drilling at Aarnivalkea, which could not proceed due to unusually warm conditions in the arctic preventing the ground from freezing and restricting rig access in swampy areas. The new BOT anomaly is largely located on a gentle rise which can be drilled year-round, and diamond drilling to test this is planned to commence as soon as possible.

Reconnaissance BOT drilling undertaken 2 kilometres to the east of the Aarnivalkea gold prospect to test beneath an ionic leach gold anomaly has identified a 1.2 kilometre long north-south striking zone of strongly altered and deformed bedrock with associated strong gold, arsenic, antimony and copper anomalism (Figures 2-6).

The bedrock in this zone comprises strongly sheared and sericite, silica, carbonate, sulphide altered greenstones with quartz-arsenopyrite veining (Figure 7). Numerous samples grade greater than 0.5 g/t gold,



with a peak value of 4.3 g/t gold, and these have associated anomalous arsenic, antinomy and copper pathfinder elements. This corridor is open along strike to the south (Figures 2-6).

It is likely that the southern extension of this corridor has been terminated by a late fault and displaced 1.5 kilometres to the northeast, where another line of reconnaissance BOT drilling has intersected gossanous quartz assaying 10.7g/t gold together with a similar suite of pathfinder elements (Figures 2-6).

BOT drilling is ongoing with the aim of further defining the extent of this new trend and its potential fault-offset continuation, and a diamond rig has been sourced to commence drilling in mid-March.

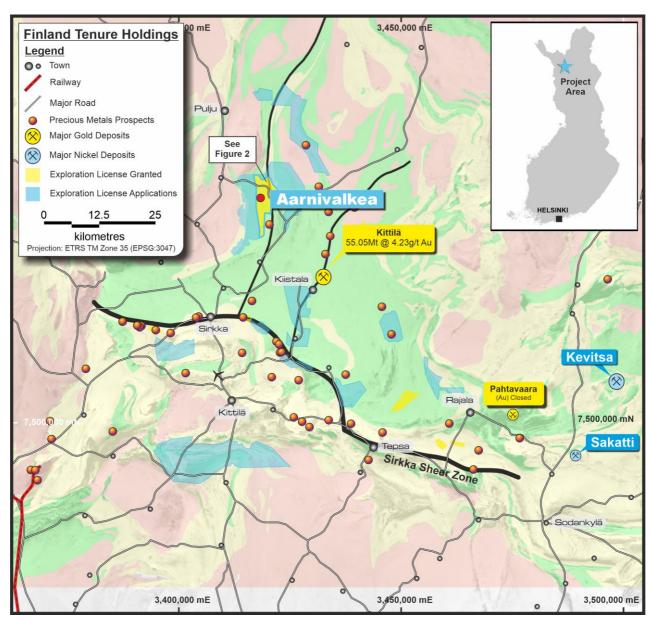


Figure 1. Regional map of Central Lapland Greenstone Belt showing S2 ground holdings and significant mines/deposits on simplified geology (with box showing location of Figure 2).



#### **About BOT drilling**

BOT drilling retrieves a single end of hole sample at the interface between the base of the glacial till and the subjacent bedrock, and is essentially a way of collecting rockchip samples from beneath the transported cover. The sample is a mixture of clay and rock rubble, with the latter representing material eroding from the bedrock. Unlike deeply weathered terrains such as Australia, where rocks oxidise and gold disperses, in glaciated terrains such as Finland the bedrock is fresh and there is very little lateral dispersion of gold, so targets are very narrow, and unless on-line drill hole spacing is very close (ie, 20, or even 10 metres), mineralisation may be missed. The presence of one anomalous hole per traverse is considered encouraging, and the repetition of this on several adjacent traverses more so.

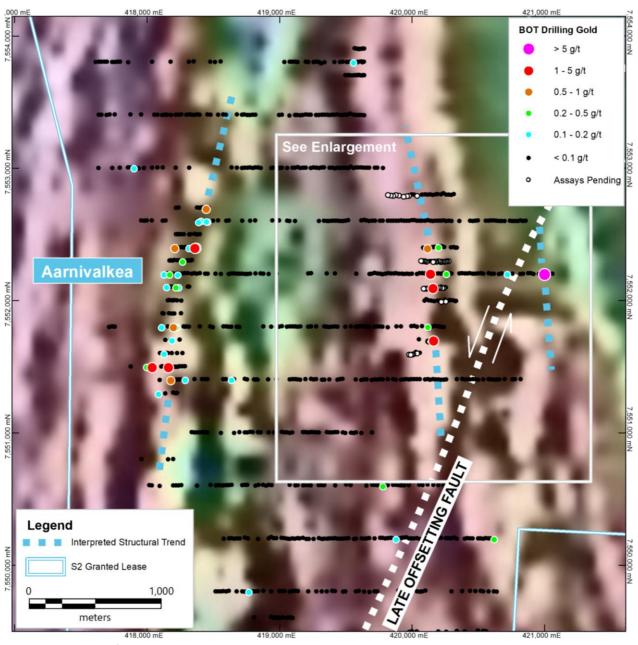


Figure 2. Location of new gold anomalous trend with respect to the Aarnivalkea gold prospect, showing the BOT drilling at both localities, colour coded for comparison of gold values.



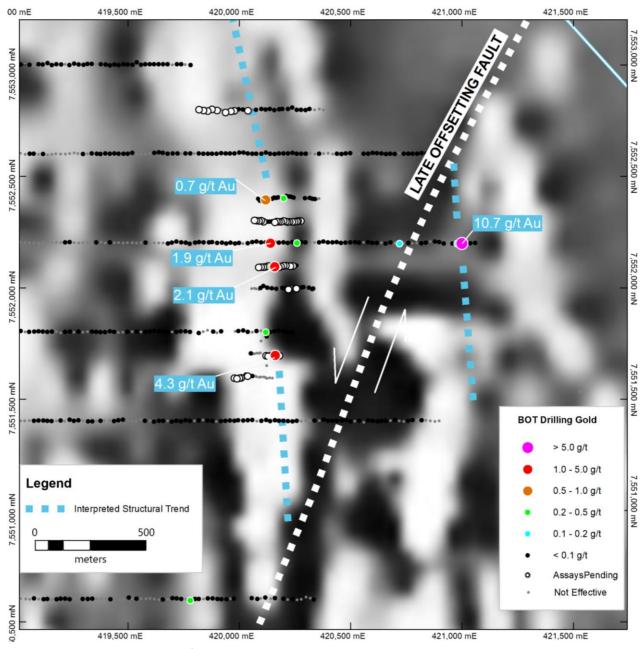


Figure 3. New BOT drilling east of Aarnivalkea showing N-S trend with strongly anomalous gold values. A late NNE striking fault is interpreted to offset this trend approximately 1.5km to the northeast, where further anomalous gold has been intersected.



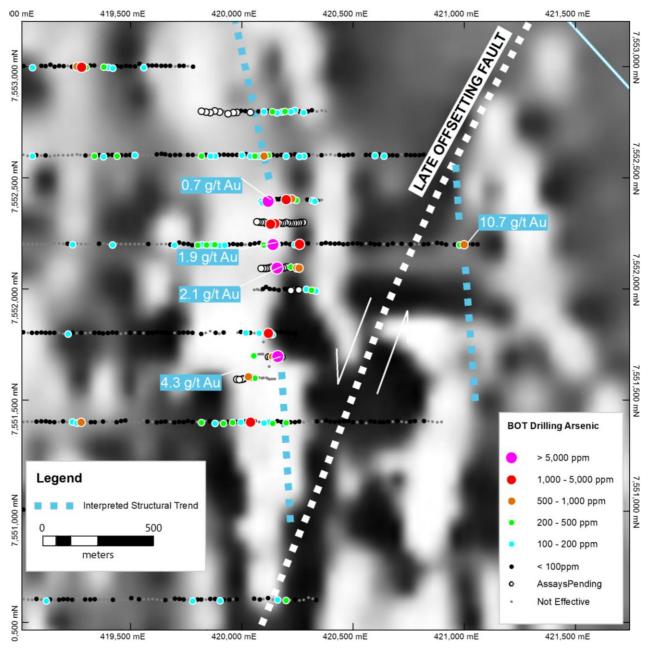


Figure 4. New BOT drilling east of Aarnivalkea showing N-S trend with strongly anomalous arsenic values. A late NNE striking fault is interpreted to offset this trend approximately 1.5km to the northeast, where further anomalous arsenic has been intersected. High gold values (labels) coincide with strongest arsenic anomalism (>0.5% As).



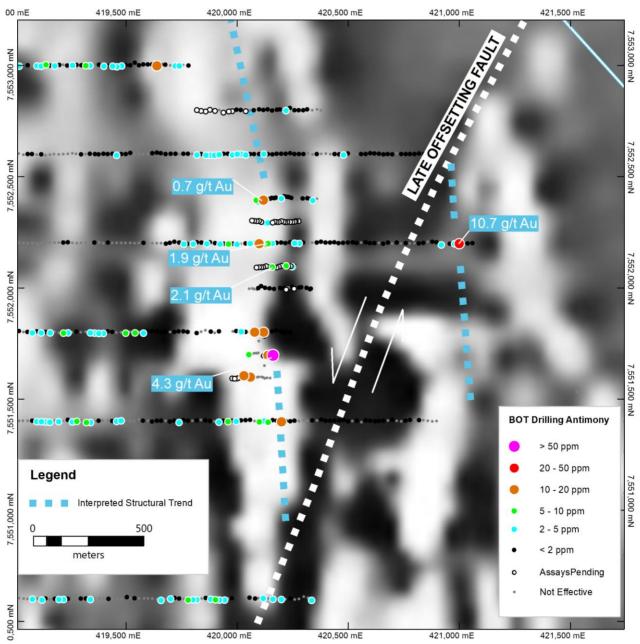


Figure 5. New BOT drilling east of Aarnivalkea showing N-S trend with anomalous antimony values. A late NNE striking fault is interpreted to offset this trend approximately 1.5km to the northeast, where further anomalous antimony has been intersected. High gold values (labels) coincide with strongest antimony anomalism.



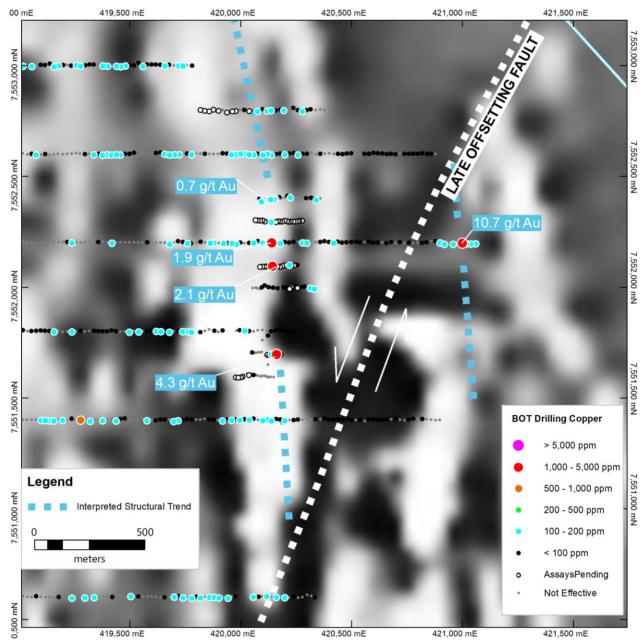


Figure 6. New BOT drilling east of Aarnivalkea showing N-S trend with anomalous copper values. A late NNE striking fault is interpreted to offset this trend approximately 1.5km to the northeast, where further anomalous copper has been intersected. High gold values (labels) coincide with strongest copper anomalism (0.1-0.5% Cu).



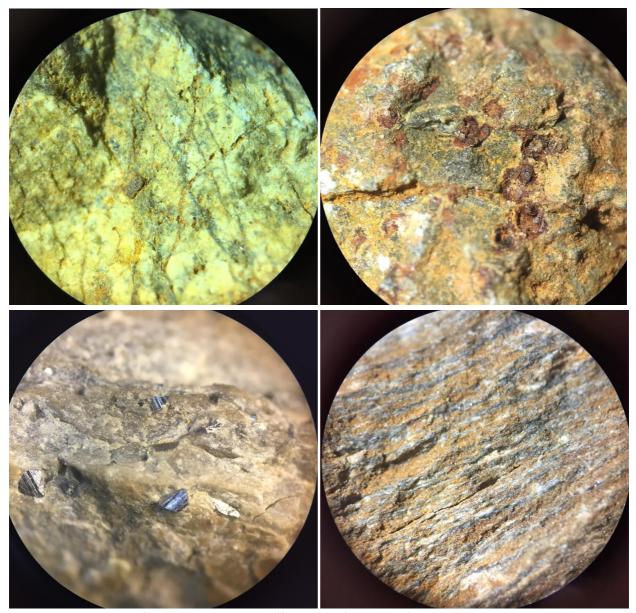


Figure 7. Photographs of BOT rockchip samples (from top left clockwise): hole 18881, silica alteration with quartz microveining and iron oxides after pyrite, grading 2.1g/t gold; hole 18901, silica alteration with iron oxide pitting after sulphides, grading 4.3g/t gold; hole 18901, strongly sheared and quartz-sericite-dolomite altered rock, grading 4.3g/t gold; and hole 18668, intense silica-sericite alteration with euhedral arsenopyrite, grading 0.3g/t gold.

This announcement has been provided to the ASX under the authorization of Mark Bennett, Managing Director & CEO.

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#### **Competent Persons statement**

The information in this report that relates to Exploration Results from Finland is based on information compiled by Mr John Bartlett, who is an employee and shareholder of the Company. Mr Bartlett is a member of the Australian Institute of Mining and Metallurgy (MAusIMM) and has sufficient experience of relevance to the style of mineralization and the types of deposits under consideration, and to the activities undertaken, to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Bartlett consents to the inclusion in this report of the matters based on information in the form and context in which it appears.

#### Annexure 1

The following Tables are provided to ensure compliance with the JORC code (2012) edition requirements for the reporting of exploration results.

### **SECTION 1 SAMPLING TECHNIQUES AND DATA**

Criteria	JORC Code 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.	Base of Till (BoT) drilling is undertaken by Moreenityo Macklin Oy of Sattanen, Finland. Holes are drilled to bedrock or blade refusal and a 20cm sample is collected at the end of hole for geochemical analysis and lithological logging. All are forwarded for analyses by ALS Laboratories.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used	Sampling and QAQC procedures are carried out using S2 protocols as per industry best practice.
	Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information	The BoT samples are sent to ALS Laboratories in Sodankyla, Finland for preparation that includes weighing and then screening to produce a sieved fraction <180 micron for analyses for gold and base metals.
Drilling techniques	Drill type (e.g. core, reverse circulation, openhole 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).	Base of Till drilling is by a percussion flow through sample bit that can collect a 20cm sample of bedrock material at the base of glacial deposits up to 20m thick.



Criteria	JORC Code explanation	Commentary
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed	BoT samples are visually inspected and photographed to assess if they are likely to be a basement sample or whether the hole has failed to reach basement due to boulders or excessive cover thickness.
	Measures taken to maximise sample recovery and ensure representative nature of the samples	Sample quality is qualitatively logged recording sample condition, with quantity of fines versus coarse chips.
	Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	No relationship has been seen to exist
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.	The logging uses a standard legend developed by S2 which is suitable for wireframing of the basement interface. Exploration holes are not geotechnically logged but resource holes are.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	All chips haves been photographed wet.
	The total length and percentage of the relevant intersections logged	All drillholes were logged in full.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	No core was drilled or sampled
	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	Bot samples are dried and sieved. A representative portion of the coarse fraction is retained and logged
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Samples were delivered by S2 personnel to ALS Minerals laboratory in Sodankyla, Finland for preparation that includes weighing and then screening to produce a sieved fraction <180 micron for analyses for gold and base metals. The prepared samples are forwarded to ALS Minerals Loughrea, Ireland, for analysis.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Full QAQC system in place to determine accuracy and precision of assays
	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.	No core was drilled or sampled
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Samples are of appropriate size for geochemical reconnaissance
Quality of assay data and laboratory tests	The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.	All samples were analysed by ALS Minerals Loughrea, Ireland. Samples analysed using a 25g aqua regia digestion with a combination of ICP-AES and ICP-MS finish (code AuME-TL43) for Au as well as a multi-element suite (Ag, As, Bi, Ca, Cd, Cu, Fe, Hg, Mg, Mn, Mo, Ni, P, Pb, S, Sb, Tl & Zn).



Criteria	JORC Code explanation	Commentary
	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.	No geophysical tools were used to determine any element concentrations.
	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.	Full QAQC system in place including Certified Standards and blanks of appropriate matrix and levels
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	A company representative has personally inspected all sample chips with a photographic record kept for all chips. The Exploration Manager has inspected all photographs.
	The use of twinned holes.	No twinned holes were drilled within the main infilled anomaly.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Primary sampling data is collected in a set of standard Excel templates. The information is managed by S2's database manager for validation and compilation into S2's central database.
	Discuss any adjustment to assay data.	No adjustments made
Location of data points	Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	BoT collars were located with a handheld GPS with an accuracy of within 3 metres.
	Specification of the grid system used.	The grid system used is the Standard Finnish National Grid ETRS-TM35FIN
	Quality and adequacy of topographic control.	Excellent quality topographic maps produced by the Finnish Authority — National Land Survey of Finland (NLS).

## **SECTION 2 REPORTING OF EXPLORATION RESULTS**

Criteria	JORC Code 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 exploration work is located within the Paana Central Exploration License. ML2018:0081 The exploration licenses are 100% owned by Sakumpu Exploration Oy, a Finnish registered 100% owned subsidiary of S2
	The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	All of the Exploration Licenses are in good standing and no known impediments exist on the tenements being actively explored.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	The area is a virgin greenfields discovery. Outokumpu completed limited regional BoT drilling in the area, but were not assayed for gold.
Geology	Deposit type, geological setting and style of mineralisation.	The prospect style is a shear zone hosted orogenic gold deposit within the Central Lapland Greenstone belt.



Criteria	JORC Code 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 depth  • hole length.	Refer to sample plans in text.
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.	Results are single point geochemical samples at the end of the BoT hole.
	Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.	None used.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	None used.
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').	The trend of mineralisation at the prospects described is broadly north-south. Other orientation such as dip or dip direction are not known at present. Diamond drilling will be used to determine this.  Refer to figures in body of text.
Diagram	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	Refer to Figures in body of text.
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 results considered significant are reported.



Criteria	JORC Code explanation	Commentary
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.	No other exploration data present.
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). Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive	Initial diamond drilling of the prospect is scheduled to commence in March. The prospect area is able to be drilled in either winter or summer.