4 October 2022



# NICKEL SULPHIDE MINERALISATION CONFIRMED AT BLAIR NORTH AND EUSTON PROSPECTS

- Final single metre assays received from two nickel prospects within the Greater Boorara -Cannon project area, 30km southeast of Kalgoorlie in Western Australia
- At the Euston prospect, 2 RC holes drilled to the southeast for 510m returned encouraging assays including:
  - o 2m @ 2.21% Ni, 765ppm Cu, 324 ppm Co and 0.76g/t Pt-Pd from 161m (CARC22008) 1
  - 4m @ 0.64% Ni and 321ppm Cu from 180m (CARC22006)<sup>2</sup>
- At the Blair North prospect, 900m northeast of Euston, 1 RC drillhole for 222m drilled to the southeast also confirmed the initial composite assay with an improved grade result of:
  - o 2m @ 2.68% Ni, 0.9% Cu, 440 ppm Co and 0.71g/t Pt-Pd from 176m (CARC22009) 1
- At Golden Ridge, three downhole electromagnetic (DHEM) surveys were completed within prospective ultramafics and sediments. The results were encouraging with three off hole conductors and a maximum conductance of 4000S observed
- Southern Geoscience has recommended several follow up drill holes to test all modelled conductor plates along a 1.2km magnetic high with drilling planned as part of the FY2023 exploration program
- At Yarmany, three wide spaced deep RC holes for 750m were drilled under the prospective nickel laterites highlighted by the air core drilling from 2021<sup>3</sup>. A fertile komatiite unit was discovered, with further analysis and follow up drill planning underway
- In addition, first pass auger sampling comprising 972 shallow holes has been completed across Yarmany with all samples submitted to LabWest for multielement ultrafine analysis
- Further results are expected in the current December Quarter 2022

Commenting on the nickel exploration success, Horizon Managing Director Mr Jon Price said:

"It's very encouraging to see confirmation of nickel sulphide mineralisation at Blair North and Euston and we look forward to further drilling success in this highly prospective area. The results from the downhole EM survey and geoscientific analysis at Golden Ridge has also demonstrated the potential of the area to host significant new nickel sulphide mineralisation."

"The Company's grassroots exploration program is continuing to deliver quality results in gold, nickel and rare earths as we test high priority targets across the core Greater Boorara - Cannon, Lakewood, Yarmany and Binduli project areas with further results expected in the current December Quarter."

<sup>&</sup>lt;sup>1</sup> See Tables and Competent Persons Statement on Page 8 and JORC Tables on Page 12.<sup>2</sup> Preliminary 4m composite result. <sup>3</sup> See ASX release 15 February 2022. <sup>5</sup> See Table 1 on Page 8, Competent Persons Statement on page 8 and JORC Tables on Page 12. <sup>6</sup> See Forward Looking and Cautionary Statements on Page 11.



#### Overview

Horizon Minerals Limited (ASX: HRZ) ("Horizon" or the "Company") is pleased to announce new nickel drilling results and exploration update from the 100% owned Cannon, Golden Ridge and Yarmany project areas located near Kalgoorlie-Boulder in the heart of the Western Australian goldfields (Figure 1).

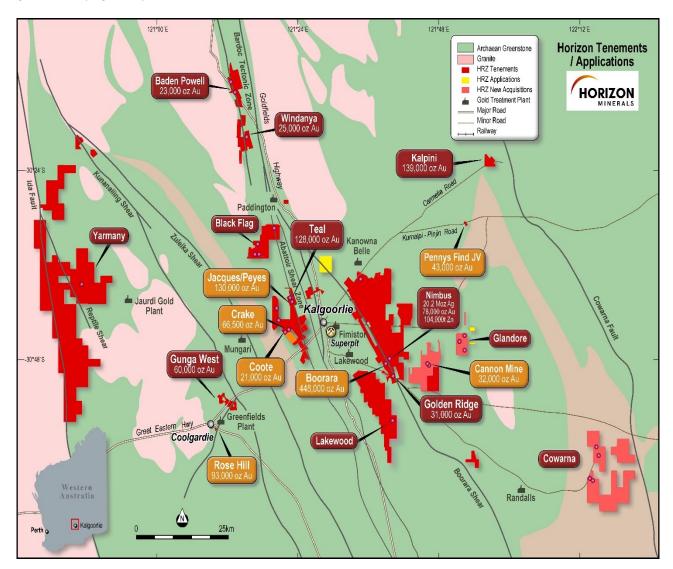


Figure 1: Horizon's Project area location, resources and surrounding infrastructure

The drilling formed part of the current CY22 program focussing on new discoveries across the 1,100km<sup>2</sup> portfolio.

During 2021, an air core program tested the Golden Ridge area to the west and to the south of the open cut mine where highly magnetic ultramafics were known to exist. The drilling highlighted anomalous levels of Ni-Co-Cu within the regolith profile. This was the target for the follow up 2022 Golden Ridge exploration program.



At Cannon, two nickel prospects have been identified in proximity to the existing Cannon open pit where nickel sulphide (pentlandite) mineralisation was discovered in komatiites in 2007/2008. Historical results from these areas include<sup>1</sup>:

- 3m @ 2.62% Ni, 542 ppm Co, 2400 ppm Cu from 156m and 2m @ 3.94% Ni, 709 ppm Co, 1,825 ppm Cu from 161m (Blair North Prospect, BNRC019)<sup>1</sup>
- 4m @ 1.78% Ni, 235 ppm Co and 1,400ppm Cu (Euston Prospect, BSRC041)<sup>2</sup>
- 5m @ 0.97% Ni, 231 ppm Co and 1,400 ppm Cu from 52m (Euston Prospect, BSRC004)

These 2 prospects were recently drill tested to validate the historical work and familiarise the Kalgoorlie team with the geology and structure.

At Yarmany, follow up deep drilling beneath the nickel laterites delineated in the 2021 air core program was completed along with a regional 'new discovery' auger program that aimed at 'opening up' underexplored areas and conceptual targets.

# **Project Geology**

The Cannon deposit occurs within Horizon's Bulong South gold project located 30km east-southeast of Kalgoorlie in the Eastern Goldfields region of Western Australia, on granted mining lease ML25/333.

The Cannon deposit was discovered by Southern Gold Limited in 2008 following up geochemical anomalies testing for strike extensions of the George's Reward mineralisation immediately north of the Bulong South deposit. The George's Reward prospect was initially held by Northern Mining Limited and comprised an Inferred Mineral Resource of approximately 23,000 ounces when purchased by Westgold Limited in 2015.

The Golden Ridge area is largely associated with the north-south trending, sub vertical quartz-feldspar porphyry located between ultramafic, shales and cherts to the west and an ultramafic (talc-carbonate) sequences to the east. Gold mineralisation is similar to Boorara where gold is observed in flat lying vein arrays and thicker, steeper dipping, contact style lodes.

The geology at the Yarmany Project area is dominated by tholeiitic and high MgO basalts, felsic and pelitic schists after felsic volcanic rocks and/or sediments with less common lithologies including komatiitic ultramafics and granitoid intrusives with reported pegmatites. The largest of these granitoids, which occur in the southern parts of Yarmany, is the Silt Dam Monzogranite, interpreted to be a post-regional folding granitoid. The region has variable metamorphic grade, but generally varies between low to high amphibolite facies typical for this western part of the Kalgoorlie Terrane.

#### **Summary of Results**

### **Cannon**

At the Cannon project area, the two nickel prospects were drill tested earlier this year and preliminary results released to the ASX <sup>3</sup>. At the Euston prospect (Figure 2), two southeast trending holes encountered nickel mineralisation on the footwall contact of the ultramafic komatiite with an underlying basalt and dolerite.

<sup>&</sup>lt;sup>1</sup> Refer to Northern Mining ASX release 24 June 2008. <sup>2</sup> Refer to ASX release by Southern Gold Quarterly Reports March 2007 and June 2008. <sup>3</sup> See ASX release 1 June 2022.



Results from the program included:

- 2m @ 2.21% Ni, 765ppm Cu, 324 ppm Co and 0.76g/t Pt-Pd from 161m (CARC22008)<sup>1</sup>
- 4m @ 0.64% Ni and 321ppm Cu from 180m (CARC22006)<sup>2</sup>

Single samples have been submitted for CARC22006. Two holes (330m) drilled to the east, up dip and along strike of BSRC0041 failed to intersect this mineralisation. Deeper drilling beneath BSRC0041 is planned.

At the Blair North prospect, only two holes were drilled, one drill hole to the southeast intersected:

o 2m @ 2.68% Ni, 0.9% Cu, 440 ppm Co and 0.71g/t Pt-Pd from 176m (CARC22009) 1

Another drillhole (CARC22030) located close to CARC22009 and drilled to the east failed to locate the nickel mineralisation observed in CARC22009 and BNRC0019. A DHEM survey CARC22030 also failed to pick up a conductor despite the strongly disseminated/stringy sulphide nearby in CARC22009.

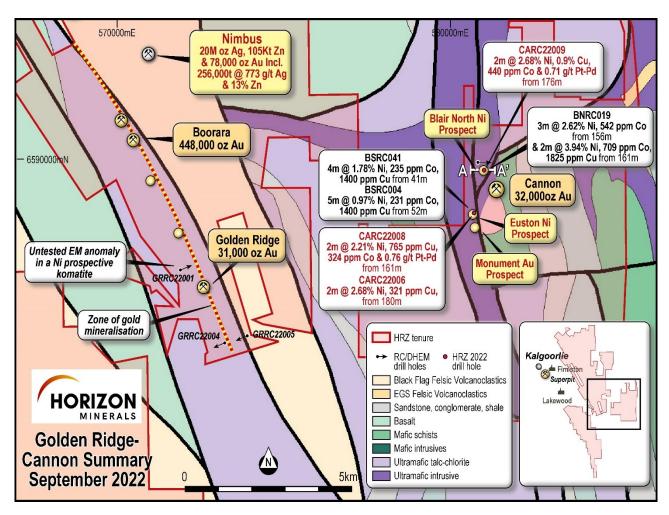


Figure 2: Golden Ridge - Cannon drilling highlights

<sup>&</sup>lt;sup>1</sup> See Tables and Competent Person statement on Pag 8, see also JORC Tables on Page 12. 2 denotes 4m composite only with 1 metre split assays pending.



The nickel mineralisation in CARC22009 appears to be somewhat different to the Euston geology in that the nickel is contained within the komatiite host and is regarded as hanging wall style mineralisation (Figure 3). The ore zone is also marked by increased percentages of iron and sulphur. Strong magnetic responses to the east of Blair North and Euston suggest this area might also be iron rich due to basal accumulations of iron oxides and sulphides, providing another additional target for drill testing (Figure 4). The prospective magnetic highs strike over 1.2km and have not been effectively tested to date.

Drill chip samples from these two holes have now been sent to Professor Tony Crawford in Adelaide for thin and polished section analysis.

The results from both prospects are considered encouraging as they not only validate the occurrences and grades, but the Ni-Cu-Pt-Pd metallurgy is on par with other Kambalda style Komatiite hosted nickel deposits in the region.

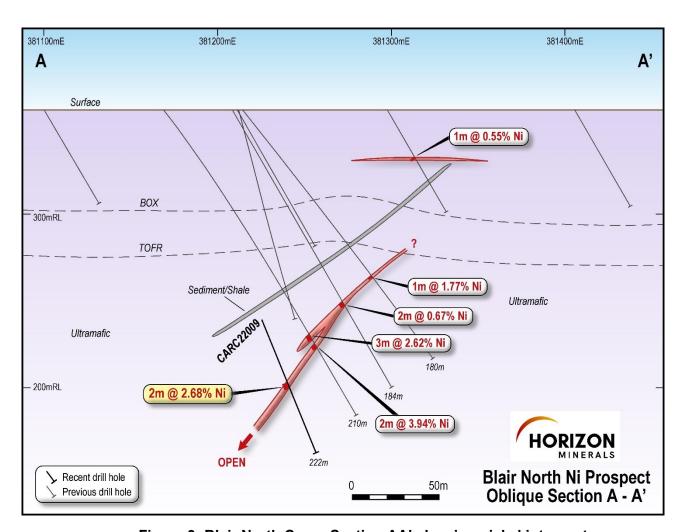


Figure 3: Blair North Cross Section AA' showing nickel intercepts



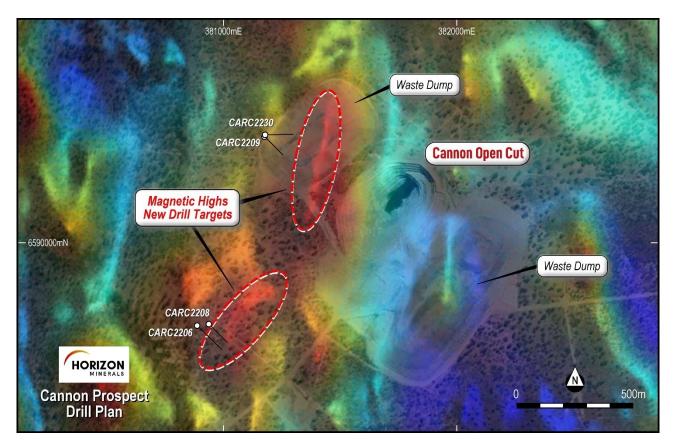


Figure 4: Cannon RTP Magnetics draped over google earth image highlighting additional targets

#### Golden Ridge

At the Golden Ridge Project area seven RC holes for 1,530m were drilled to test for nickel fertility and stratigraphy of the ultramafics and test for potential VMS mineralisation in adjacent felsic volcanics. Two of these holes were abandoned due to high water flows. Three holes (GRRC22001, GRRC22004, GRRC22005) were selected for DHEM surveys. DHEM surveys are a common exploration tool used to help identify potential massive sulphide conductors located nearby.

No significant fresh nickel sulphide was intersected in any of the holes with ultramafics. All three holes however picked up specific mid time or late time conductors in the DHEM surveys. A maximum conductivity of 4000S was observed that may reflect the conductor source being nearby disseminated or stringy sulphides. Southern Geoscience has proposed three follow up holes to test the modelled conductor plates.

#### **Yarmany**

At the Yarmany prospect, three RC holes were drilled south of the nickel laterites discovered by air core drilling in 2021. The holes were sited 100m – 300m south of the air core line where access was hampered by a small ridge. No significant nickel sulphide mineralisation (>0.5%) was discovered within the ultramafic rocks. One of the drillholes (GRRC22015) intersected a 50m wide unit of Mgrich komatiite which had encouraging Kambalda nickel ratios (Ni:Cr x Cu:Zn) ranging from ~1.0-3.3.



By comparison, the Kambalda nickel ratio for the Euston hole CARC22008 in the equivalent unmineralized komatiite ranged from ~1.0-4.0, whilst CARC22009 at Blair North ranged from ~0.5-2.8. GRRC22015 is being reviewed with more analysis and petrology likely to be undertaken.

Nickel silicate chips (chrysoprase) were often observed where nickel values were elevated in the weathered saprolite zone. Barren granite intrusives appeared to stope out much of the ultramafic rock in the remaining two holes.

A substantial auger drill program of 972 holes was also completed over the Yarmany tenure. In addition to exploring for gold, nickel and lithium pegmatites, extra REE analytes have been requested after a literature review¹ of the Yarmany-Ida fault area suggested that mafic rock samples east of the Ida fault had 'unusually high levels of REE enrichment' values due to the presence of rare earth phosphates xenotime and monazite. This observation is being followed up in with field reconnaissance and rock chip sampling as well.

# Next Steps <sup>2</sup>

Follow up, stage 2 RC drilling (~1000m) is planned at Euston and Cannon this year. Both nickel systems are considered open at depth, further targeting will incorporate both petrology and historic moving loop electromagnetic (MLEM) modelling from the previous explorer (Southern Gold) at Blair North. Drilling is scheduled at Golden Ridge and Yarmany early in 2023.

## Authorised for release by the Board of Directors

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<sup>1.</sup> Reference: "The Ida Shear Zone" Ch. 2.5.1 Weinberg R.F, Groves D.I, Hodkiewicz P and Van der Borgh P. Hydrothermal Systems, Giant Ore Deposits, Yilgarn Atlas vol 3, UWA Gold Module, Part 1, AMIRA Project P511. <sup>2</sup> See Forward Looking and Cautionary Statements on Page 11.



Table 1a: Drill holes details of Cannon significant downhole RC intercepts >0.5% Ni. True width intercepts are not known but estimated to be close (~75%) of the downhole width.

Prospect	Hole Id	East (m)	North (m)	Depth (m)	Dip	Azimuth	From (m)	To (m)	Interval (m)
Euston	CARC22008	380941	6589652	216	-60	135	161	163	2
Euston	CARC22006	380890	6589646	294	-60	135	180	184	4 <sup>1</sup>
Blair North	CARC22009	381178	6590454	222	-60	135	176	178	2

<sup>1.</sup>Denotes 4m composite assay results with 1m split assays pending.

Table 1b: Assay details of Cannon significant downhole RC intercepts >0.5% Ni. True width intercepts are not known but estimated to be close (~75%) of the downhole width.

Hole Id	Ni%	Cu (ppm)	Co (ppm)	Pt (ppm)	Pd (ppm)
CARC22008	2.21	765	324	200	566
CARC22006	0.64	321	76		
CARC22009	2.68	9630	440	544	167

# **Competent Person Statement**

Information in this announcement that relates to exploration results is based on information compiled by David O'Farrell who is the Exploration Manager of Horizon Minerals. Mr O'Farrell is a Member of The Australian Institute of Mining and Metallurgists (AuslMM) and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity that he is undertaking, to qualify as Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr O'Farrell consents to the inclusion in the document of the information in the form and context in which it appears.



# **Horizon Minerals Limited – Summary of Gold Mineral Resources**

	Cut-off	M	easur	ed	li li	ndicate	ed		Inferre	d	Т	otal R	esource
Project	grade (g/t)	Mt	Au (a/t)	Oz	Mt	Au (a/t)	Oz	Mt	Au (a/t)	Oz	Mt	Au (a/t)	Oz
Boorara OP	0.5	1.28	1.23	50,630	7.19	1.27	294,140	2.56	1.26	103,470	11.03	1.26	448,240
Kalpini	0.8				1.40	2.43	108,000	0.47	2.04	31,000	1.87	2.33	139,000
Jacques - Peyes	8.0				0.97	2.59	81,000	0.77	1.98	49,000	1.74	2.32	130,000
Teal	1.0				1.01	1.96	63,680	0.80	2.50	64,460	1.81	2.20	128,140
Crake	0.8				1.33	1.47	63,150	0.08	1.27	3,300	1.42	1.46	66,450
Coote	1.0							0.42	1.54	21,000	0.42	1.54	21,000
Capricorn	0.5							0.70	1.20	25,500	0.70	1.20	25,500
Baden Powell								0.60	1.20	23,000	0.60	1.20	23,000
Cannon UG	1.0				0.18	5.1	28,580	0.05	2.30	3,750	0.23	4.40	32,330
Rose Hill OP	0.5	0.19	2.00	12300	0.09	2	6,100				0.29	2.00	18,400
Rose Hill UG	2.0				0.33	4.5	47,100	0.18	4.80	27,800	0.51	4.60	74,900
Pennys Find	1.5				0.20	5.45	35,000	0.10	3.60	8,000	0.27	4.99	43,000
Gunga West	0.6				0.71	1.6	36,440	0.48	1.50	23,430	1.19	1.56	59,870
Golden Ridge	1.0				0.47	1.83	27,920	0.05	1.71	2,800	0.52	1.82	30,720
TOTAL		1.47	1.33	62,930	13.89	1.77	791,150	7.32	1.64	386,210	22.60	1.71	1,240,290

#### Confirmation

The information in this report that relates to Horizon's Mineral Resources estimates is extracted from and was originally reported in Horizon's ASX announcements "Intermin's Resources Grow to over 667,000 Ounces" dated 20 March 2018, "Rose Hill firms as quality high grade open pit and underground gold project" dated 8 December 2020, "Updated Boorara Mineral Resource Delivers a 34% Increase In Gold Grade" dated 27 April 2021, "Penny's Find JV Resource Update" dated 14 July 2021, "Updated Crake Resource improves in quality" dated 7 September 2021, "Jacques Find-Peyes Farm Mineral Resource update" dated 15 September 2021, "Kalpini Gold Project Mineral Resource Update" dated 28 September 2021 and "Gold Resources increase to 1.24Moz" dated 28 September 2022, each of which is available at www.asx.com.au. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the estimates in those announcements continue to apply and have not materially changed. The Company confirms that the form and context of the Competent Person's findings in relation to those Mineral Resources estimates or Ore Reserves estimates have not been materially modified from the original market announcements.



# Horizon Minerals Limited - Summary of Vanadium / Molybdenum Mineral Resources

Cut-C	Cut-off	Tonnage	Grade			Metal content (Mt)		
Project	grade (%)	(Mt)	V <sub>2</sub> O <sub>5</sub> (%)	Mo (ppm)	Ni (ppm)	V <sub>2</sub> O <sub>5</sub>	Мо	Ni
Rothbury (Inferred)	0.30	1,202	0.31	259	151	3.75	0.31	0.18
Lilyvale (Indicated)	0.30	430	0.50	240	291	2.15	0.10	0.10
Lilyvale (Inferred)	0.30	130	0.41	213	231	0.53	0.03	0.03
Manfred (Inferred)	0.30	76	0.35	369	249	0.26	0.03	0.02
TOTAL		1,838	0.36	256	193	6.65	0.46	0.36

# Horizon Minerals Limited - Summary of Silver / Zinc Mineral Resources

Nimbus All Lodes (bottom cuts 12g/t Ag, 0.5% Zn, 0.3g/t Au)

Category	Tonnes	Grade	Grade	Grade	Ounces	Ounces	Tonnes
	Mt	Ag (g/t)	Au (g/t)	Zn (%)	Ag (Moz)	Au ('000oz)	Zn ('000t)
Measured Resource	3.62	102	0.09	1.2	11.9	10	45
Indicated Resource	3.18	48	0.21	1.0	4.9	21	30
Inferred Resource	5.28	20	0.27	0.5	3.4	46	29
Total Resource	12.08	52	0.20	0.9	20.2	77	104

Nimbus high grade silver zinc resource (500g/t Ag bottom cut and 2800g/t Ag top cut)

Category	Tonnes	Grade	Grade	Ounces	Tonnes
	Mt	Ag (g/t)	Zn (%)	Ag (Moz)	Zn ('000t)
Measured Resource	0	0	0	0	0
Indicated Resource	0.17	762	12.8	4.2	22
Inferred Resource	0.09	797	13.0	2.2	11
Total Resource	0.26	774	12.8	6.4	33

#### Confirmation

The information is this report that relates to Horizon's Mineral Resources estimates on the Richmond Julia Creek vanadium project and Nimbus Silver Zinc Project is extracted from and was originally reported in Intermin's and MacPhersons' ASX Announcement "Intermin and MacPhersons Agree to Merge – Creation of a New Gold Company Horizon Minerals Ltd" dated 11 December 2018 and in MacPhersons' ASX announcements "Quarterly Activities Report" dated 25 October 2018, "Richmond – Julia Creek Vanadium Project Resource Update" dated 16 June 2020, "New High Grade Nimbus Silver Core Averaging 968 g/t Ag" dated 10th May 2016 and "Nimbus Increases Resources" dated 30th April 2015, each of which is available at www.asx.com.au. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the estimates in those announcements continue to apply and have not materially changed. The Company confirms that the form and context of the Competent Person's findings in relation to those Mineral Resources estimates have not been materially modified from the original market announcements.



# **Forward Looking and Cautionary Statements**

Some statements in this report regarding estimates or future events are forward looking statements. They include indications of, and guidance on, future earnings, cash flow, costs and financial performance. Forward looking statements include, but are not limited to, statements preceded by words such as "planned", "expected", "projected", "estimated", "may", "scheduled", "intends", "anticipates", "believes", "potential", "could", "nominal", "conceptual" and similar expressions. Forward looking statements, opinions and estimates included in this announcement are based on assumptions and contingencies which are subject to change without notice, as are statements about market and industry trends, which are based on interpretations of current market conditions. Forward looking statements are provided as a general guide only and should not be relied on as a guarantee of future performance. Forward looking statements may be affected by a range of variables that could cause actual results to differ from estimated results and may cause the Company's actual performance and financial results in future periods to materially differ from any projections of future performance or results expressed or implied by such forward looking statements. These risks and uncertainties include but are not limited to liabilities inherent in mine development and production, geological, mining and processing technical problems, the inability to obtain any additional mine licenses, permits and other regulatory approvals required in connection with mining and third party processing operations, competition for among other things, capital, acquisition of reserves, undeveloped lands and skilled personnel, incorrect assessments of the value of acquisitions, changes in commodity prices and exchange rate, currency and interest fluctuations, various events which could disrupt operations and/or the transportation of mineral products, including labour stoppages and severe weather conditions, the demand for and availability of transportation services, the ability to secure adequate financing and management's ability to anticipate and manage the foregoing factors and risks. There can be no assurance that forward looking statements will prove to be correct.

Statements regarding plans with respect to the Company's mineral properties may contain forward looking statements in relation to future matters that can only be made where the Company has a reasonable basis for making those statements.

This announcement has been prepared in compliance with the JORC Code (2012) where applicable and the current ASX Listing Rules.

The Company believes that it has a reasonable basis for making the forward-looking statements in the announcement, including with respect to any production targets and financial estimates, based on the information contained in this and previous ASX announcements.



# Appendix 1 – Golden Ridge and Cannon Gold-Nickel Projects JORC Code (2012) Table 1, Section 1 and 2

Mr David O'Farrell, Exploration Manager compiled the information in Section 1 and Section 2 of the following JORC Table 1 and is the Competent Person for those sections. The following Table and Sections are provided to ensure compliance with the JORC Code (2012 edition) requirements for the reporting of Mineral Resources. For further detail, please refer to the announcements made to the ASX by Intermin Resources Ltd and Horizon Minerals Ltd (2019-2022) relating to the Boorara, Cannon and Golden Ridge project areas.

**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.	<ul> <li>4m composite samples taken with a hand size aluminium scoop being thrust into samples piles on the ground. 1m single splits taken off rig with cone splitter and later submitted to lab if 4m composite returns &gt;0.1g/t. Average sample weights are about 1.5-2.5kg.</li> </ul>
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	For RC drilling regular air and manual cleaning of cyclone to remove hung up clays where present. Standards & replicate assays taken by the laboratory. Based on statistical analysis of these results, there is no evidence to suggest the samples are not representative.
	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	<ul> <li>RC drilling was used to obtain 1m samples from which approximately 1.5-3kg was pulverised to produce a 50 g charge for fire assay. RC chips were geologically logged over 1m intervals, initially sampled over 4m composite intervals and then specific anomalous intervals were sampled over 1m intervals. Depending on the final hole depth, the maximum composite interval was 4m and minimum was 1m. Samples were assayed for Au and multi-elements in this program. Assays were determined by Aqua Regia and ICP-MS finish. Routine check are undertaken. Drilling of</li> </ul>





Criteria	JORC Code explanation	Commentary
	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.	mainly oxide, transitional and fresh rocks with gold and base meatsl associated with sulphides and quartz.
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).	RC drilling was typically a 5 ¼" hammer bit.
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.	<ul> <li>RC recovery and meterage was assessed by comparing drill chip volumes (sample bags) for individual meters. Estimates of sample recoveries were recorded. Routine checks for correct sample depths are undertaken every RC rod (6m). The cyclone was routinely cleaned ensuring no material build up.</li> <li>Due to the generally good/standard drilling conditions around sample intervals (dry) the geologist believes the samples are representative, some bias would occur in the advent of poor sample recovery which was logged where rarely encountered. Some wet drilling was observed.</li> <li>No sample bias has been identified to date.</li> </ul>
Logging	Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral	<ul> <li>Drill chip logging and core was completed on one metre or selected intervals at the rig by the geologist. The log was recorded onto standard excel logging sheets, and later transferred into Micromine and Geobank software once back at the office.</li> <li>Logging was qualitative in nature.</li> <li>All intervals logged for RC drilling.</li> </ul>



Criteria	JORC Code explanation	Commentary
Sub compling	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.	
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all cores 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.  Quality control procedures adopted for all subsampling 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.	<ul> <li>4m composite and 1m RC samples taken.</li> <li>Single splits were automatically taken by off the rig, 4m composites were taken by HRZ geologists. Samples collected in mineralisation were all dry except for some at depth and these were recorded on logs.</li> <li>For Horizon samples, no duplicate 4m composites were taken in the field. 4m and 1m samples were analysed by SGS (Kalgoorlie).</li> <li>Samples were consistent and weighed approximately 1.5-2.0kg and sampling procedures are constantly monitored</li> <li>Once samples arrived in Kalgoorlie, further work including duplicates and QC was undertaken at the laboratory. Horizon has determined that there is sufficient drill data density to calculate a updated Mineral Resource Estimate at the present time. This will be undertaken in 2022.</li> <li>Mineralisation is located in weathered and fresh ultramafic rock, porphyry and volcanic sediments. The sample size is standard practice in the WA Goldfields to ensure representivity</li> </ul>



Criteria	JORC Code explanation	Commentary
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 (e.g., standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e., lack of bias) and precision have been established.	<ul> <li>The 1m RC samples were assayed by SGS (Kalgoorlie and Perth).</li> <li>Assay methods include Fire Assay for gold, ICP41Q for base metals, FAM505 for Pt-Pd</li> <li>No geophysical assay tools were used.</li> <li>Laboratory QA/QC involves the use of internal lab standards using certified reference material, blanks, splits and replicates as part of the in-house procedures. QC results (blanks, duplicates, standards) were in line with commercial procedures, reproducibility and accuracy.</li> <li>Horizon submit Standards (CRM) with the 4m composite samples and Standards, Blanks and Field Duplicates with the 1m split samples.</li> <li>No issues with precision or accuracy have been noted.</li> </ul>
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.  The use of twinned holes.  Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.  Discuss any adjustment to assay data.	<ul> <li>Work was supervised by senior SGS staff experienced in metals assaying. QC data reports confirming the sample quality are supplied.</li> <li>No independent sampling/assay check have been undertaken to date</li> <li>No twin holes have been intentionally drilled.</li> <li>Data storage as PDF/XLSX files on company PC in Perth office.</li> <li>No data was adjusted.</li> </ul>



Criteria	JORC Code explanation	Commentary
Location of data points  Data spacing and distribution	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.  Data spacing for reporting of Exploration Results.  Whether the data spacing and distribution is sufficient to establish the degree of geological	<ul> <li>All drill collar locations were initially pegged and surveyed using a handheld Garmin GPS, accurate to within 3-5m. The holes are normally accurately surveyed using an RTK-DGPS system at a later date. Holes were drilled on a regular spacing as per Table 1 collar details. All reported coordinates are referenced to a local grid. The topography is flat at the location of the drilling. Down hole surveys were taken.</li> <li>Grid MGA94 Zone 51.</li> <li>Topography is very flat, small differences in elevation between drill holes will have little effect on mineralisation widths on initial interpretation.</li> <li>Holes were variably spaced as detailed in the collar details/coordinates in Table 1.</li> <li>The hole spacing was determined by Horizon to be sufficient when combined with confirmed historic drilling results to adequately define the mineralisation in preparation for a JORC Mineral Resource</li> </ul>
	and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.  Whether sample compositing has been applied.	estimate/update. '
Orientation of data in relation to geological structure	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.  If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have	<ul> <li>Drilling angled or vertical holes in cases is deemed to be appropriate to intersect the oxide and primary mineralisation and potential residual dipping structures. At Golden Ridge and Cannon all holes were angled and used to intersect the dipping ore lodes. The intercept width is likely to be close (~75%) to the true width however, further drilling and modelling is typically undertaken.</li> <li>The relationship between the drilling orientation and the orientation of mineralised structures is not considered to have introduced a sampling bias. Given the style of mineralisation and drill spacing/method, it is the most common method for delineating shallow gold resources in Australia.</li> </ul>



Criteria	JORC Code explanation	Commentary
	introduced a sampling bias, this should be assessed and reported if material.	
Sample security	The measures taken to ensure sample security.	<ul> <li>Samples were collected on site under supervision of the responsible geologist. The work site is on a destocked pastoral station. Visitors need permission to visit site. Once collected samples were bagged and transported to Kalgoorlie for analysis. Dispatch and consignment notes were delivered and checked for discrepancies.</li> </ul>
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	An internal audit was completed with satisfactory results.

# **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.	<ul> <li>M25/357, M25/333 and M26/534. Haoma Mining are the registered owners of M26/534 and have a small royalty payable upon commercial production.</li> <li>The tenements are in good standing and no known impediments exist.</li> </ul>





Criteria	JORC Code explanation	Commentary
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	<ul> <li>Previous workers in the area include Macphersons Resources, Northern Star, Westgold, Fimiston Mining and Copperfield Exploration at Golden Ridge. Cannon data was sourced from ASX releases and reports from Southern Gold Limited, Northern Mining Limited.</li> </ul>
Geology	Deposit type, geological setting and style of mineralisation.	<ul> <li>Shear and stockwork hosted Archaean mafics and ultramafics with varying amounts of sulphide mineralisation.</li> </ul>
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:	See Table 1a and 1b.
	<ul> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul>	No information is excluded.
	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.	



Criteria	JORC Code 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.  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.	<ul> <li>No weighting or averaging calculations were made, assays reported and compiled are as tabulated in Table 1a,b.</li> <li>All assay intervals reported in Table 1a,b are 4m composites or 1m downhole intervals or as indicated.</li> <li>No metal equivalent calculations were used.</li> </ul>
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').	<ul> <li>Supergene oxide mineralisation is generally flat lying (almost blanket like) while transitional and primary mineralisation at depth is generally steeper.</li> <li>Drill intercepts and true widths appear to be close to each other, or within reason allowing for the minimum intercept width of 1m. Horizon estimates that the true width is variable but probably around 75-100% of most intercept widths.</li> <li>Given the nature of RC drilling, the minimum width and assay is 1m. The true thickness of the downhole intercepts is not known however the downhole intercepts appear to represent very close to true width given the orientation of the drilling.</li> </ul>



Criteria	JORC Code explanation	Commentary
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.	See Figure 1-2.
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 avoiding misleading reporting of Exploration Results.	<ul> <li>Summary results showing assays &gt;0.5% Ni, Co, Cu, Pt, Pd (when available) and are shown in Table 1.</li> </ul>
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.	See details from previous ASX releases from Horizon Minerals Limited (ASX; HRZ and IRC). These can be accessed via the internet.
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	<ul> <li>New resource calculations are planned once sufficient data is compiled, with pit or underground economic assessments to follow if warranted.</li> <li>Commercially sensitive.</li> </ul>





Criteria	JORC Code explanation	Commentary
	interpretations and future drilling areas, provide this information is not commercially sensitive.	