RAGNAR
METALS LTD.

2 January 2020

GEOPHYSICAL SURVEY EXTENDS MINERALISATION AT SWEDISH NICKEL PROJECTS

HIGHLIGHTS

- **Induced Polarization & Resistivity (IP-R) survey completed at the Tullsta Nickel Project in Bergslagen District, Sweden**

- **Swedish geoscientific consultants GeoVista AB complete the survey works and data modelling**

- **Inverse data modelling has defined the known near surface sulphide mineralisation as well as deep, north plunging anomalism below the existing drilling**

- **Ragnar will review the existing "discovery" drilling with this model and design a drilling program to test the Granmuren mineralisation at depth**

Ragnar Metals Limited ("Ragnar" or "the Company", ASX: RAG) is pleased to announce that Swedish geoscientific consultants, GeoVista AB, have completed an Induced Polarization & Resistivity/ Chargeability Survey (IP-R) over the Company's Swedish nickel projects at Tullsta and Gaddebo. The projects are located to the west of Sala, within in the Bergslagen District, which is situated 110km NW of the capital Stockholm (Figure 1).

This geophysical survey successfully highlighted the mineralisation at Tullsta, which is characterized by a steeply dipping zone forming an anomaly of up to 150m wide. Within this zone there are multiple lenses and the two combined models form a continuous body that extends from surface to below the boreholes and open to the north and west. Magnetic and gravity modelling also indicates a western to north-westerly plunging body which is supported by the results of this recent geophysical survey.

Ragnar's Chairman Steve Formica comments *"This is a great outcome for the Company as the recently completed geophysical survey has further highlighted and expanded the mineralisation potential as previously defined in the earlier drilling. The 3D geophysical modelling supports the geological concept which our geoscientific team have been working towards. Ragnar now have great confidence that Granmuren has the potential to grow as Scandinavia and the adjoining Karelia Province in north-west Russia are one of the major nickel-copper provinces of the world."*

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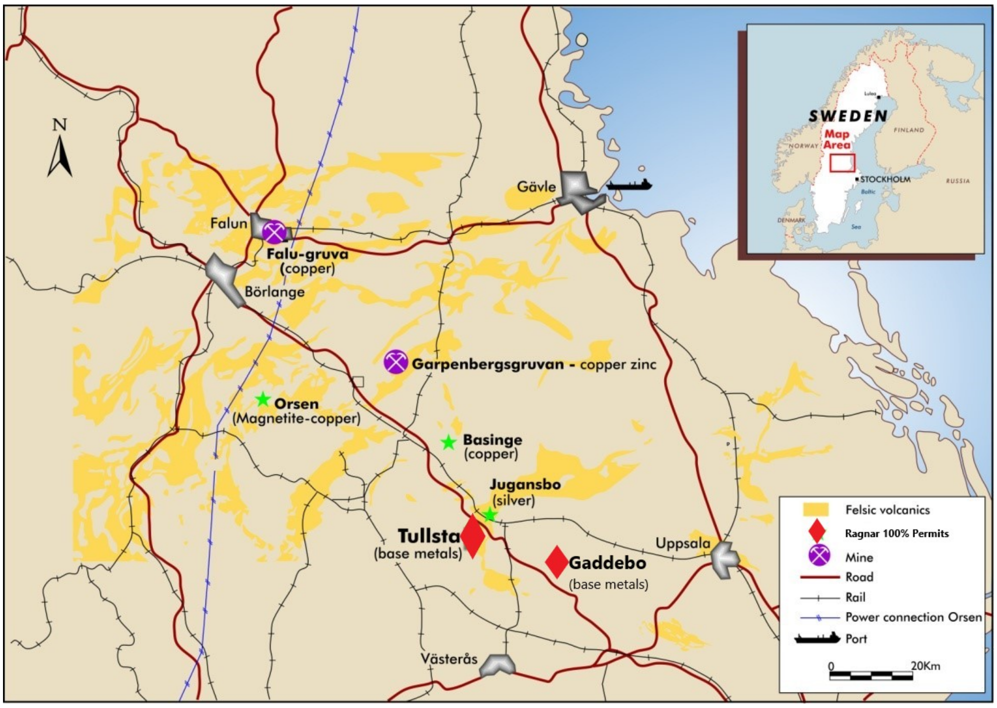

Figure 1: Tullsta permits are located in the Bergslagen District NW of Stockholm. The region is well supported by infrastructure and mining operations.

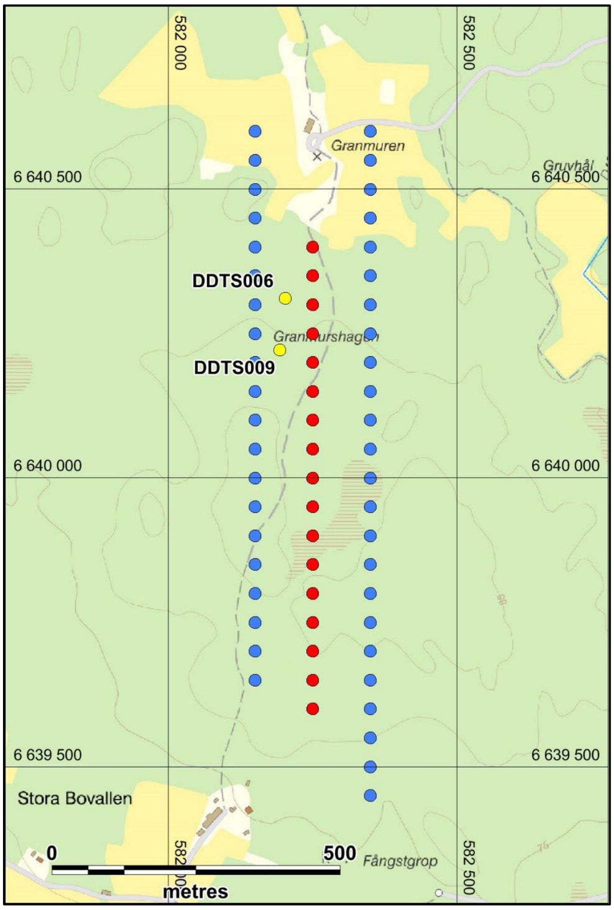

Figure 2: Map showing surface electrode positions and collars for the used boreholes. Receiver electrodes are shown with red symbols and transmitter electrodes with blue symbols. Both boreholes (yellow symbols) have an azimuth towards north and an inclination of 60°.

The geophysical fieldwork was carried out from the 29/10/2019 to 2/11/2019 by Swedish geoscientific consultants, GeoVista AB. The aim of this project was to characterise the Granmuren mineralization with Resistivity and Induced Polarization (IP) measurements. Measurements were carried out with a pole-dipole configuration, using one fixed receiver line and two transmitter lines on the surface (Figure 2). Electrodes were also placed in two boreholes through the nickel-copper sulphide mineralisation (Figure 2). The data was inverted to form 3D models (Figure 3). The survey successfully highlighted the mineralisation, which is characterized by a steeply dipping zone of low resistivity forming an anomaly of up to 150m wide. Within this zone there are multiple lenses of very low resistivity (<100Ωm). The zone is strongest in the west and becomes narrower in the eastern part of the survey area. Except for the most conductive parts, the mineralized zone also exhibits anomalous chargeability (IP effect). The anomalous body appears to continue beneath the existing boreholes and is open at depth towards the west and to the north (Figures 3 & 4).

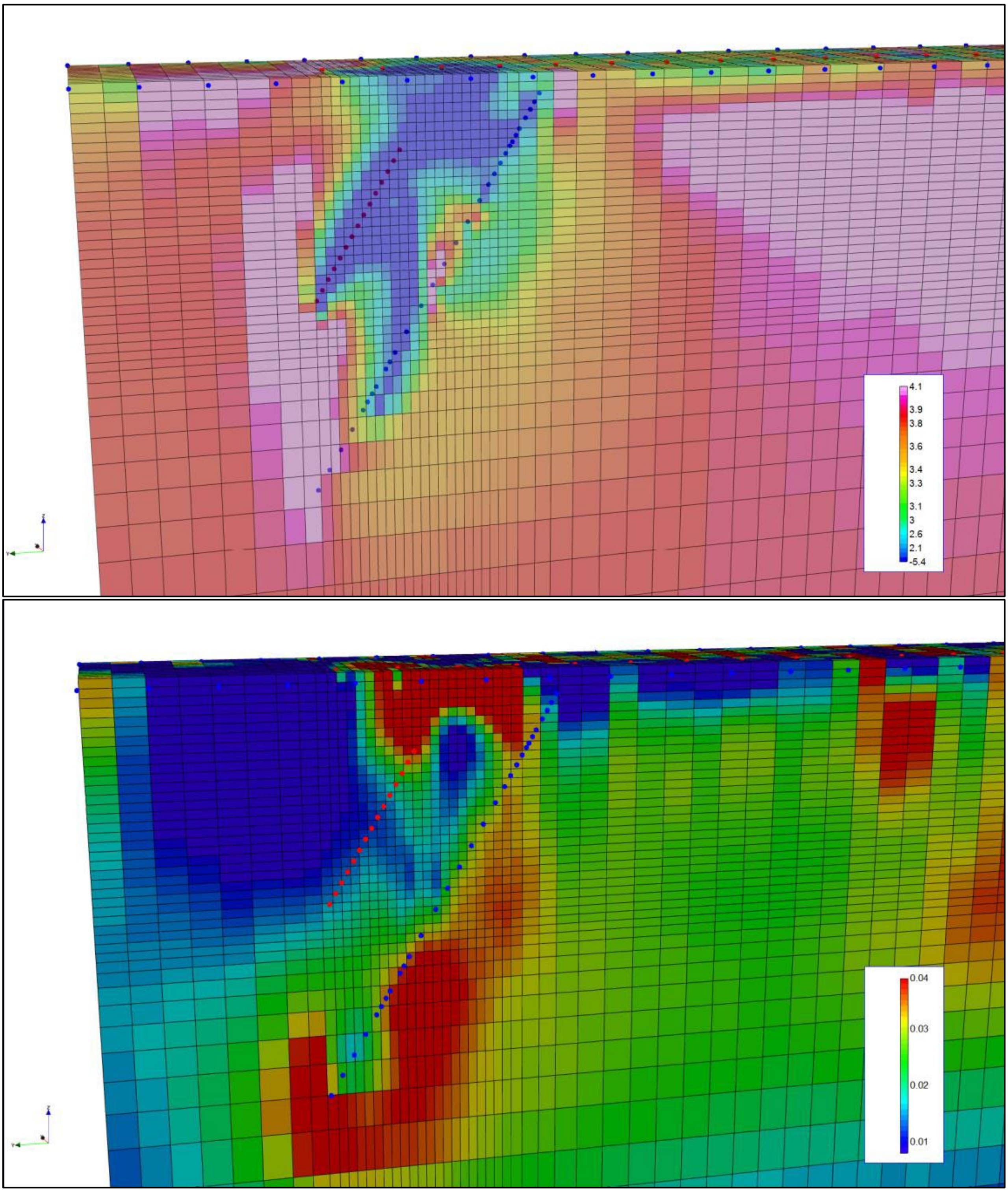

Figure 3: 3D view from the west (north to the left) with cut-through inverted resistivity model (top image) and inverted chargeability model (bottom image) along section 582190E (i.e. roughly along section containing boreholes DDTS006 and DDTS009). Current electrode positions at surface are shown with blue symbols and potential electrode positions with red symbols.

Thresholded versions of the resistivity and chargeability models are shown merged together at Figure 4, displaying a complete picture of the survey.

The two combined models form a continuous body that extends from surface to below the boreholes and open to the west and to the north. A narrow gap is also seen in the centre of the anomalous volume. It should be noted that the very lowest resistivity values in the model tend to be assigned to model blocks close to electrode positions or between electrode positions. The apparent shape of the most conductive part of the mineralisation is therefore biased by the positions of the two used boreholes and survey down all or future boreholes would show a more complete model. The northern contact to the mineralisation appears to be sharp, whereas the southern contact is more diffuse. The conductive volume is thicker in the west and becomes thinner towards east. Magnetic and gravity modelling (Figure 5) indicates a western to north-westerly plunging body which is supported by the results of this recent geophysical survey.

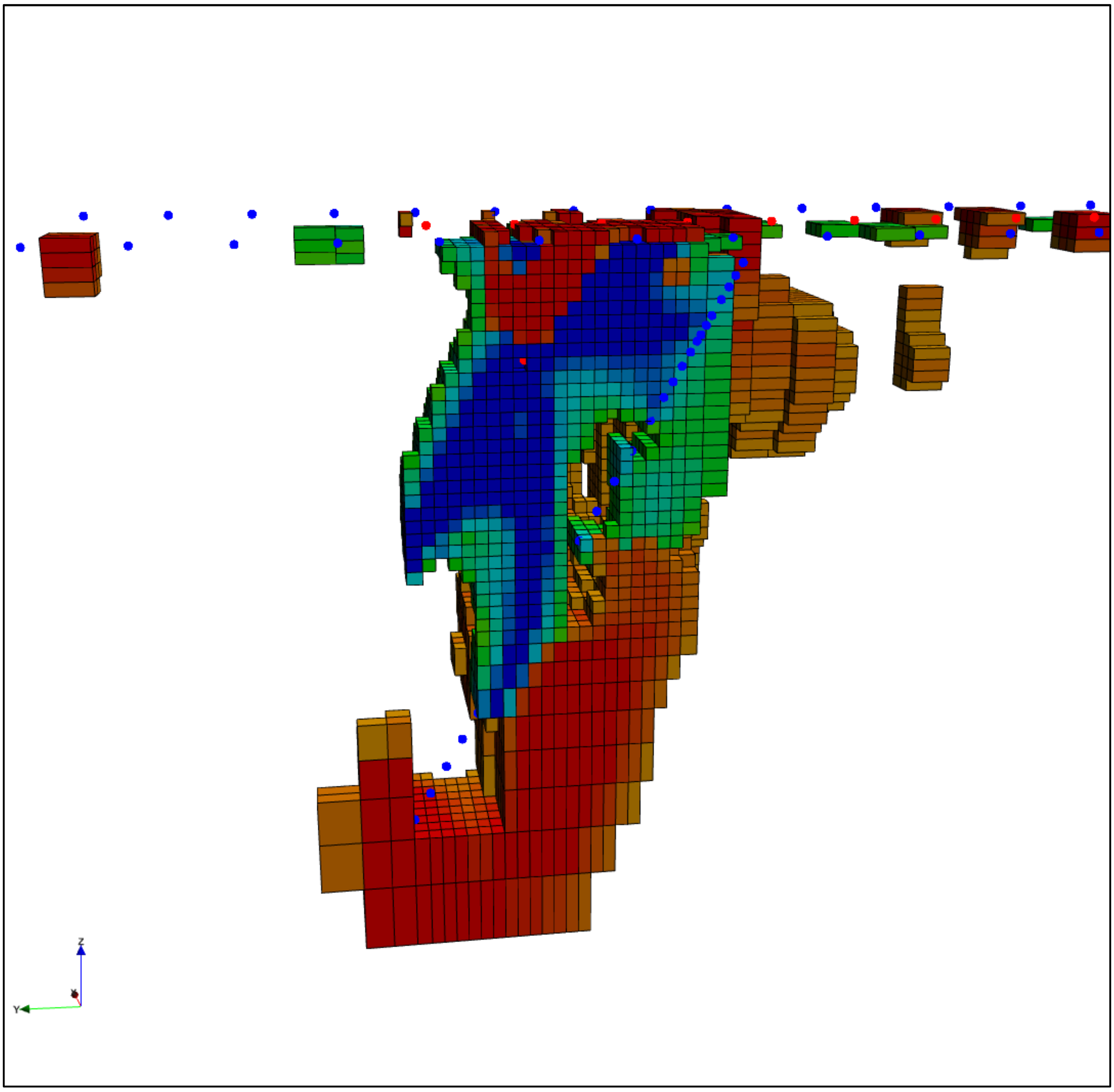

Figure 4: 3D-view from west (north to the left). Cut through inverted resistivity (blue-green) and chargeability (red-orange) model. Current electrode positions are shown with blue symbols and potential electrode positions with red symbols

About the Project

The Tullsta Project contains the Granmuren Nickel Deposit which was discovered in 2012 by drilling of a VTEM survey anomaly. Mineralisation at Granmuren comprises two thick fingers of highly sulphidic pyroxenitic-gabbroic intrusions which predominantly comprise of disseminated-blebby sulphide mineralisation containing high tenure Ni-Co-Cu mineralisation. In 2018 GeoVista completed geophysical IP-Resistivity testwork on several drill core samples collected from the deposit during the 2018 field trip. GeoVista determined that Granmuren has the properties of a “very good IP-target” and that IP geophysical surveying would be a more effective than EM surveys for testing the disseminated mineralisation at the Tullsta-Granmuren Project. Pole-dipole survey measurements were carried out to determine if the deposit merges into one large intrusive body and open up at depth (Figure 5) forming the large scale, higher-grade deposits that are developed elsewhere in Scandinavia.

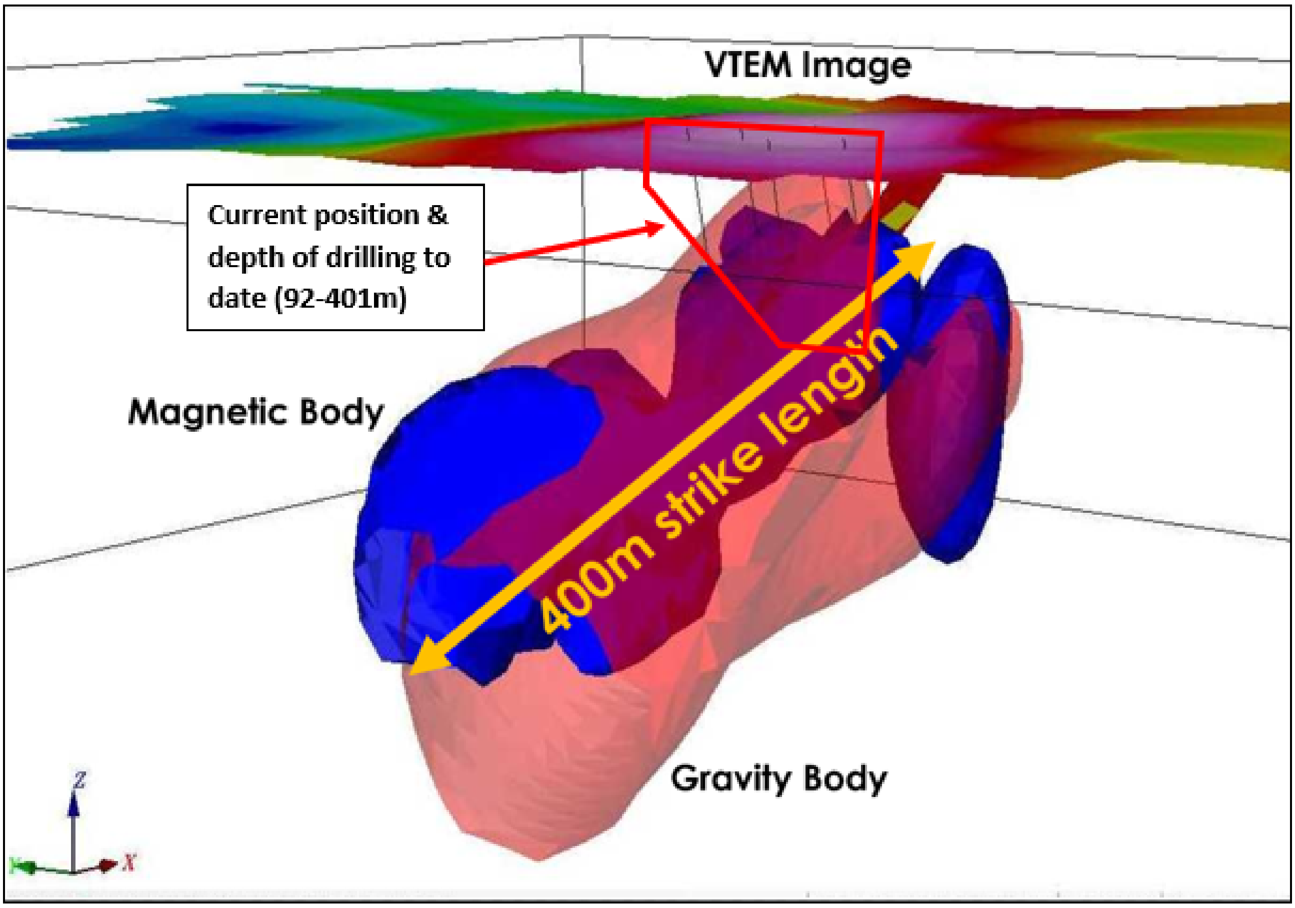

Figure 5: 3D model of the magnetic body (blue and claret) vs gravity body (pink) for the Granmuren Ni-Cu prospect; the body is approximately 400 meters in length and plunging westwards at depth. IP Surveying was used to test for sulphide mineralisation within this modelled body.

Next Steps

The results of the geophysical survey support the earlier 3D modelling indicating that the mineralisation intersected in drilling at Granmuren is supportive of continuing at depth. Ragnar will review the existing "discovery" drilling with this new 3D model and design a drilling program to test the Granmuren mineralisation at depth. Downhole geophysical methods will be utilised to further define and continue to expand the information at Granmuren in the aim of expending the already defined Ni-Co-Cu mineralisation.

Competent Person Statement

The information in this announcement relating to Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Neil Hutchison of Geolithic Geological Services, who is a consultant to Ragnar Metals, and a member of The Australasian Institute of Geoscientists. Mr Hutchison has sufficient experience relevant to the style of mineralisation and type of deposit under consideration, and to the activity 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 Resource and Ore Reserves".

Mr Hutchison consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

For the purpose of ASX Listing Rule 15.5, the Board has authorised for this announcement to be released.

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APPENDIX 1 – JORC Table 1

Section 1 Sampling Techniques and Data

Criteria	*JORC Code Explanation*	**Commentary**
Sampling techniques	*Nature and quality of sampling (eg 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* *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* *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 (eg '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 (eg submarine nodules) may warrant disclosure of detailed information.*	Resistivity and Induced Polarization (IP) measurements were completed during a geophysical survey at the Tullsta -Granmuren Project. Measurements were carried out with a pole-dipole configuration, using one fixed receiver line and two transmitter lines on the surface. Electrodes were also placed in two boreholes. The data were inverted to 3D models with the program DCIP3d (UBC GIF).
Drilling Techniques	*Drill type (eg core, reverse circulation, open- hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg 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).*	The geophysical survey was carried out with a GDD 3.6 kW/2400 V transmitter and an Iris Instruments Elrec Pro receiver. The receiver can measure the signal from up to ten simultaneous dipoles.
Drill 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 bias may have occurred due to preferential loss/gain of fine/coarse material.*	The transmitter current varied between different current electrode positions. The weakest current was 0.095 A and the strongest current was 3.69 A with an average of 0.93 A. The time base was selected to two seconds and the duty cycle was 50% resulting in a base frequency of 0.125 Hz. The number of stacks for individual readings varied between 4 and 8.
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 survey was carried out with a GDD 3.6 kW/2400 V transmitter and an Iris Instruments Elrec Pro receiver. The receiver can measure the signal from up to ten simultaneous dipoles.

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	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. *The total length and percentage of the relevant intersections logged.*	
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.* *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.*	N/A
	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.* *Whether sample sizes are appropriate to the grain size of the material being sampled.*	NA
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.* *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 (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	Repeated readings were taken at most stations to check repeatability of the results. The repeatability was very good and standard deviations for stacked signals was in general low (except for readings with very low signal strength with borehole electrodes). The decaying IP signal was measured at 20 time gates. The first time gate starts at 40 ms. The survey was carried out with a GDD 3.6 kW/2400 V transmitter and an Iris Instruments Elrec Pro receiver. The receiver can measure the signal from up to ten simultaneous dipoles.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.* *The use of twinned holes*	NA
	Discuss any adjustment to assay data	Processing of the data included the following steps: • Removal of obviously erroneous or disturbed data (hardly any)

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		• Removal of duplicates (readings with low standard deviation were kept) • Normalization of measured on-time potential difference by output current magnitude • Correction of polarity of recorded signal • Calculation of pole-pole data • Assignment of coordinates • Calculation of off-time potential difference • Formatting of data in UBC format for inverse modelling.
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*	Hand-held GPS units with an estimated horizontal accuracy of around 1 to 3 m were used for navigation and for determining electrode positions.
Data spacing and distribution	*Data spacing for reporting of Exploration Results* *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*	Measurements were made with a south-north oriented, fixed receiver line consisting of 16 dipoles, each being 50 m long (Figure 2-1). Receiver electrodes were also placed in the borehole DDTS006. An electrode string with seven dipoles, each being 10 m long, was used in the borehole. The signal was also measured between the uppermost borehole electrode and one surface electrode. The borehole electrodes covered the depth intervals 70-140 m and 140-210 m respectively for different current electrode positions. Transmitter electrode positions were along two lines parallel to the receiver line and offset 100 m towards east and west respectively. Transmitter positions were also along the borehole DDTS009. A total of 30 electrode positions from 20 to 400 m depth were used along the borehole. A fixed return current electrode was placed at 584172E/ 6638706N. This is not at “infinity”, but sufficiently far away and in such a direction that it will only produce very weak potential gradients along the profile, compared to the gradient caused by the moving electrode. The return current electrode was included in subsequent numerical modelling. The signal was measured for all surface dipoles and one 70 m borehole interval for each surface current electrode position. The signal was measured for all surface dipoles and both borehole 70 m intervals for each borehole current electrode position. The survey setup will provide 3D information about the electric resistivity and chargeability distribution along an around 300 m wide corridor around the receiver dipole line. The use of borehole electrodes is expected to provide good resolution towards depth in the northern part of the investigated area.
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.*	The aim of this project was to characterize the Granmuren mineralization with resistivity and induced polarization (IP) measurements.

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		The mineralization is characterized by an up to 150 m wide, steeply dipping zone of low resistivity. Within this zone there are multiple lenses of very low resistivity (<100Ωm). The zone becomes narrower in the eastern part of the survey area. Except for the most conductive parts, the mineralized zone also exhibits anomalous chargeability (IP effect). The anomalous volume appears to continue beneath the existing boreholes.
	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.	
Sample security	*The measures taken to ensure sample security*	Planning, setup, data collection, data processing and final reporting where all completed by mining consultants GeoVista AB in Sweden on behalf of Ragnar Metals. Geophysical data security has been ensured by using a professional Swedish consulting company.

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 security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	Exploration Permit Berga nr1 (2018:48:00) is owned 100% by Ragnar Metals (formerly Drake Resources). The tenure is located in Bergslagen District within the Municipality of Sala on Map page 11G. The Permit is valid until 28/03/2021. All regulatory and heritage approvals have been met and there are no known impediments to operate in the area.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	Granmuren is Ragnars (formerly Drake Resources) greenfield nickel, copper, cobalt discovery in the Bergslagen district of Sweden which has a very long and significant mining history dating back more than 1,000 years and contains over 6,000 known mineral deposits and prospects. Bergslagen was more recently recognized as a prospective region resulting in interest from mining and exploration companies over the last 10 years. The Tullsta Project contains the Granmuren Nickel Deposit which was discovered in 2012 by drilling of a VTEM survey anomaly.
Geology	*Deposit type, geological setting and style of mineralisation.*	Scandinavia and the adjoining Karelia Province in north-west Russia is one of the major nickel-copper provinces of the world. It includes the giant Pechenga deposit in Karelia, as well as recent discoveries at the Sakatti and Kevitsa Projects, both in Finland. Granmuren is an extension of the Svecofennian province which has played a long significant part of Finland's smelting and refining success. Scandinavian operations are both open pit and underground with typical grades of 0.25% to 1.0% nickel. Cobalt is locally present and has only been mined as an economic by-product from nickel-copper-rich sulphide deposits in the Bergslagen region. Nickel-copper sulphides hosted have been mined historically in the Bergslagen region from gabbroic rocks since the middle of the 18th Century. The small but significant Slättberg and Kuså deposits in the northern part of the Bergslagen region were important producers in the context of their time. Other deposits of this type are the Frustuna deposit in southern Bergslagen as well as the Ekedal and Gaddbo deposits in the central part of the region. Initially exploited for Cu

Section 2 Reporting of Exploration Results

		alone, their Ni component was obtained as a smelter product in the 1850-1880 period, before a drop in the Ni price caused by production from New Caledonia (where export of Ni began in 1875) effectively made them uneconomic. World production of Ni metal at this time was on the order of 1000 tpa. The Bergslagen Ni-Cu deposits received renewed interest during the two World Wars, owing to the strategic value of Ni and Cu in arms and ammunition production. Total production is estimated to be approximately 700-800 tonnes of Ni metal, which to put into context, amounts to approximately one week's production at BHPs Mount Keith Ni mine in Western Australia. In contrast to other base-metal deposit styles, sulphidic Ni-Cu had not been a focus for modern exploration companies in the region, possibly because the known deposits have been small in comparison with other Ni camps around the World. The blind, greenfields discovery of sulphidic Ni-Cu sulphides at Granmuren by Drake in 2012 stands a modern milestone in Bergslagen exploration history. The discovery validates the modern strategy of applying 21st century technologies such as electrical geophysics to historic mining belts and warrants further evaluation and exploration.
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.* *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	NA All drilling has been previously reported.
Data aggregation methods	*In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* *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.* *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	NA
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.*	The two combined models from the geophysical survey form a continuous body that extends from surface to below the boreholes and open to the west and to the north. Magnetic and gravity modelling also indicates a western to north-westerly plunging body which is supported by the results of this recent geophysical survey. Mineralisation is interpreted to follow this trend.

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	If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').	
Diagrams	*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.*	Appropriate maps, sections and diagrams are included in the report.
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 are reported and displayed in the diagrams
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.*	Everything meaningful and material is disclosed in the body of the report. Geological observations have been factored into the report.
Further work	*The nature and scale of planned further work (eg tests for lateral 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.*	Ragnar will review the existing "discovery" drilling with this geophysical model and design a drilling program to test the Granmuren mineralisation at depth.