

# Study Confirms Ni, Co, Cu & Li Potential in Yule North Project

## HIGHLIGHTS

- Petrographic study identifies Nickel Sulphide minerals at Balla Yule Prospect
- Nickel-Cobalt and Copper sulphides also identified
- Pegmatite identification confirms lithium target potential
- Archaean layered mafic-ultramafic intrusion Ni, Cu, Co, PGE, V & Ti targets
- Balla Yule magnetic target trend near Sholl Shear Zone largely untested
- Drill program planned for Q3/Q4 this year

Golden State Mining Limited (ASX code: "GSM" or the "Company") is pleased to announce the results of petrographic analysis of historic Reverse Circulation (RC) samples taken from previous drilling sites at the Balla Yule Prospect. The results have identified remobilised Nickel (Ni) and Nickel-cobalt (Ni-Co) minerals in addition to copper sulphides. These findings present an opportunity to also target magmatic layered Ni-Co-Cu sulphide style mineralisation (e.g. Radio Hill Ni, Cu, Co & Mt Sholl (B2) Ni, Cu) within an elliptical dome feature north of the highly prospective Sholl Shear Zone. This study also identified a pegmatite confirming the lithium target potential of the Balla Yule Prospect. A detailed technical note is provided in Appendix 1.

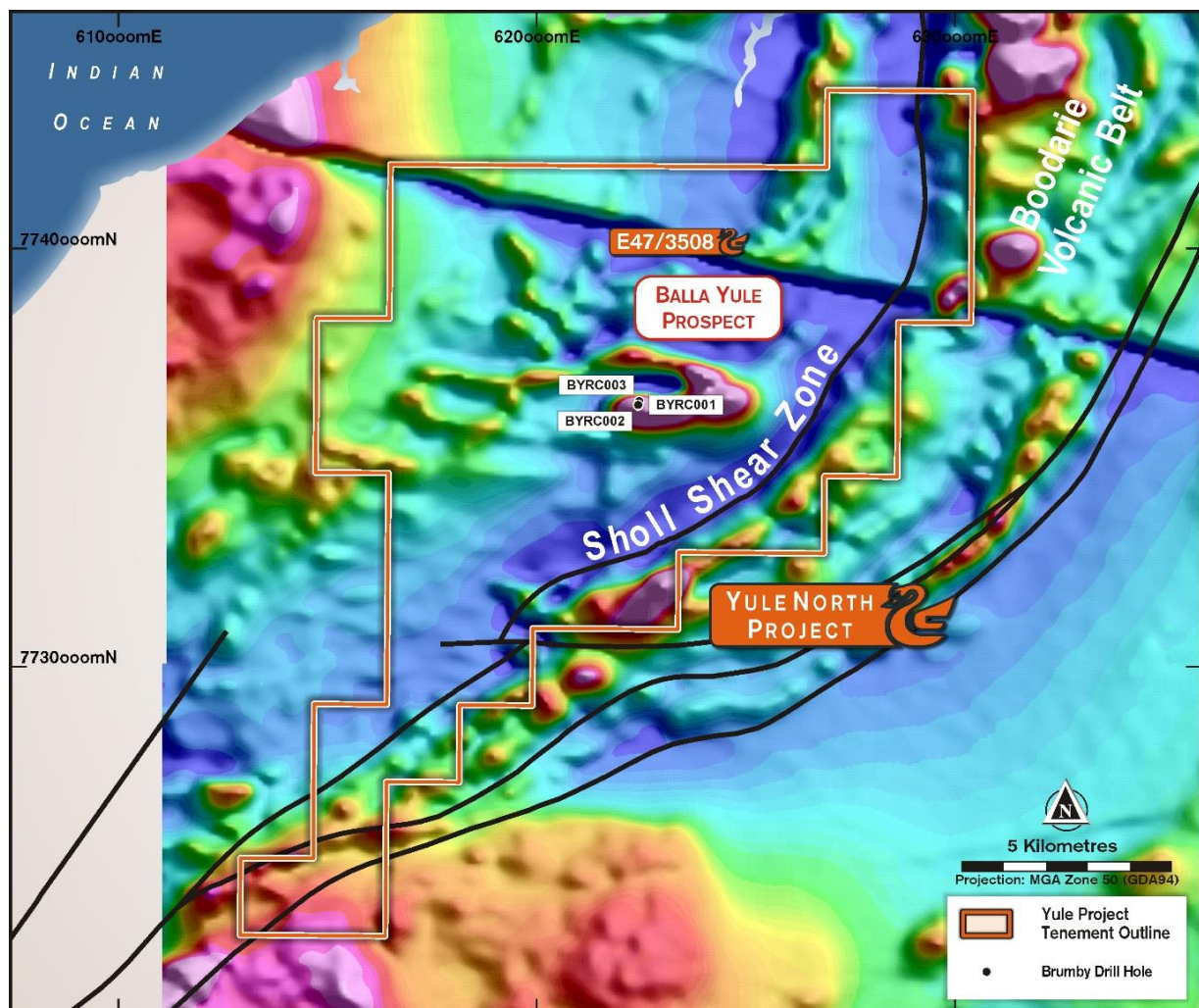


Figure 1: Balla Yule Prospect and Brumby drillhole collar locations over Total Magnetic Intensity.

Golden State's Managing Director, Michael Moore commented:

"The detailed petrographic work has delivered some encouraging indicators of a very attractive mineralisation style and presents an early targeting opportunity at the Yule North Project. With further geophysical refinements and surface geochemistry these findings will form the basis of a follow up drill program Q3/4 this year."

## YULE NORTH PROJECT – 100% GSM

### Balla Yule Prospect

In 2008 Brumby Resources Limited ('Brumby') drilled three RC drill holes (Figure 2) for a total of 375 metres, targeting vanadium in an east-west striking aeromagnetic target north of the Sholl Shear Zone. The target is considered analogous to an Archaean layered mafic-ultramafic intrusion of the type recognised elsewhere in the western and central parts of the North Pilbara Craton. These layered intrusions are prospective for Ni-Cu, Ni-Cu-Co and Ni-Cu-PGE sulphide deposits, in addition to chromite and Fe-Ti-V oxide deposits found in association with magnetite, and gold mineralisation. Examples of significant deposits hosted within these intrusions with similar mineralisation style are Radio Hill Ni-Cu deposit hosted in microgabbro and the Mt Sholl (B2) Ni-Cu deposit hosted in gabbro and plagioclase pyroxenite.

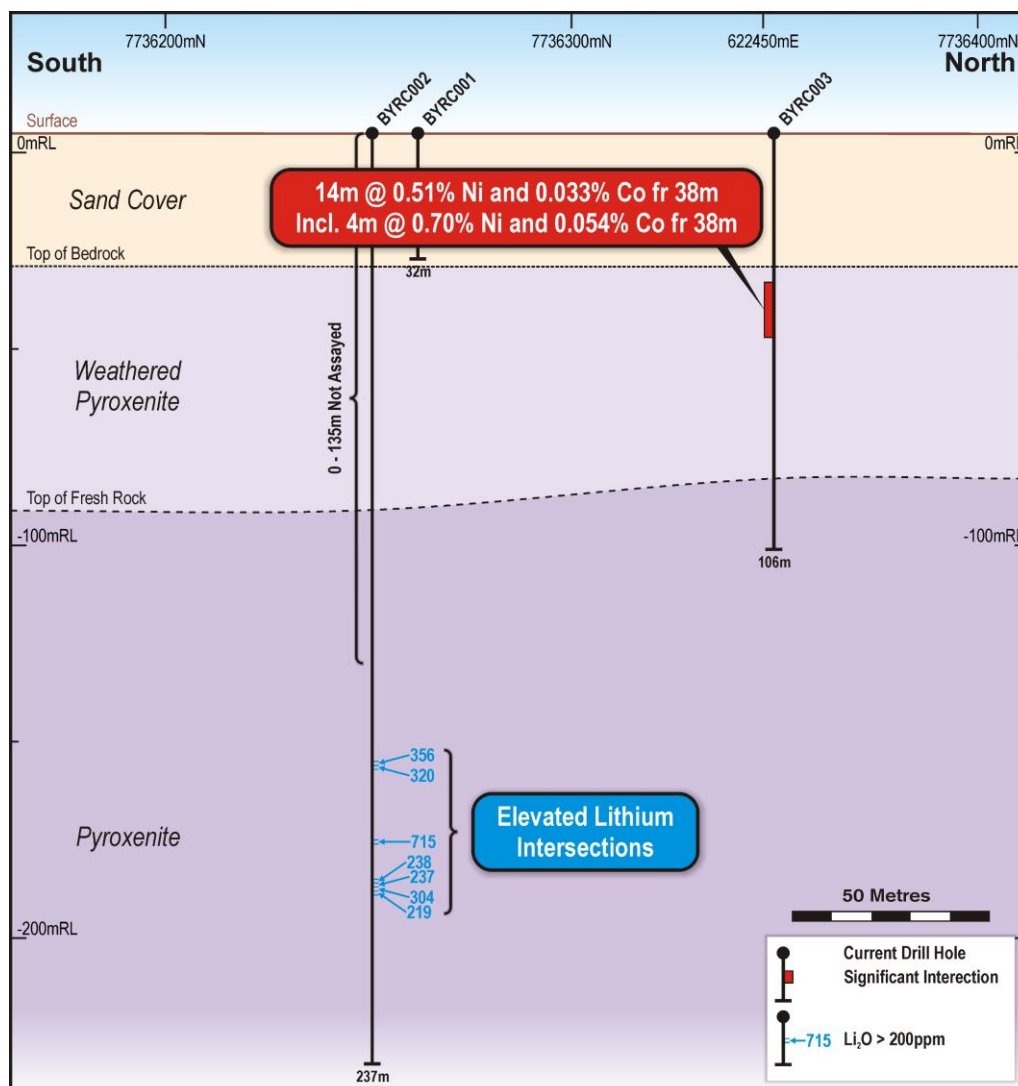


Figure 2: Drill section looking West showing Brumby drillholes, significant intersections and Interpreted Geology.

The most significant interval recorded a down hole width of 14 metres of 0.51% Ni & 0.033% Co from 38 metres (bedrock surface) including 4 metres at 0.70% Ni, 0.048% Co in BYRC003 (See Figure 2) within what Brumby interpreted as a weathered and clay-rich serpentinite. GSM interprets this intersection to be evidence of secondary nickel enrichment above the layered mafic-ultramafic intrusion.

Another notable intersection recorded in BYRC002 was seven single metre samples containing elevated lithium values between 160 metres and 194 metres. These samples contained  $\text{Li}_2\text{O}$  values over 200ppm  $\text{Li}_2\text{O}$  with the highest values of 715ppm  $\text{Li}_2\text{O}$ . GSM interprets these elevated lithium values as a vector to a potential larger lithium-bearing pegmatite body at depth.

A summary of results for BYRC002 and BYRC003 results is shown in Appendix 2.

### Petrographic and Electron Microanalysis

Petrographical analysis on remnant spoil (not necessarily taken from the down hole mineralised intercept) collected from the three Brumby collar locations identified a hydrothermally altered chromite and magnetite-bearing pyroxenite and a tourmaline-bearing pegmatite unit (See previous announcement dated 2 April 2019). Two samples were collected from pegmatitic (micaceous) material at the BYRC002 collar location and sent for assay, but no significant  $\text{Li}_2\text{O}$  results were returned.

The drill cutting samples were also analysed under the scanning electron microscope to produce back-scattered electron detector (BSE) images (See Figure 3 and appendix 1). Of the samples investigated, 12 out of 22 showed fine grained nickel sulphide content consisting of millerite ( $\text{NiS}$ ) and pentlandite. Cobalt has been detected as a component of some nickel sulphide grains, i.e. of both pentlandite and possible polydymite ( $\text{Ni}_2+\text{Ni}_2^3+\text{S}_4$ ). Chalcopyrite is found as inclusions within some of these sulphides.

These findings support the Ni-Co-Cu potential within a layered mafic-ultramafic intrusion at depth at the Balla Yule prospect.

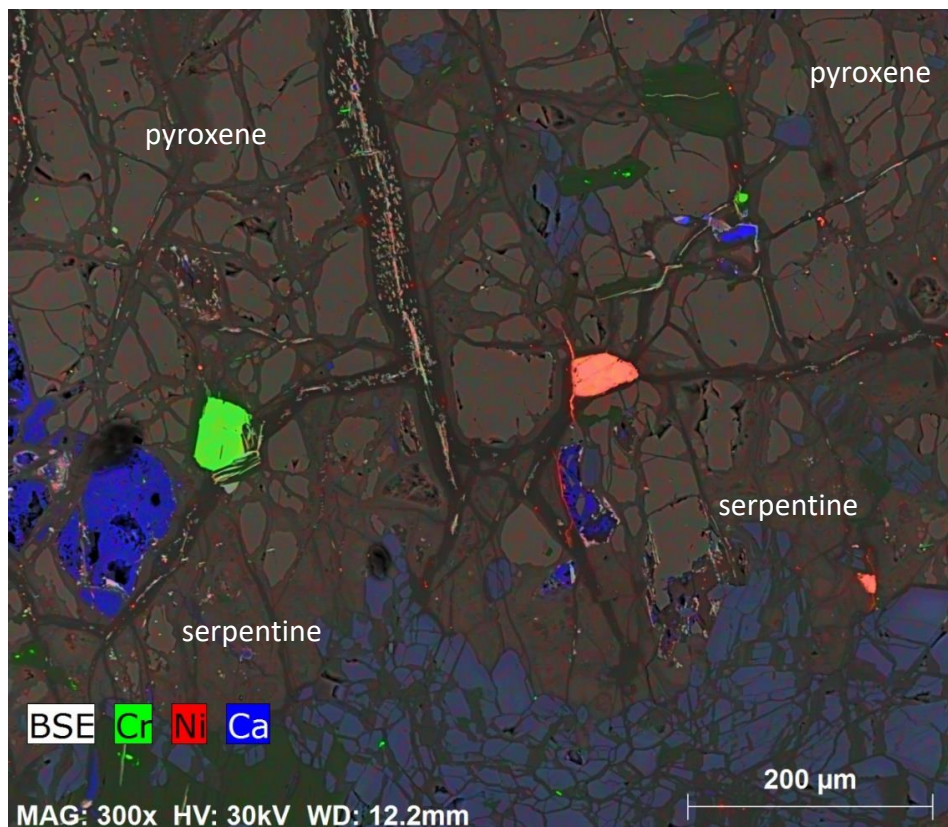


Figure 3: BSE map of sample BYRC01FR, cutting D, with Cr-Ni-Ca distributions shown.

## Conclusions

The occurrence of nickel sulphide minerals in fresh rock in addition to copper and cobalt bearing sulphide species is significant and suggests that the original interpretation of a nickel laterite occurrence, based on limited evidence, may be incomplete, and that hydrothermal nickel enrichment or remobilisation has occurred. GSM may have an attractive Ni sulphide target to test and an opportunity to target Archaean magmatic layered Ni-Co-Cu sulphides in this vicinity in addition to other Ni-Co mineralisation styles.

Examples of significant deposits (JORC compliant resources unless stated) hosted within these intrusions are:

- Radio Hill project: 4.02 Mt @ 0.51% Ni and 0.88% Cu hosted in a microgabbro unit
- Mt Sholl (B2) project: 5.96 Mt @ 0.53% Ni and 0.62% Cu hosted in gabbro and plagioclase pyroxenite

These findings, together with previous observations, also raise the possibility of other target types:

- Remobilised nickel sulphides (esp. millerite) concentrated in structurally controlled zones.
- Remobilised nickel in silicate minerals concentrated in structurally controlled zones.

The elevated lithium assays in conjunction with the identified tourmaline bearing pegmatite highlights the discovery potential for a proximal larger pegmatite body at depth at the Balla Yule Prospect. These findings also highlight the regional potential for lithium bearing pegmatite occurrences within the largely undercover project area.

## Further Exploration Planned

Follow up geochemical sampling and a ground based geophysical survey are planned in early Q3 this year. This work is intended to define future drilling targets which is required to define the extent and depth potential of the anomalous nickel and cobalt assays recorded at the Balla Yule Prospect.

Follow up drilling locations will also be based on refining geophysical interpretations of surveys completed by previous explorers and government. Drilling is expected to be started during Q3/Q4 this year subject to required approvals.

## For further information please contact:

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- Trevor Beazley/Nanne van 't Riet (Maiden Capital) on 0419 939 820 / 0400 902 940.

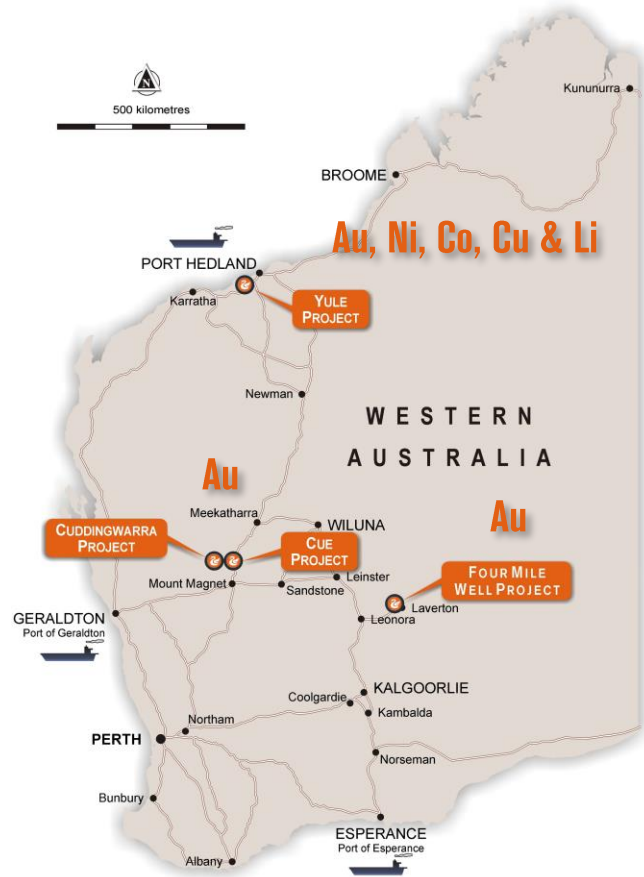
## About Golden State Mining

GSM is a Western Australian minerals exploration company listed on the Australian Securities Exchange (ASX: 'GSM'). The company's prime focus is the exploration and development of three highly prospective Western Australian gold project areas.

## MURCHISON GOLD PROJECT

The company's cornerstone project is located adjacent to the historical town of Cue in the Murchison district.

- Approximately 645km by road northeast of Perth
- 175km<sup>2</sup> of tenements including Cuddingwarra and Big Bell South
- Targeting large gold systems
- Proven Gold Region - produced over 7Moz of gold the past 126 years
- Day Dawn/Great Fingall mine (1.7Moz production) ~5km along trend
- Historic mines operated until around the 1920's exploiting high grade +15g/t gold shoots



## YULE PROJECT

- The Yule Project is prospective for gold, base metals and lithium
- Located between 35km and 65km southwest of Port Hedland in the Northern Pilbara region of Western Australia
- Three granted exploration licences for a total of 434km<sup>2</sup> capture a significant portion of the Pilbara region
- Archaean layered mafic-ultramafic intrusion Ni, Cu, Co, PGE, V & Ti targets at Yule North
- Balla Yule magnetic target trend near Sholl Shear Zone largely untested
- Targets identified from airborne geophysics at Yule South

## FOUR MILE WELL PROJECT

- The Four Mile Well Project is located 9km to the north of the Laverton townsite in the Eastern Goldfields and consists of a single 38 block exploration licence (approximately 107 km<sup>2</sup>)
- The region is well endowed with a number of major gold and nickel deposits within close proximity to the Four Mile Well Project area
- Significant nickel sulphide deposits (Windarra and Mt Windarra) are located to the west of the project area and the 1.3Moz Lancefield gold deposit is located less than 1km to the south

## **FORWARD LOOKING STATEMENTS**

As a result of a variety of risks, uncertainties and other factors, actual events, trends and results may differ materially from any forward looking and other statements mentioned or implied herein not purporting to be of historical fact. In certain cases, forward-looking information may be identified by (without limitation) such terms as "anticipates", "believes", "should", "could", "estimates", "target", "likely", "plan", "expects", "may", "intend", "shall", "will", or "would". Any statements concerning mining reserves, resources and exploration results may also be forward looking in that they involve estimates based on assumptions. Forward looking statements are based on management's beliefs, opinions and estimates as of the respective dates they are made. The Company does not assume any obligation to update forward looking statements even where beliefs, opinions and estimates change or should do so given changed circumstances and developments.

## **COMPETENT PERSONS STATEMENT**

The information in this report that relates to Exploration results, Mineral Resources or Ore Reserves is based on information compiled by Geoff Willetts who is a member of the Australasian Institute of Geoscientists (AIG). Geoff Willetts is the Exploration Manager and a full-time employee of Golden State Mining Limited (GSM) and holds shares and options in the Company.

Information in this report relating to Lithium Exploration and Petrographical results is based on information compiled by Dr Marcus Sweetapple, a consultant to the Company, who has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined by the 2012 Edition of the Australasian Code for reporting of Exploration Results, Mineral Resources and Ore Reserves. Dr Sweetapple is a member of the Australian Institute of Geoscientists, and consents to the inclusion of the data in the form and context in which it appears.

## APPENDIX 1

### Technical Note on Balla Yule Prospect

In 2008 a low level, high resolution aeromagnetic-radiometric survey outlined a high amplitude magnetic anomaly (See Figure 1) in the centre of the current Yule North Project area. This location is situated approximately 2 kilometres to the north of the Sholl shear zone which is a multiphase strike-slip fault delineating an interpreted tectonic domain boundary (Smith et. al., 1998). Data interpretation and modelling by Southern Geoscience indicated a major 'v' shaped ultramafic intrusion with an overall 11-kilometre-long, east- west striking target area which attains a maximum width of 600 metres and dips to the south at approximately 75 degrees. A layered intrusion was interpreted based on modelling of three distinct southerly dipping magnetic units of variable magnetic intensity within the overall aeromagnetic anomaly. Considerable thickening of the more magnetic units within the overall target area is attributed to refolding and structural complexity.

It is important to comment that the Balla Yule prospect is one example of one of a suite of Archaean layered mafic-ultramafic intrusions present in the western and central parts of the North Pilbara Craton. These layered intrusions are prospective for Ni-Cu, Ni-Cu-Co and Ni-Cu-PGE sulphide deposits, in addition to chromite and Fe-Ti-V oxide deposits found in association with magnetite, and Au mineralisation (Hoatson & Sun, 2002). These intrusions are amongst the oldest mineralized orthomagmatic systems in the world, at around 2.9 billion years old. Examples of significant deposits hosted within these intrusions are:

- Munni Munni project: 24 Mt @ 2.9 g/t PGE +Au, hosted in a plagioclase websterite layer
- Radio Hill project: 4.02 Mt @ 0.51% Ni and 0.88% Cu hosted in a microgabbro unit
- Mt Sholl (B2) project: 5.96 Mt @ 0.53% Ni and 0.62% Cu hosted in gabbro and plagioclase pyroxenite

### Previous Drilling

Brumby Resources Limited drilled three RC drill holes from a planned six-hole program for a total of 375 metres, targeting vanadium in the southern limb of the aeromagnetic target, considered by Brumby to be a target analogous to the layered gabbro hosted Balla Balla magnetite project (resource of 456 Mt @ 45% Fe, 0.66% V<sub>2</sub>O<sub>5</sub> and 14% TiO<sub>2</sub> in concentrate, (Aurox Resources Limited ASX announcement, 15 December 2009). This resource is hosted by a gabbro sequence under the shallow coastal sand plain.

Drilling problems encountered during the program resulted in abandonment of two holes due to approximately 34 metres of overlying alluvial sand cover (See Figure 2). Despite this the deepest hole (BYRC002) reached a depth of 237 metres. Multi-element assays generally recorded no significant results. One notable exception was the intersection of seven single metre samples containing elevated lithium values between 160 metres and 194 metres. These samples had Li<sub>2</sub>O values over 200ppm Li<sub>2</sub>O with the highest values of 715ppm Li<sub>2</sub>O. Although not necessarily significant, this result is anomalous so does highlight the potential for Lithium bearing pegmatite occurrences within this largely unexplored area of the northern Pilbara.

Drill hole BYRC003 reached a downhole depth of 106 metres before being abandoned. The most significant interval recorded a down hole width of 14 metres of 0.51% Ni & 0.033% Co from 38 metres. Brumby interpreted this intersection to be a Nickel-Cobalt laterite occurrence although no detailed logging was provided to support this interpretation. This interval included a higher-grade section of 4 metres at 0.70% Ni, 0.048% Co. from 38 metres. This encouraging Nickel-Cobalt (Ni, Co) intersection was hosted within what Brumby interpreted as a weathered and clay-rich serpentinite. Brumby recommended detailed petrographic work and a broad spaced shallow drilling programme to map out the dimensions of the Ni-Co-occurrence and its overall grade.

## Petrographic and Electron Microanalysis

The three drill collars from Brumby Resources 2010 RC drilling campaign at the Balla Yule project were successfully located by Golden State's geologists and individually identified. A total of seventeen individual fresh and oxidised cuttings were collected from the three Brumby collar locations for petrographical analysis (See Table 1). In all cases, the material collected did not have any spatial control, other than their drillhole number, due to the almost complete decay of the original RC bags. Therefore, cuttings were essentially sampled at random from remnant spoil, and not necessarily taken from the mineralised intercept.

The petrographic and electron microanalysis was completed by Dr Marcus Sweetapple at the CSIRO ARRC facility in Kensington, Perth. Initial findings on all the drill cuttings identified a hydrothermally altered chromite and magnetite-bearing pyroxenite, which suggested the possibility of upgrading the Nickel-Cobalt content by a hydrothermal fluid.

HoleID	Sample	Hand specimen name	No. of cuttings	Petrographic name	Magnetism
BYRC001	BYRC001-FR	Meta-ultramafic	5	Pyroxene bastite*	Weak-strong
BYRC002	BYRC002-OX	Meta-ultramafic	1	Amphibole bastite	Weak
		Aplite	1	Fine grained pegmatite	None
BYRC002	BYRC002-FR	Meta-ultramafic	3	Pyroxene bastite	Strong
BYRC003	BYRC003-OX	Meta-ultramafic	2	Bastite saprolite and silcrete	None-weak
		Meta-ultramafic	2	Tremolite	Weak-strong
BYRC003	BYRC003-FR	Meta-ultramafic	3	Altered clinopyroxenite	Strong

Table 1: Summary of Yule-Balla petrographic slides with rock types and key features.

FR = fresh (unweathered) cuttings, OX = variably oxidised cuttings.

*\*Bastite is an alteration texture after pyroxene*

Further analysis on another cutting from BYRC002 identified a tourmaline-bearing pegmatite unit which may explain the presence of the numerous anomalous lithium values. Two samples were collected from pegmatitic (micaceous) material at the BYRC002 collar location and sent for assay with no significant Li<sub>2</sub>O results returned.

In addition to the petrographic study all drill cutting samples were also analysed and chemical elements mapped under the scanning electron microscope to produce backscattered images showing compositional differences (See Figure 1-4) from interactions of the electron beam with atoms from the sample surface. Of the samples investigated, 12 out of 22 showed nickel sulphide content. The nickel and other sulphide content are all fine grained, being less than 50 microns.

The main nickel sulphide minerals provisionally identified from the proportions of the different elements present are millerite (NiS) and pentlandite ((Fe,Ni)<sub>9</sub>S<sub>8</sub>). Millerite is significant for its high nickel content (theoretically 64.6 wt%). Millerite appears to be paragenetically late, occurring within late dolomite in some locations. This helps supports a remobilisation hypothesis.

Cobalt has been detected as a component of some nickel sulphide grains, i.e. of both pentlandite and possible polydymite (Ni<sub>2</sub>+Ni<sub>2</sub><sup>3</sup>+S<sub>4</sub>). Pentlandite may have ~2-21.7 wt% Co, and polydymite may have ~3-7% Co content. Chalcopyrite is found as inclusions within some of these sulphides.

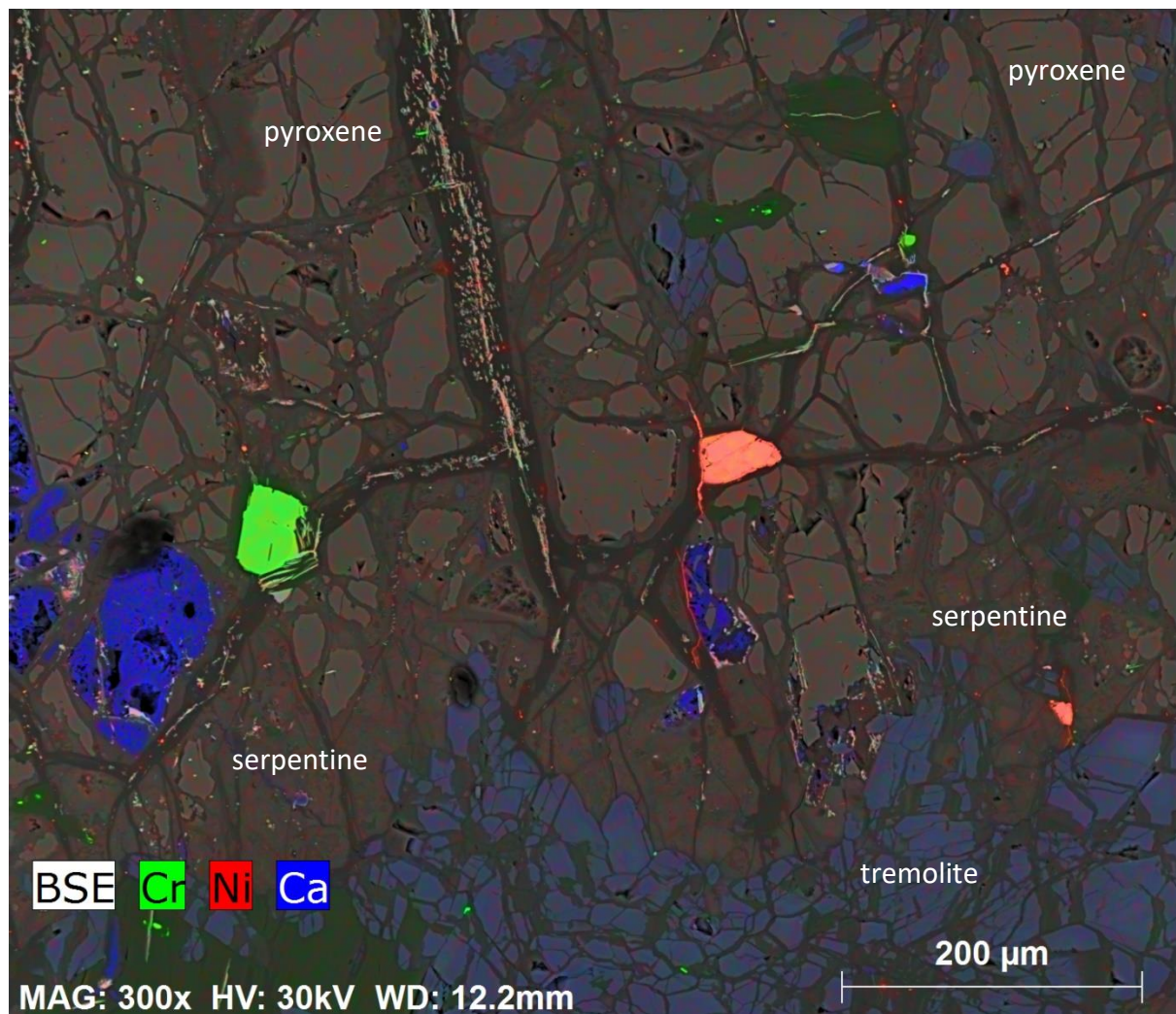


Figure 1: BSE SEM EDS map of sample BYRC01FR, cutting D, with Cr-Ni-Ca distributions shown.

Note: The bright blue mineral is dolomite, the bright green grains are chromite (note variation in grainsize), and the pink-orange minerals are nickel sulphides (pentlandite or cobaltian pentlandite is suggested). The fine filaments of nickel sulphide adjoining the largest grain of pentlandite are millerite (accompanied by chalcopyrite). The minor light grey interstitial mineral is secondary magnetite. Major minerals present are as noted on the image.

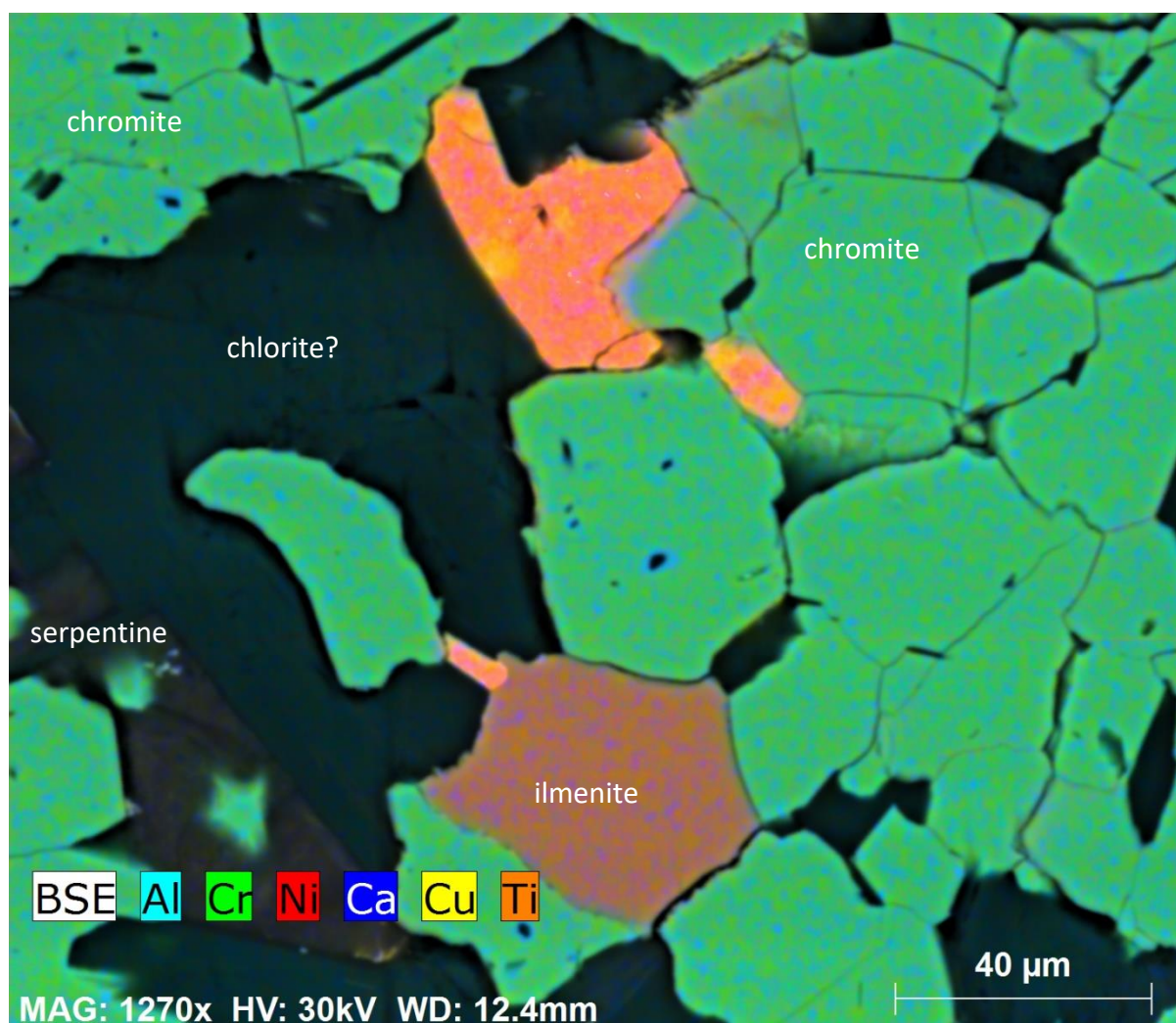


Figure 2: BSE SEM EDS map of sample BYRC02FR, cutting B, with Al-Cr-Ni-Ca-Cu-Ti distributions shown

Note: This image is locally dominated by polygonal (recrystallised?) chromite (green). The pink orange mineral is suggested to be polydymite ( $\text{Ni}_2+\text{Ni}_3+2\text{S}_4$ ) based on stoichiometry (less nickel and more sulphur than millerite); it contains minor cobalt content (to ~7 wt%). The yellowish spots or patches in the polydymite are chalcopyrite inclusions. Major minerals present are as noted on the image.

Note that the apparent hazy or patchy colours are in some images relate to background interferences, e.g. in this image, the blue patchiness in chromite and ilmenite. This also relates to the higher magnification of this image. This can be readily resolved by referring back to the original BSE SEM image without mapping colours.

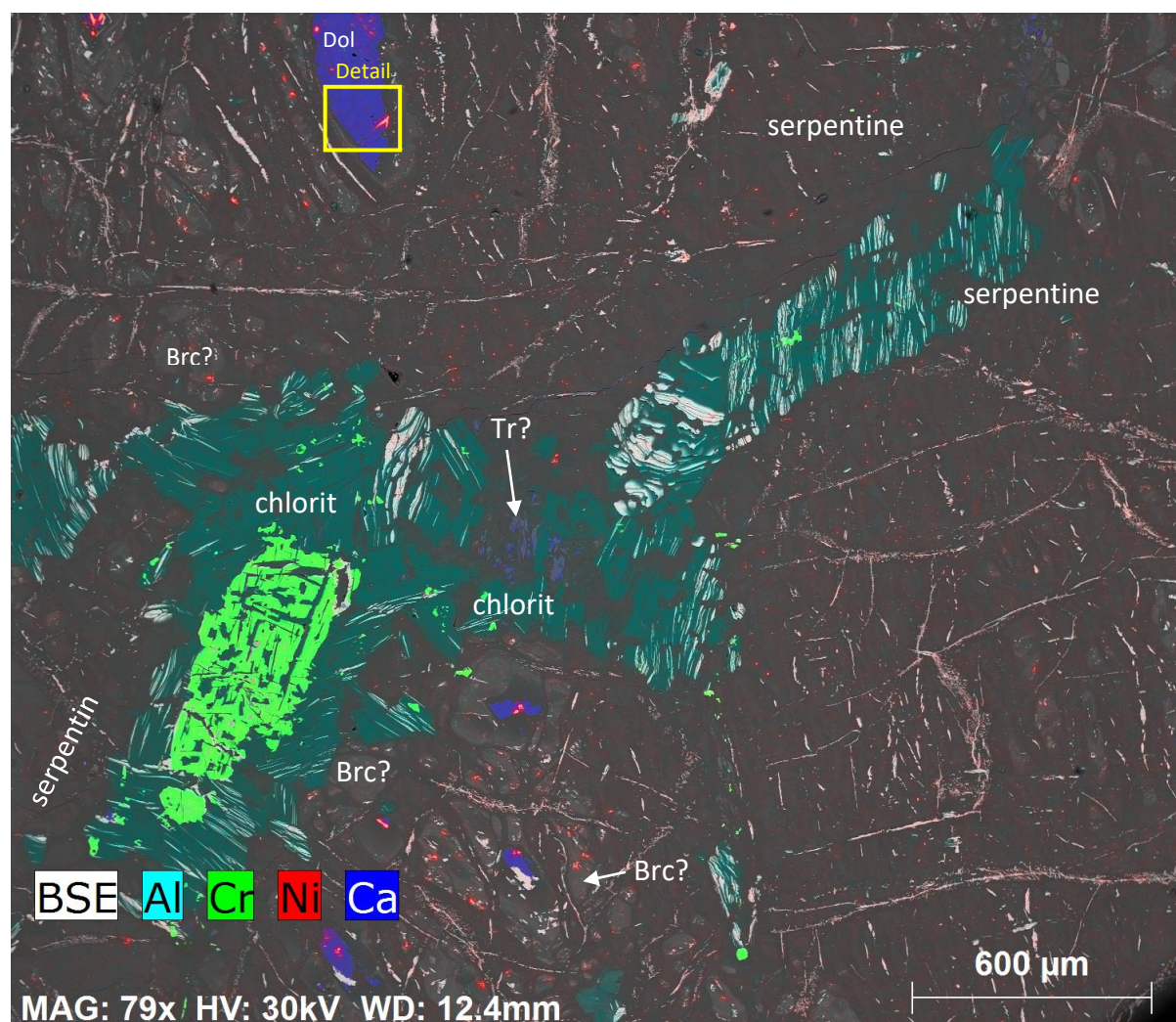


Figure 3: BSE SEM EDS map of sample BYRC02FR, cutting A, with mapped Al-Cr-Ni-Ca distributions as shown

Note: The bright green grains are chromite, the pervasive light grey bladed to skeletal or dendritic grains are secondary magnetite. The bulk of this image is comprised of serpentine group minerals (as indicated), which have almost completely replaced the original pyroxene here. The slightly lighter grey mineral is probably mainly brucite ( $\text{MgO}$ ; Brc); minor tremolite? (Tr) is identified in the centre of the image (dull blue). The aqua colour of chlorite is an indicator of minor Cr content; this is confirmed by EDS spot analyses containing a few percent of  $\text{Cr}_2\text{O}_3$ .

The most important feature of this image is the common occurrence of very fine disseminated nickel sulphides (yellowish-red specks). The larger of these tend to show a spatial association with dolomite (intense blue). The composition of all of these grains has not been investigated, but they are highly likely to be overwhelmingly millerite ( $\text{NiS}$ ). The bulk of these grains are  $\leq 20 \mu\text{m}$  in grainsize.

The detailed area (top) is shown in the following image.

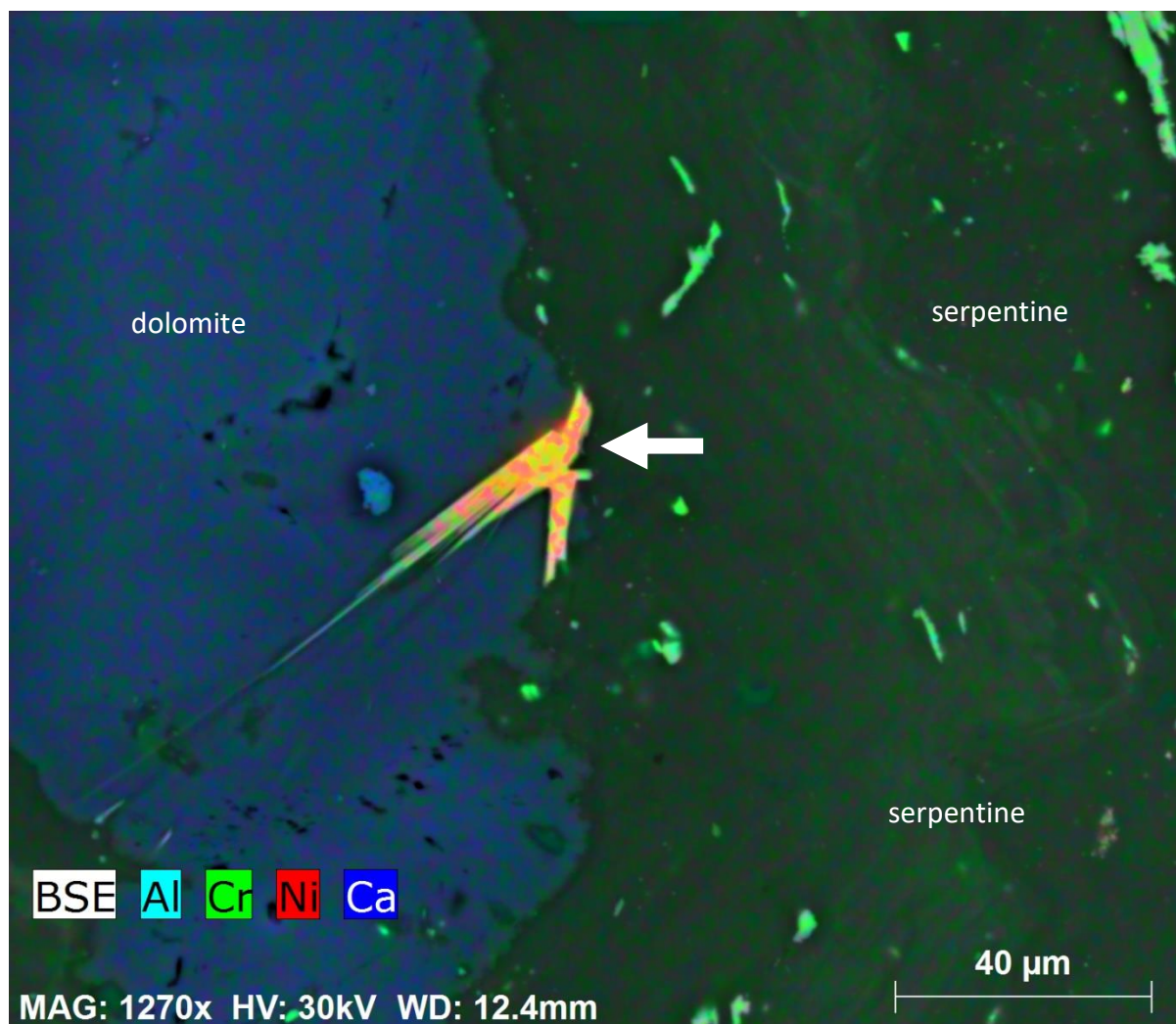


Figure 4: BSE SEM EDS map of sample BYRC02FR, cutting A, with mapped Al-Cr-Ni-Ca distributions.

Note: The mottled red-yellow grain is millerite (arrow), prominently displaying its characteristic fibrous habit (hexagonal crystal system), hosted in dolomite. The fine disseminated pale greenish grains are magnetite; the brighter lime green grains here are chromite.

Again, note that the bulk of the patchy green colour relates to background interference seen at higher magnification, and (mostly) does not indicate the presence of Cr (except for a few small sparse bright lime green grains around the centre of the image).

## Conclusions

The occurrence of nickel sulphide minerals in addition to copper and cobalt bearing sulphide species in the historic RC drill cuttings is significant considering the anomalous Ni and Co assay results from BYRC002. This is even more significant given that the drill cuttings were essentially sampled at random from remnant spoil, and not necessarily taken from the elevated Ni-Co values intercept. This suggests that the original interpretation of a nickel laterite occurrence may be incomplete, and that hydrothermal nickel enrichment or remobilisation has occurred. This presents an opportunity to target magmatic layered Ni-Co-Cu sulphides in this vicinity.

These findings, together with previous observations, also raise the possibility of other target types:

- Remobilised nickel sulphides (esp. millerite) concentrated in structurally controlled zones
- Secondary nickel enrichment in truncated saprolite or saprock developed above the ultramafic intrusion
- Remobilised nickel silicates concentrated in structurally controlled zones
- Lithium (LCT) pegmatites at depth

## References

D.M. Hoatson & S. Sun, 2002, Archaean Layered Mafic-Ultramafic Intrusions in the West Pilbara Craton, Western Australia: A Synthesis of Some of the Oldest Orthomagmatic Mineralizing Systems in the World. *Economic Geology* Vol. 97, pp. 847-872.

J.B. Smith, M.E. Barley, D.I. Groves, B. Krapez, N.J. McNaughton, M.J. Bickle & H.J. Chapman, 1998. The Sholl Shear Zone, West Pilbara: evidence for a domain boundary structure from integrated tectonostratigraphic analyses, SHRIMP U-Pb dating and isotopic and geochemical data of granitoids.

*Precambrian Research*, Volume 88, Issues 1–4, March 1998, Pages 143-171.

## APPENDIX 2

## Brumby Assay Results with significant assays highlighted

Hole_ID	MGA East	MGA North	Dip	Azimuth	EOH	From	To	Sample No	Sample Type	Ni ppm	Co ppm	Cu ppm	Li <sub>2</sub> O ppm
BYRC002	622428	773622	-90	360	237	135	139	581201	4m Comp	1341	89	124	not assayed
BYRC002	622428	773622	-90	360	237	139	143	581202	4m Comp	1331	91	46	not assayed
BYRC002	622428	773622	-90	360	237	143	147	581203	4m Comp	2344	140	BDL	not assayed
BYRC002	622428	773622	-90	360	237	147	151	581204	4m Comp	2205	134	BDL	not assayed
BYRC002	622428	773622	-90	360	237	151	155	581205	4m Comp	1960	121	5	not assayed
BYRC002	622428	773622	-90	360	237	155	159	581206	4m Comp	1042	82	41	not assayed
BYRC002	622428	773622	-90	360	237	160	161	581427	1m Resplit	989	76	42	356
BYRC002	622428	773622	-90	360	237	161	162	581428	1m Resplit	808	70	17	320
BYRC002	622428	773622	-90	360	237	162	163	581429	1m Resplit	1450	98	143	124
BYRC002	622428	773622	-90	360	237	163	164	581430	1m Resplit	1724	108	232	67
BYRC002	622428	773622	-90	360	237	164	165	581431	1m Resplit	2114	137	27	27
BYRC002	622428	773622	-90	360	237	165	166	581432	1m Resplit	1961	134	88	34
BYRC002	622428	773622	-90	360	237	166	167	581433	1m Resplit	1906	132	75	51
BYRC002	622428	773622	-90	360	237	167	168	581434	1m Resplit	2059	130	26	37
BYRC002	622428	773622	-90	360	237	168	169	581435	1m Resplit	2023	130	29	38
BYRC002	622428	773622	-90	360	237	169	170	581436	1m Resplit	2068	133	17	28
BYRC002	622428	773622	-90	360	237	170	171	581437	1m Resplit	1994	131	38	57
BYRC002	622428	773622	-90	360	237	171	172	581438	1m Resplit	2058	134	27	44
BYRC002	622428	773622	-90	360	237	172	173	581439	1m Resplit	1923	127	62	86
BYRC002	622428	773622	-90	360	237	173	174	581440	1m Resplit	2266	150	19	17
BYRC002	622428	773622	-90	360	237	174	175	581441	1m Resplit	2251	152	21	14
BYRC002	622428	773622	-90	360	237	175	176	581442	1m Resplit	2188	149	28	17
BYRC002	622428	773622	-90	360	237	176	177	581443	1m Resplit	2218	151	40	25
BYRC002	622428	773622	-90	360	237	177	178	581444	1m Resplit	2193	151	43	24
BYRC002	622428	773622	-90	360	237	178	179	581445	1m Resplit	2272	151	36	26
BYRC002	622428	773622	-90	360	237	179	180	581446	1m Resplit	1998	137	28	56
BYRC002	622428	773622	-90	360	237	180	181	581447	1m Resplit	631	48	24	715
BYRC002	622428	773622	-90	360	237	181	182	581448	1m Resplit	1903	125	31	181
BYRC002	622428	773622	-90	360	237	182	183	581449	1m Resplit	2274	145	25	52
BYRC002	622428	773622	-90	360	237	183	184	581450	1m Resplit	2343	142	29	43
BYRC002	622428	773622	-90	360	237	184	185	581451	1m Resplit	2499	157	31	12
BYRC002	622428	773622	-90	360	237	185	186	581452	1m Resplit	2346	148	30	14
BYRC002	622428	773622	-90	360	237	186	187	581453	1m Resplit	2298	148	26	31
BYRC002	622428	773622	-90	360	237	187	188	581454	1m Resplit	1900	128	135	195
BYRC002	622428	773622	-90	360	237	188	189	581455	1m Resplit	1455	98	107	189
BYRC002	622428	773622	-90	360	237	189	190	581456	1m Resplit	1332	89	134	146
BYRC002	622428	773622	-90	360	237	190	191	581457	1m Resplit	1312	90	118	238
BYRC002	622428	773622	-90	360	237	191	192	581458	1m Resplit	863	70	63	237
BYRC002	622428	773622	-90	360	237	192	193	581459	1m Resplit	1012	76	81	304
BYRC002	622428	773622	-90	360	237	193	194	581460	1m Resplit	885	67	77	219
BYRC002	622428	773622	-90	360	237	195	199	581216	4m Comp	996	64	76	not assayed
BYRC002	622428	773622	-90	360	237	199	203	581217	4m Comp	1570	101	46	not assayed
BYRC002	622428	773622	-90	360	237	203	207	581218	4m Comp	1821	117	12	not assayed
BYRC002	622428	773622	-90	360	237	207	211	581219	4m Comp	2008	127	8	not assayed
BYRC002	622428	773622	-90	360	237	211	216	581220	5Comp	1779	107	3	not assayed

BYRC003	622450	7736350	-90	360	106	38	39	581505	1m Resplit	4836	576	not assayed	not assayed
BYRC003	622450	7736350	-90	360	106	39	41	581221	2m Comp	5663	663	40	not assayed
BYRC003	622450	7736350	-90	360	106	39	40	581506	1m Resplit	7268	662	not assayed	not assayed
BYRC003	622450	7736350	-90	360	106	40	41	581507	1m Resplit	8959	494	not assayed	not assayed
BYRC003	622450	7736350	-90	360	106	41	42	581508	1m Resplit	6787	419	not assayed	not assayed
BYRC003	622450	7736350	-90	360	106	42	43	581509	1m Resplit	5151	358	not assayed	not assayed
BYRC003	622450	7736350	-90	360	106	43	44	581510	1m Resplit	3759	231	not assayed	not assayed
BYRC003	622450	7736350	-90	360	106	44	45	581511	1m Resplit	4320	244	not assayed	not assayed
BYRC003	622450	7736350	-90	360	106	45	46	581512	1m Resplit	4641	270	not assayed	not assayed
BYRC003	622450	7736350	-90	360	106	46	47	581513	1m Resplit	4574	230	not assayed	not assayed
BYRC003	622450	7736350	-90	360	106	47	48	581514	1m Resplit	4824	272	not assayed	not assayed
BYRC003	622450	7736350	-90	360	106	48	49	581515	1m Resplit	3966	221	not assayed	not assayed
BYRC003	622450	7736350	-90	360	106	49	50	581516	1m Resplit	4254	222	not assayed	not assayed
BYRC003	622450	7736350	-90	360	106	50	51	581517	1m Resplit	3887	212	not assayed	not assayed
BYRC003	622450	7736350	-90	360	106	51	52	581518	1m Resplit	3982	217	not assayed	not assayed
BYRC003	622450	7736350	-90	360	106	53	57	581225	4m Comp	2774	161	30	not assayed
BYRC003	622450	7736350	-90	360	106	57	61	581226	4m Comp	2559	142	25	not assayed
BYRC003	622450	7736350	-90	360	106	61	65	581227	4m Comp	2630	140	24	not assayed
BYRC003	622450	7736350	-90	360	106	65	69	581228	4m Comp	2138	114	20	not assayed
BYRC003	622450	7736350	-90	360	106	69	73	581229	4m Comp	1889	104	13	not assayed
BYRC003	622450	7736350	-90	360	106	73	77	581230	4m Comp	1740	96	10	not assayed
BYRC003	622450	7736350	-90	360	106	77	81	581231	4m Comp	1732	95	9	not assayed
BYRC003	622450	7736350	-90	360	106	81	85	581232	4m Comp	1751	97	4	not assayed
BYRC003	622450	7736350	-90	360	106	85	89	581233	4m Comp	2206	121	BDL	not assayed
BYRC003	622450	7736350	-90	360	106	89	90	581556	1m Resplit	2618	156	30	5
BYRC003	622450	7736350	-90	360	106	90	91	581557	1m Resplit	2684	161	34	5
BYRC003	622450	7736350	-90	360	106	91	92	581558	1m Resplit	2659	161	31	6
BYRC003	622450	7736350	-90	360	106	92	93	581559	1m Resplit	2787	170	33	6
BYRC003	622450	7736350	-90	360	106	93	94	581560	1m Resplit	2735	166	33	7
BYRC003	622450	7736350	-90	360	106	94	95	581561	1m Resplit	2897	181	36	8
BYRC003	622450	7736350	-90	360	106	95	96	581562	1m Resplit	2780	171	32	6
BYRC003	622450	7736350	-90	360	106	96	97	581563	1m Resplit	2902	179	34	8
BYRC003	622450	7736350	-90	360	106	97	98	581564	1m Resplit	2702	168	32	7
BYRC003	622450	7736350	-90	360	106	98	99	581565	1m Resplit	2616	161	31	9
BYRC003	622450	7736350	-90	360	106	99	100	581566	1m Resplit	2724	168	33	6
BYRC003	622450	7736350	-90	360	106	100	101	581567	1m Resplit	2577	164	34	6
BYRC003	622450	7736350	-90	360	106	101	102	581568	1m Resplit	2518	157	37	10
BYRC003	622450	7736350	-90	360	106	102	103	581569	1m Resplit	2444	159	39	10
BYRC003	622450	7736350	-90	360	106	103	104	581570	1m Resplit	2550	161	32	8
BYRC003	622450	7736350	-90	360	106	104	105	581571	1m Resplit	2634	162	30	9
BYRC003	622450	7736350	-90	360	106	105	106	581572	1m Resplit	2208	148	59	104

- All drill samples were analysed by Genalysis using B/AAS method for base metals.
- All interval depths are down hole and true widths are unknown at this stage.
- BDL = below detection limit.

## Appendix 3

### JORC CODE 2012 Edition - Table 1 Report – Yule Project

#### SECTION 1: SAMPLING TECHNIQUES AND DATA

Criteria	JORC Code Explanation	Commentary
<b>Sampling techniques</b>	<ul style="list-style-type: none"> <li>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.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li><b>Reverse Circulation (RC) drilling</b> Previous Explorers' RC drilling located on current Yule Project tenure includes three RC holes located on Yule Project tenement E47/3508: BYRC001-003 (375m) on selective targets (WAMEX Report A88780). One metre RC samples were collected from the cyclone and laid out in rows of 20 on the ground. Composite 4m samples were then collected by spear or scoop sampling and sent to the laboratory.</li> <li><b>Petrography Sampling</b> A total of seventeen individual fresh and oxidised cuttings were collected. In all cases, the material collected did not have any spatial control, other than their drillhole number, due to the almost complete decay of the original RC bags. Cuttings were essentially sampled at random from remnant spoil, and not necessarily taken from the mineralized intercept.</li> <li><b>Drill cutting sampling</b> Two samples weighing approximately 3kg of micaceous drill cuttings were collected from one drill spoil mound within the remains of a RC bag.</li> </ul>
<b>Drilling techniques</b>	<ul style="list-style-type: none"> <li>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).</li> </ul>	<ul style="list-style-type: none"> <li><b>RC drilling</b>—refer to WAMEX report A88780 RC drilling completed by Schramm 660 (Profile Drilling, Perth)</li> </ul>
<b>Drill sample recovery</b>	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li><b>RC Drilling – WAMEX A88780</b> Sample recovery insufficiently recorded in previous explorer's reports</li> </ul>
<b>Logging</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li><b>RC Drilling – WAMEX A88780</b> Drill hole logging methodology insufficiently recorded in previous explorer's reports, but summary LITHOLOGY logs reviewed from WAMEX A88780 digital data txt files.</li> </ul>

Criteria	JORC Code Explanation	Commentary
	<ul style="list-style-type: none"> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	
<b>Sub-sampling techniques and sample preparation</b>	<ul style="list-style-type: none"> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>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.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul style="list-style-type: none"> <li><b>RC Drilling – WAMEX A88780</b> 4m composite samples collected with 1m re-split samples collected for selected samples with anomalous Ni values.</li> <li><b>Petrography Samples</b>  Petrographic section preparations were performed at Adelaide Petrographic Laboratories P/L in Adelaide. Standard and polished thin sections were prepared and subsequently examined microscopically in transmitted and reflected light. Photomicrographs were taken of representative mineralogical and textural characteristics.  In addition to EDS (energy dispersive spectroscopy) point analyses for microchemical analysis, SEM mapping with EDS spectra was carried out using the Phillips XL40 W-filament SEM with Bruker detectors at the CSIRO ARRC facility in Kensington, Perth. SEM conditions of a 30 kV beam and a working distance of ~12.3 mm were used. Individual elements with N&gt; 12 (Mg) were mapped over selected areas. Selected key elements are presented here that highlight key ore (i.e. Ni-Co-Cu) and gangue (silicate and carbonate) minerals.  Analyses have been carried out selected drill cuttings, previously subject to petrographic study. The drill cuttings themselves do not have spatial control, other than their drillhole numbers.  A low vacuum method without carbon coating was used to facilitate rapid point analyses; however, as a trade-off, this method is subject to greater contamination of results by neighbouring material. Nevertheless, this method yields sufficiently accurate results for the identification of major elements present, and the proportions of elements present. From the proportions of elements, the approximate stoichiometry for minerals present can be calculated, allowing for tentative mineral identifications.</li> <li><b>Drill Cutting Sample</b>  All samples were pulverised utilising a grinding vessels to produce a homogenous representative sub-sample for analysis. A grind quality target of 85% passing 75µm relative to sample size, type and hardness.</li> </ul>
<b>Quality of assay data and laboratory tests</b>	<ul style="list-style-type: none"> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li><b>RC Drilling – WAMEX A88780</b>  Previous explorers RC samples sent to Genalysis (Perth), 2010. Multielement analysis on drill samples included: Au, Al, As, Ag, Ba, Bi, Ca, Cd, Co, Cr, Cs, Cu, Fe, K, Mg, Mn, Mo, Na, Nb, Ni, P, Pb, Pd, Pt, Rb, S, Sb, Sc, Se, Sn, Sr, Te, Th, Ti, U, V, W, Y, Zn, Zr, Tl, La, Ce, Pt, Nd, Sm, Eu, Gd, Tb, Py, Ho, Er, Tm, Yb, Lu, Li, Be, Hf, Ta, Re, Ga, In, Ge, Ir, Os, Rh, Ru. Analysis methods and codes included: 4A/OE (4-Acid digestion; ICP-OES), AR01/OE (Aqua Regia digestion; ICP-OES), FP1/OE (Sodium peroxide fusion Zr crucible) and NS25/MS (Nickel sulphide collection Fire Assay).</li> </ul>

Criteria	JORC Code Explanation	Commentary
	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Magnetic Susceptibility meter readings on 1 metre RC samples using a KT-10 handheld instrument (UnitsSI x 10<sup>-3</sup>) recorded in WAMEX A88780 report.</li> <li>Previous explorers did not document detailed QAQC procedures.</li> <li><b>Drill Cutting Assays</b> FUS25MS: The sample is fused using sodium peroxide as the flux in nickel crucibles. The melt is dissolved in dilute hydrochloric acid and analysed by ICP-OES or ICP-MS</li> </ul>
<b>Verification of sampling and assaying</b>	<ul style="list-style-type: none"> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul style="list-style-type: none"> <li>Not documented in the historical WAMEX reports.</li> <li>No twin holes recorded.</li> <li>Any adjustment to assay data not recorded in WAMEX reports.</li> </ul>
<b>Location of data points</b>	<ul style="list-style-type: none"> <li>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.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li><b>RC Drilling</b> WAMEX Report A88780 Survey method for historic drill hole collar was GPS unit. Previous Explorers used local, GDA94 and/or AMG84 grid depending on year of activities. Any AMG84 collars converted to GDA94 by transformation.</li> </ul>
<b>Data spacing and distribution</b>	<ul style="list-style-type: none"> <li>Data spacing for reporting of Exploration Results.</li> <li>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.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul style="list-style-type: none"> <li><b>RC Drilling</b> Selective geophysical targeting no drill traverses. 4m composite samples with selective 1m resplit samples.</li> </ul>
<b>Orientation of data in relation to geological structure</b>	<ul style="list-style-type: none"> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li><b>RC Drilling</b> RC drilling recorded in WAMEX Report A88780 included selective geophysical targeting with only 3 holes completed and orientation of potential mineralised structures intersected yet to be confirmed. There is insufficient information to determine if the RC holes were orientated perpendicular to the interpreted mineralised structures</li> </ul>
<b>Sample security</b>	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>Not documented in historic reports</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul style="list-style-type: none"> <li>Not documented in historic reports.</li> </ul>