ESSENTIALMETALS

for a sustainable future

ASX Code: ESS

Corporate Profile

Shares on issue: 244,246,972
Cash: $9m (31 Dec 2021)
Debt: Nil

KEY PROJECTS

LITHIUM Pioneer Dome
GOLD Golden Ridge
GOLD Juglah Dome

Joint Ventures (ESS %)

2x nickel projects (20-25%)*
4x gold projects (25-30%)*
* Free carried to a decision to mine

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25 February 2022

Abundant fresh spodumene intersected from near surface in diamond drilling targeting upper zones of Cade deposit

Visual observation of drill core supports the potential for mining at Dome North to commence at surface with the likely upgrading of shallow Resources from Inferred to Indicated.

HIGHLIGHTS

- Successful diamond drill programme completed, comprising of six holes drilled into the upper ~40m of the Cade Deposit and seven holes drilled into the Davy Deposit for a total of 909 metres.

- At Cade abundant fresh spodumene was observed in drill core intersections within the Mineral Resource boundaries. Some weathering is evident within the contact zones between the pegmatite and wall rock as well as where fissures/fractures have facilitated water ingress into the pegmatite.

- At Davy fresh spodumene was observed in three of the drill holes with variable weathering in the other four holes. Minor lepidolite was seen in some holes.

- Assays and XRD analysis are awaited to confirm lithium grades and mineralogy. The drill core is being prepared for dispatch and the laboratory has advised a 12-week turnaround time.

- The recently completed air-core programme testing multiple and, in some cases coincident, lithium, gold and nickel targets, did not locate any spodumene-bearing pegmatites, but several pegmatites were intersected in the southern and central areas of the Project.

Essential Metals Managing Director, Tim Spencer, said: *"We are confident that the recently completed diamond drilling will, subject to satisfactory assay and metallurgical test work results, demonstrate that both the Cade and Davy deposits can be mined to produce recoverable spodumene from surface. We also expect to upgrade the drilled zones from Inferred to Indicated status within the Mineral Resource, supporting our development pathway."*

PIONEER DOME LITHIUM PROJECT

The 450km^2 Pioneer Dome Project (ESS: 100%) is located in the core of Western Australia's lithium corridor in the Eastern Goldfields, approximately 130km south of Kalgoorlie and 275km north of the Port of Esperance. A Mineral Resource[1] of 11.2Mt @ 1.21% Li_2O has been defined at 'Dome North' in the northern area of the Project.

The southern Yilgarn area is recognised as being well-endowed with spodumene deposits, including the Bald Hill Mine, the Mt Marion Mine and the Buldania Project, all of which are located within 80km of the Pioneer Dome Project. The world-class Greenbushes Deposit, the Mt Holland Mine and the Mt Cattlin Mine are located further west, south-west and south-south-west, respectively.

DIAMOND DRILL PROGRAMME AT DOME NORTH

This drilling was designed to build on the previous results announced on 15 October[2], where four Reverse Circulation (RC) holes were drilled in the upper zone of the Cade Deposit returning broad high-grade intercepts, with highlights of:

- **21m @ 1.08% Li_2O from surface** (PDRC589)
- **24m @ 1.29% Li_2O from surface** (PDRC590)
- **15m @ 1.06% Li_2O from 47m** (PDRC591)
- **26m @ 1.46% Li_2O from 51m** (PDRC592)

Also, hole PDRC519, located at the southern end of the Davy deposit, returned encouraging assays of:

- **7m @ 1.02% Li_2O from 21m**, including 3m @ 1.44% Li_2O; and
- **9m @ 0.62% Li_2O from 42m**

The two main objectives of the diamond drilling programme were to:

1. Increase confidence in the Lithium Mineral Resource Estimate by converting a large part of the Davy deposit and areas across the upper zone of the Cade deposit from the Inferred to Indicated Resource categories by in-fill drilling and by measuring the bulk densities.

2. Provide samples from drill core to conduct confirmatory metallurgical test work with a focus on the upper zone in Cade and the Davy deposit.

[1] Refer to ASX announcement dated 29 September 2020 "Dome North Lithium Project – Resource Upgrade"
[2] Refer ASX announcement 15 October 2021 – High grade assay results from Cade Deposit

Figure 1 – Example of drill core taken from the upper zone of the Cade Deposit illustrating the relatively homogenous mineralised pegmatite and some weathering on fractured sections (Hole ID PDD598).

The HQ triple tube (HQ3) diamond drill programme consisted of six holes drilled into the upper ~40m of the Cade Deposit and seven holes drilled into the Davy Deposit for a total of 909.05 metres (Figure 2).

At Cade, observations of the drill core indicated that while the metasediment (host rock) was strongly weathered, the upper portion of the pegmatite had visual spodumene with minimal weathering and the lower portion of the pegmatite was weak to moderately weathered depending on fracture density (Figure 3 and Figure 5).

Seven diamond drill holes totalling 547.65m were drilled at Davy. The four holes drilled above fresh rock (PDD601 to 603 and PDD607) had weakly to strongly weathered pegmatite hosted in weathered ultramafic lithology (Figure 4, Figure 6). The three holes drilled into fresh rock (PDD604 to 606) intersected pegmatite with fine to coarse spodumene and minor lepidolite.

Refer to

Table **1** for summary of the pegmatites observed in the drill holes.

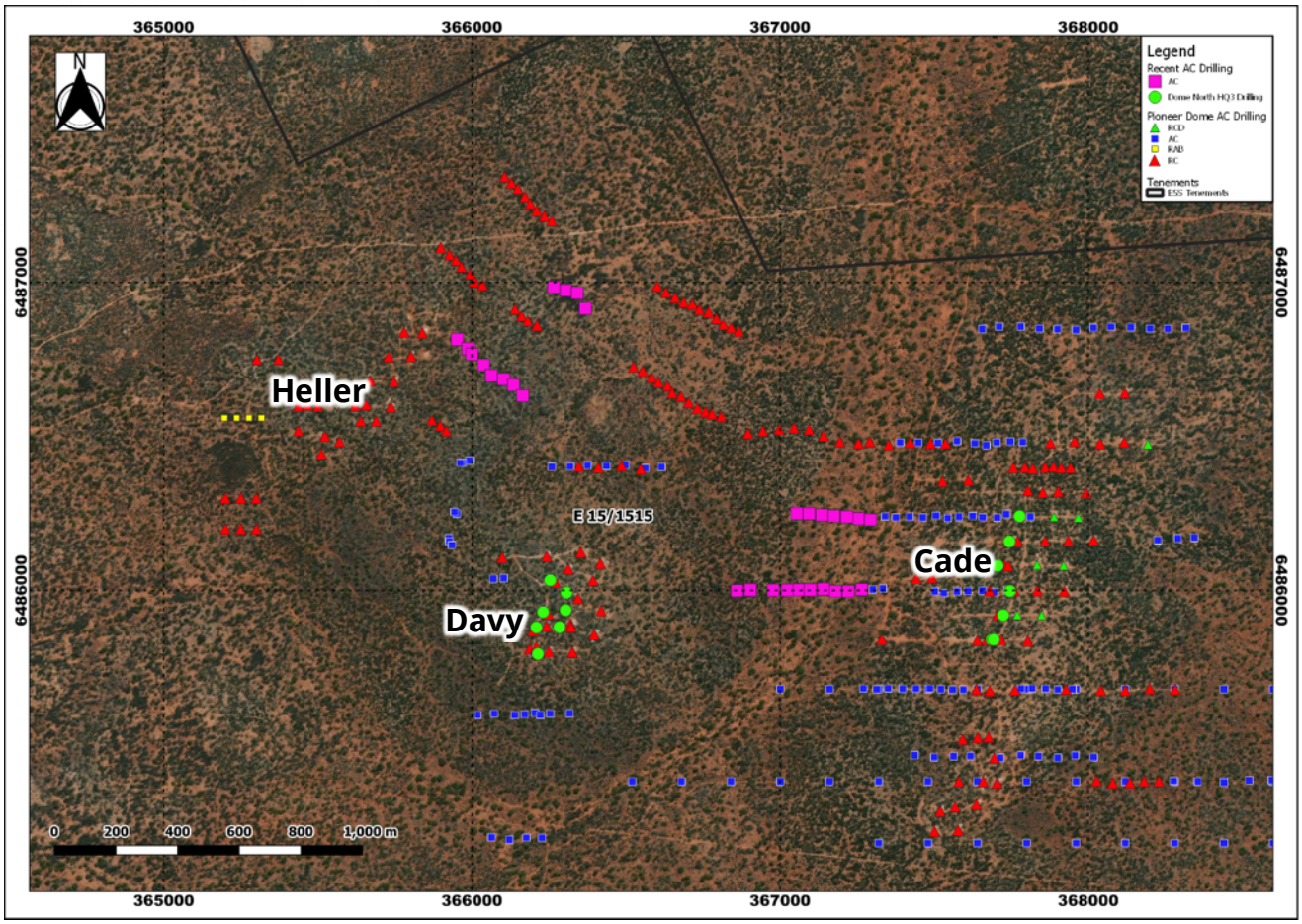

Figure 2 – Plan view of the Dome North area with the diamond holes shown as large green circles.

Figure 3 – Examples of drill core taken from the upper zone photo on left – Hole ID PDD596) and lower zone (photo on right – Hole ID PDD596) of the Cade Deposit.

Figure 4 – Examples of drill core taken from the upper zone photo on left – Hole ID PDD607) and transition zone (photo on right – Hole ID PDD601) of the Davy Deposit.

Table 1 below provides a summary of the visual observations of the pegmatites in the drill core:

Deposit	Hole ID	Pegmatite zone	Spodumene zone				Comments
		DHM	From (m)	DHM	Fresh	Weathered	
Cade	PDD595	36.23	10.6	22.10	93%	7%	Mostly fresh spodumene
Cade	PDD596	23.07	16.62	19.66	100%	0%	Small intervals of metasediments and weathered pegmatite.
Cade	PDD596	4.91	50.28	3.34	100%	0%	Second pegmatite in hole PDD596.
Cade	PDD597	24.03	18.95	21.15	37%	63%	Variable weathering observed
Cade	PDD598	29.70	14.31	13.79	72%	28%	Some weathering observed
Cade	PDD599	35.60	3.65	23.65	57%	43%	Variable weathering observed
Cade	PDD600	34.44	19.26	20.54	91%	9%	Mostly fresh spodumene
Cade	PDD600		45.96	6.39	43%	57%	Second zone of spodumene in hole PDD600.
Davy	PDD601	31.92	53.6	8.59	0%	100%	Weakly weathered
Davy	PDD601		66.0	11.35	0%	100%	Altered spodumene. Weakly weathered. Second zone.
Davy	PDD602	14.18	10.5	5.70	0%	100%	Moderate to strongly weathered pegmatite
Davy	PDD603	19.60	26.43	7.53	0%	100%	Weakly weathered. Spodumene with minor lepidolite
Davy	PDD604	11.55	99.96	10.34	100%	0%	Fine to coarse spodumene and minor lepidolite
Davy	PDD605	18.70	97.7	16.40	100%	0%	Fine to coarse spodumene and minor lepidolite
Davy	PDD606	11.59	73.7	6.00	100%	0%	Fine to coarse spodumene
Davy	PDD607	9.55	23.13	1.93	0%	100%	Moderately weathered pegmatite with spodumene and minor lepidolite

DHM= Down-Hole Metres. Fresh*= no or minimal weathering in spodumene zone.

Caution: Estimates by experienced, competent geoscientists are considered to be reliable and reproducible semi-quantitative estimates of the abundance of minerals present in a sample. Visual estimates of mineral abundance should, however, never be considered a proxy or substitute for laboratory analyses where metal concentrations or grades are the factor of principal economic interest. Visual estimates also potentially provide no information regarding potential impurities or deleterious physical properties relevant to valuations of some mineral commodities such as graphite and many industrial minerals.

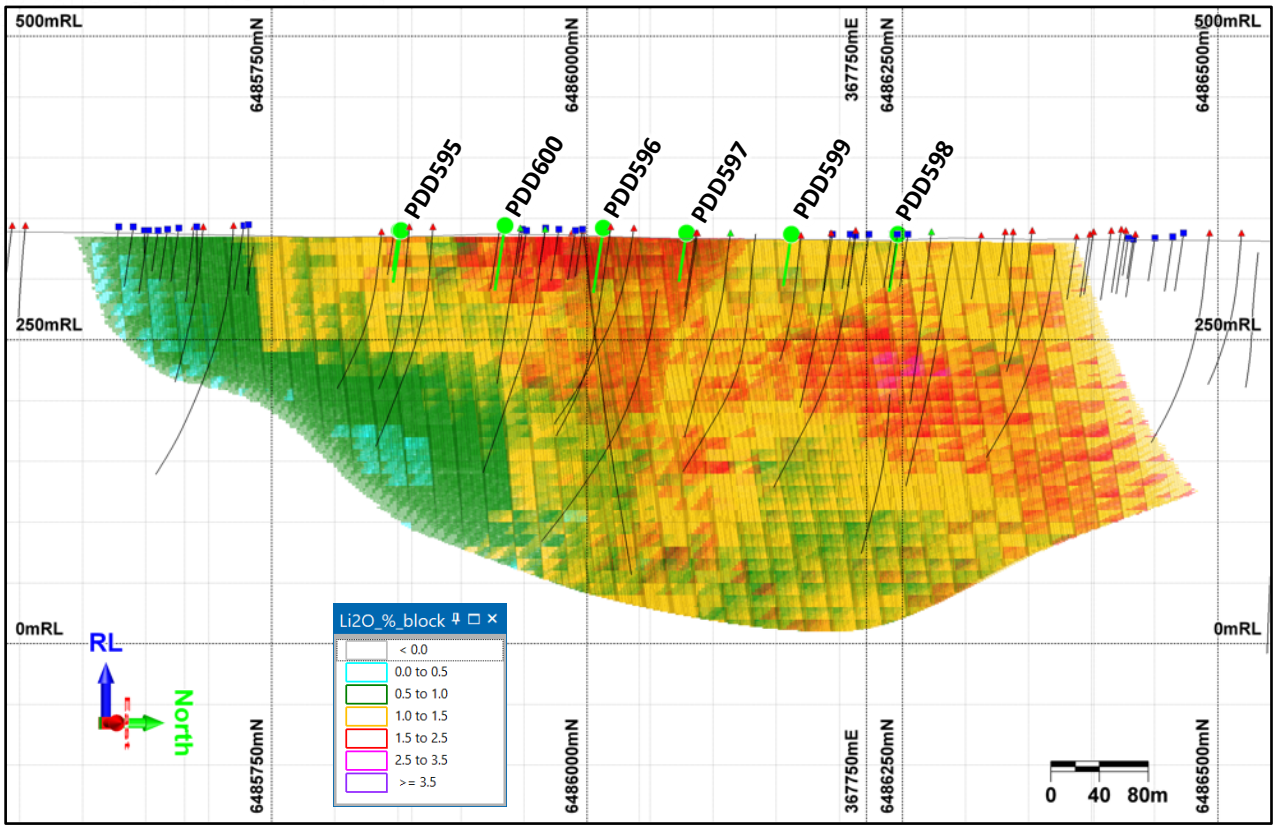

Figure 5 – Long-section of the Cade deposit with previous drilling (thin black traces), completed HQ3 diamond drilling (thick green traces) and Lithium (Li_2O) Mineral Resource Estimate (coloured by grade as per the legend).

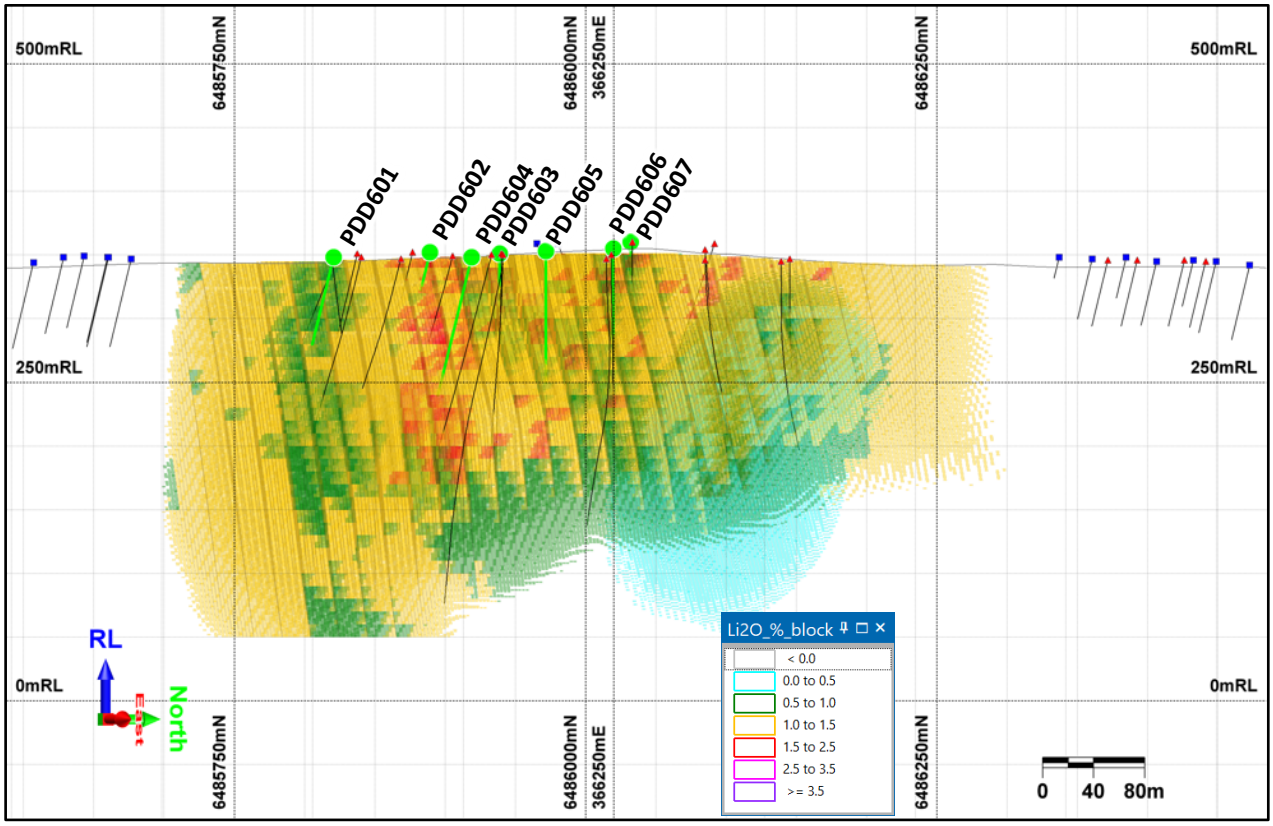

Figure 6 – Long-section of the Davy deposit with previous drilling (thin black traces), completed HQ3 diamond drilling (thick green traces) and Lithium (Li_2O) Mineral Resource Estimate (coloured by grade as per the legend).

Samples from the drill core are currently being prepared for dispatch to the laboratory for analysis. The laboratory has advised that due to backlogs and heavy current workloads, the return of lithium assays is likely to take 12 weeks, so assays are expected towards the end of May. Once the assays have been received, intervals from the drill core will be selected for metallurgical test work, with the test work expected to take 6 – 8 weeks to complete.

AIR-CORE DRILL PROGRAMME AT DOME NORTH

An air-core (AC) drill programme comprising 29 holes for 1,390m (Figure 2 and Figure 7) was carried out to test the Heller NE (north-east) and 'Davy to Cade' targets generated from the August 2021 slim-line RC programme. The drilling did not appear to intersect any new spodumene-bearing pegmatites; however, coarse flakes of muscovite were observed in the weathered zone in several drill holes, which is evidence of pegmatitic material.

Assay results are expected towards the end of May and will be used to further evaluate the prospectivity of the areas drilled with the objective of determining if any 'near misses' of pegmatite bodies occurred.

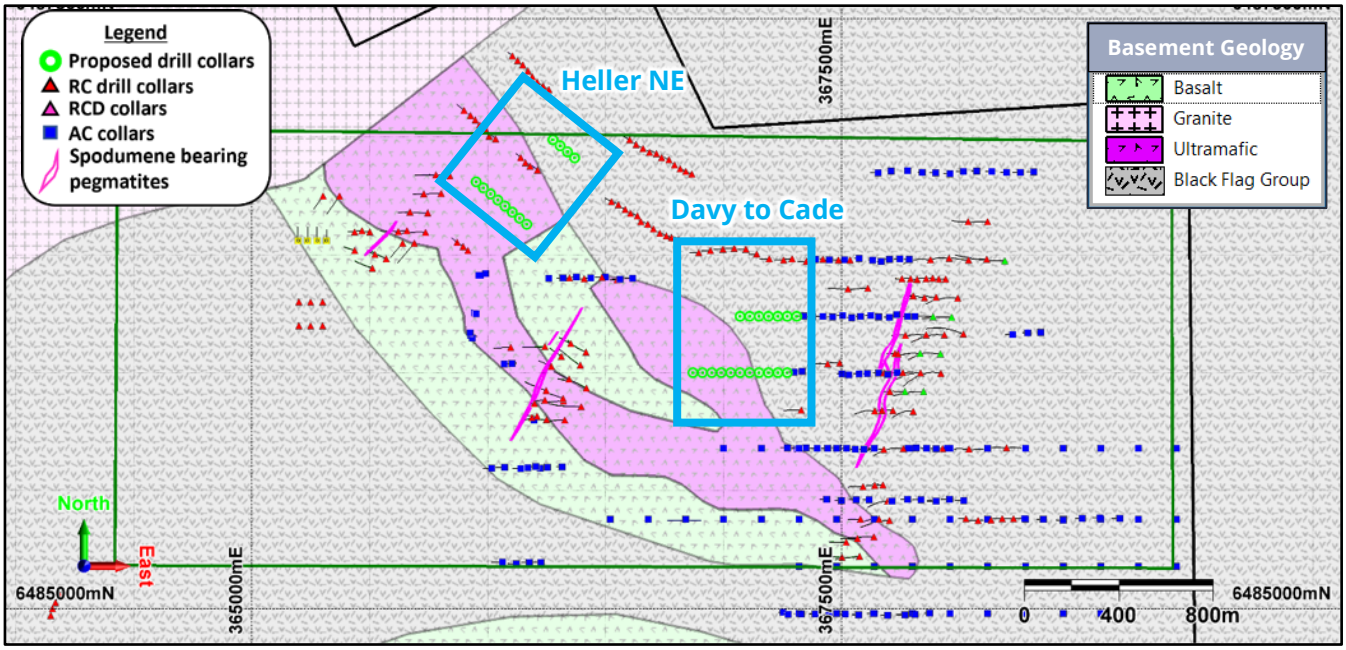

Figure 7 – Dome North air-core drilling (green circles), surface projection of MRE (magenta outlines) and previous drilling (see legend) on top of the interpreted geology.

SCOUT AIR-CORE DRILL PROGRAMME

An air-core (AC) reconnaissance drill programme was undertaken in the Dome South (south, south-west and south-east) and Dome Central areas. The programme comprised 72 holes drilled for a total of 3,000m, see Figure 8. The drilling programme aimed to test LCT targets based on pegmatites logged in historical gold and nickel drilling, as well to test additional gold and nickel targets.

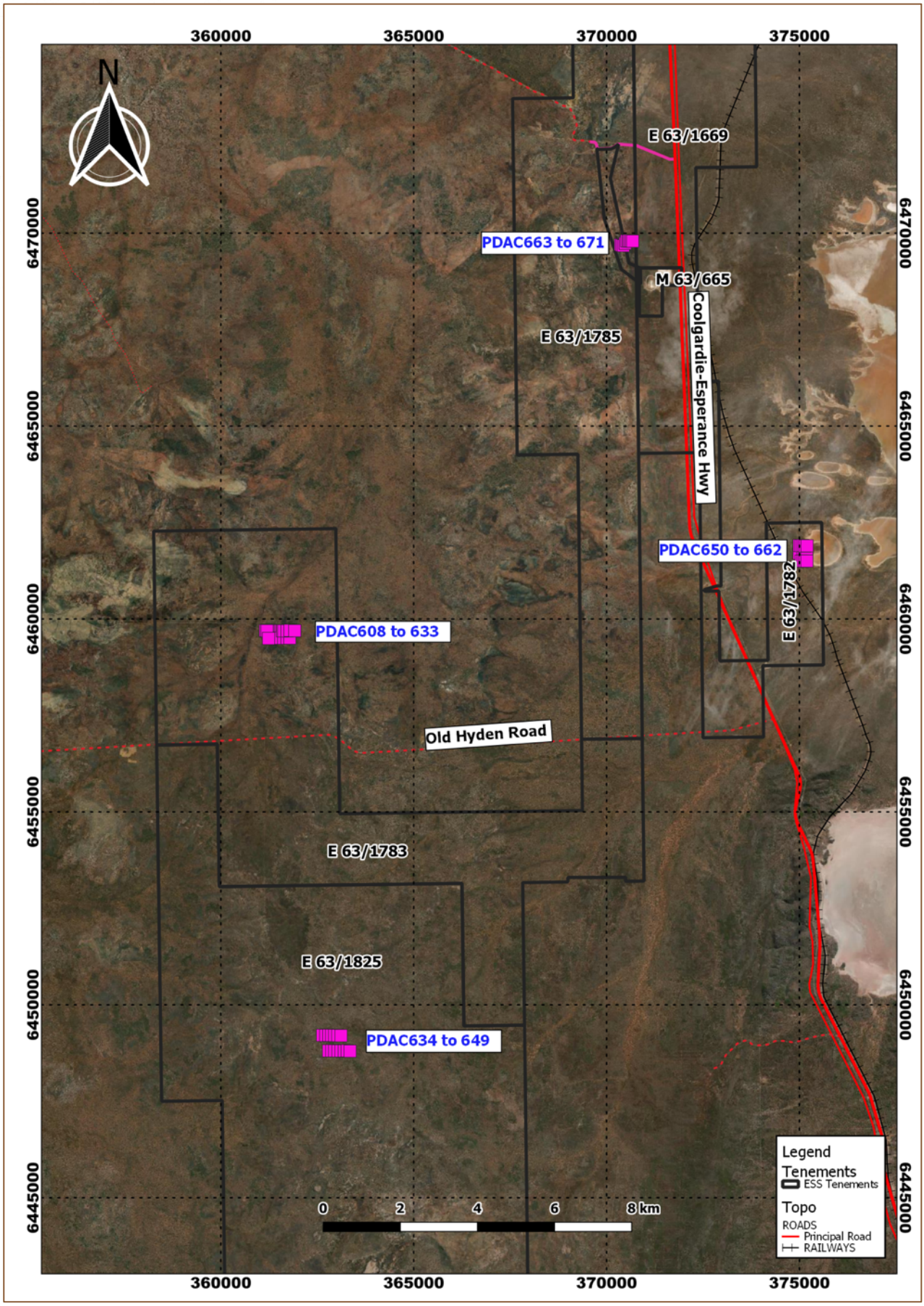

Figure 8 - Drilled AC holes on E63/1782, E63/1783, E63/1785 and E63/1825 for Dome South AC programme.

Pioneer Dome – South-West (E63/1783)

Drilling (34 holes for 1,396m) focused on the nickel sulphide potential as well as testing pegmatites identified in previous drilling. There were no observed nickel sulphides, however, pegmatites were intersected in PDAC622A and PDAC624A.

Hole PDAC624A intersected what is interpreted to be a ~2m wide pegmatite that was completely weathered. There were several pegmatites in PDAC622A including: 12 to 14m (strongly weathered), 47 to 50m (moderately weathered with quartz-microcline-mica) and 55 to 57m (to EOH - quartz-microcline-mica). There appeared to be some zoning of the pegmatite in PDAC622A, given the size and abundance of the microcline chips that were present. Assays are expected in May.

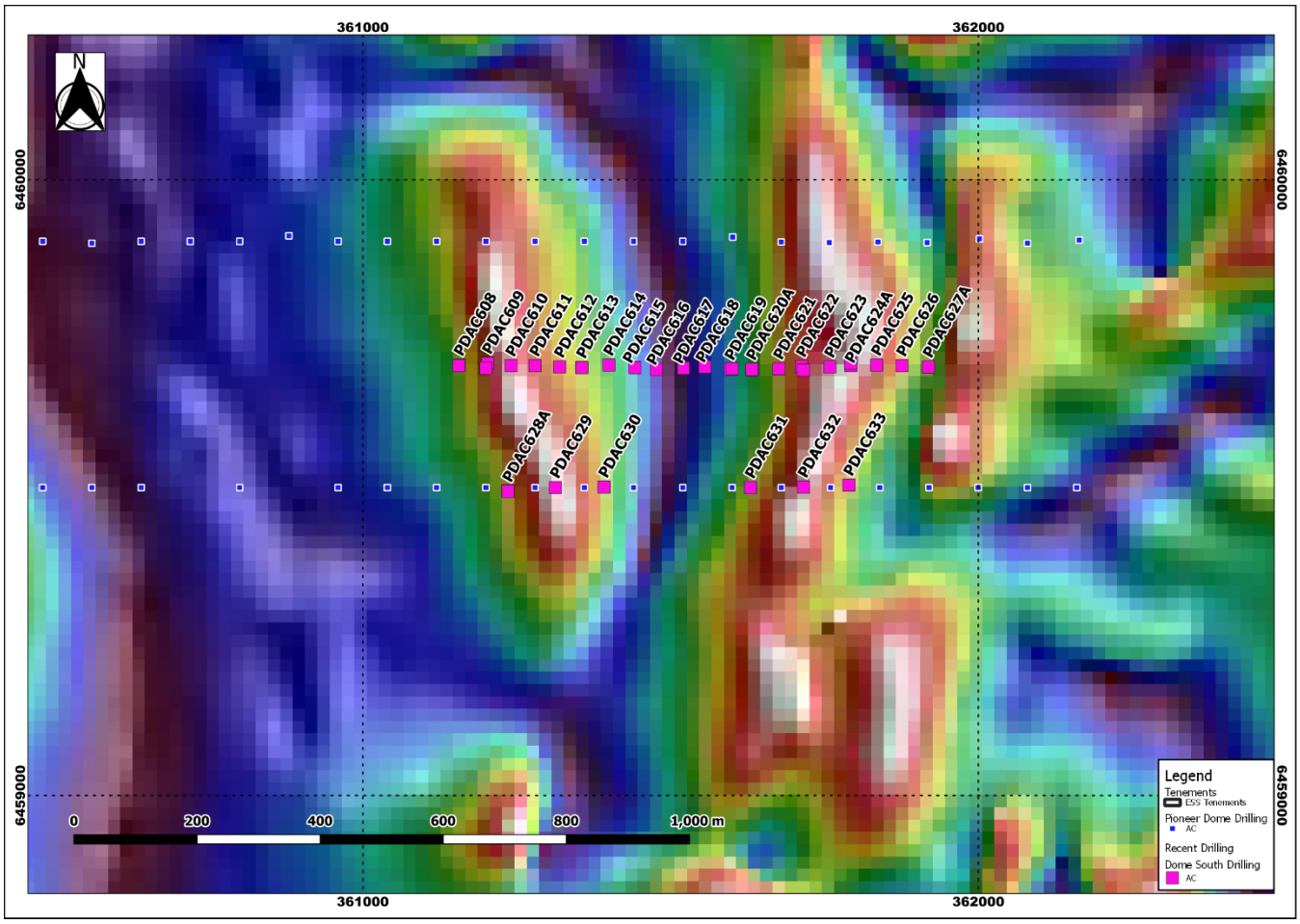

Figure 9 – AC holes on E63/1783 on top of the RTP Tilt image.

Pioneer Dome – South-East (E63/1782)

A total of 13 AC holes were drilled for 1,028m to test identified gold anomalism from previous AC drilling. Bedrock lithologies intersected in the drilling included ultramafic, basalt, felsic volcanic/volcaniclastic and dolerite. Minor quartz veining and deformed basalt was observed in PDAC652 and deformed felsic volcanics with quartz veining in PDAC657. Both lithologies are known to host gold mineralisation in the region.

Pioneer Dome Central (E63/1785)

Drilling was carried out test lithium-in-soil anomalism in the gneiss (see Figure 10). A total of nine holes were drilled for 82m using the air-core hammer, where penetration was limited due to the drilling technique and rig's capacity.

The majority of the holes intersected the gneiss with PDAC670 intersecting two metres of pegmatite to end-of-hole and the easternmost hole (PDAC671) containing amphibolite. Assays are expected in May.

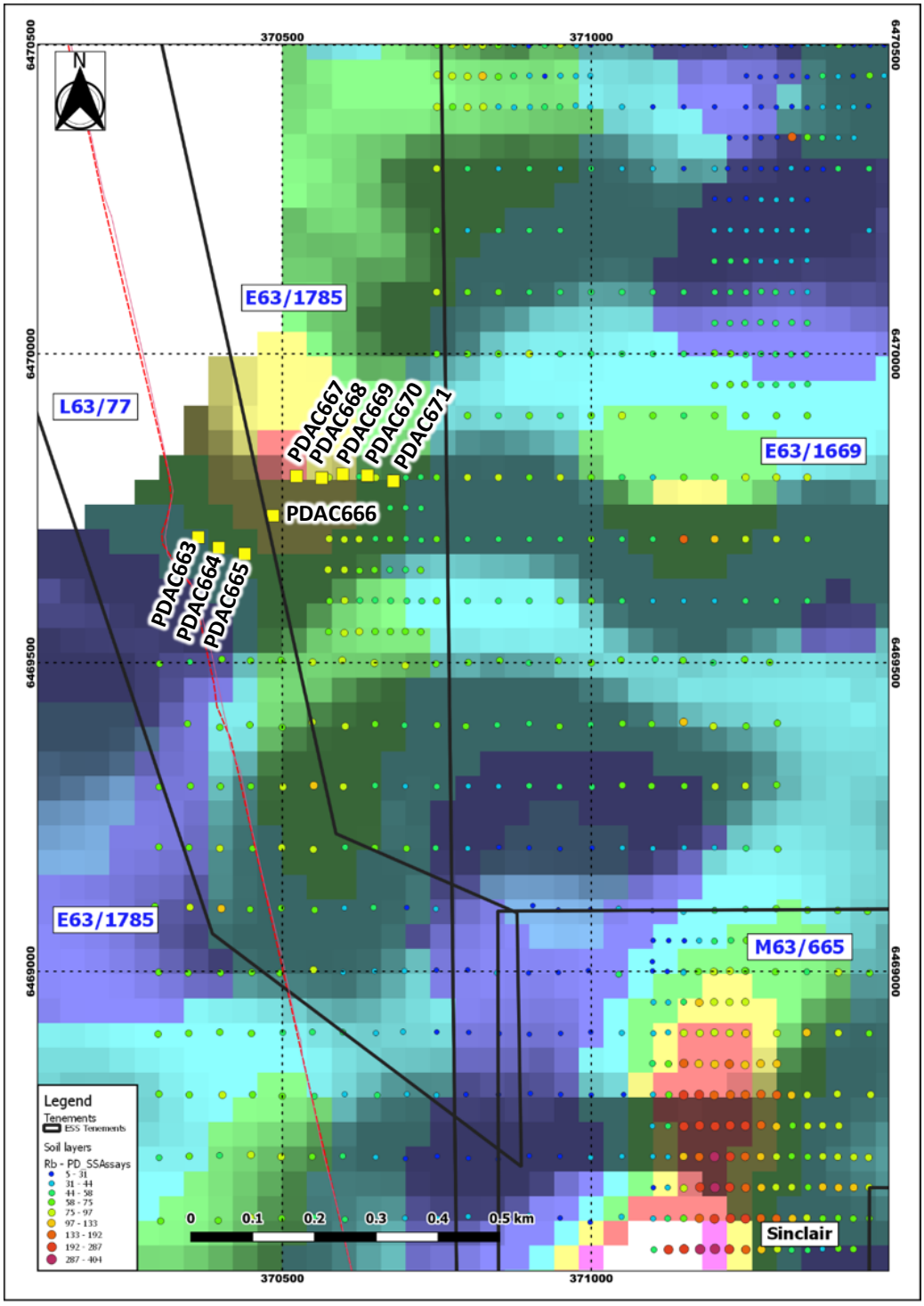

Figure 10 – AC hammer drilling (yellow squares) on E63/1785 with Rb (ppm)-in-soils on top of gridded lithium-in-soils.

Pioneer Dome – South (E63/1825)

A total of 16 AC holes for 494m were drilled targeting gold-in-soil and nickel-in-soil anomalism, see Figure 11. Drilling identified two holes with ultramafic on the southern line that are offset from the magnetic and nickel-in-soil anomaly. A total of 7 holes had pegmatites observed and there were zones of quartz veining in the metasediments. Assay results are not expected until May.

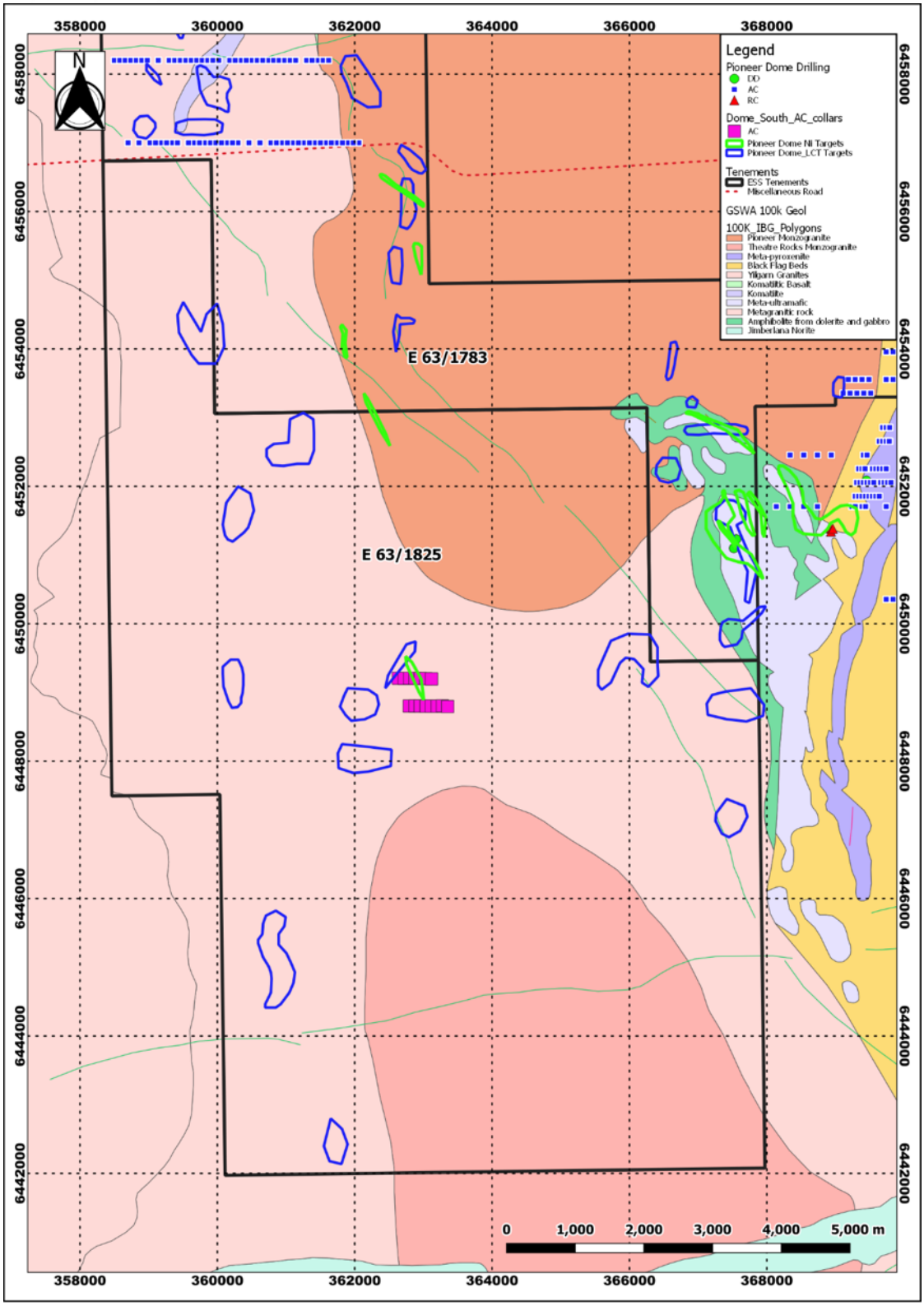

Figure 11 – Surface samples collected by Pioneer Resource/ Essential Metals and Ni and LCT targets on top of the 100k GSWA bedrock geology interpretation.

This ASX release has been approved by the Board of Directors.

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ABOUT ESSENTIAL METALS LIMITED

Essential Metals is a well-funded and active explorer focussed on the discovery of key global demand-driven commodities, for the creation of shareholder wealth through exploration and project development. The Company operates **three strategically located lithium and gold projects** in Western Australia.

100% OWNED AND MANAGED PROJECTS:

- **LITHIUM**: The **Pioneer Dome Lithium Project** is highly prospective for lithium-caesium-tantalum (LCT) mineral systems and includes the **Dome North Lithium Mineral Resource** of 11.2 million tonnes @ 1.21% lithium (Li_2O).[3]
- **GOLD:** The **Juglah Dome Project** is located 60km east-south-east of Kalgoorlie and is considered to be highly prospective for gold and has potential for VHMS style polymetallic deposits.
- **GOLD:** The **Golden Ridge Project** is located ~20km south-east of Kalgoorlie, WA. Our activities are focussed on reappraising known prospects as well as identifying new areas within the large land tenure.

JOINT VENTURE INTERESTS:

- **GOLD:** The **Acra** Project is near Kalgoorlie. Northern Star Resources Limited (ASX:NST) has earned a 75% Project Interest and continues to fully fund exploration programmes until approval of a Mining Proposal by DMIRS is received with Essential Metals holding a 25% interest.
- **GOLD:** The **Kangan** Project is in the West Pilbara and part of a joint venture with Novo Resources Corp (TSXV.NVO) and Sumitomo Corporation (TYO:8053), who will jointly fund 100% of gold exploration programmes until a decision to mine is made, with Essential Metals holding a 30% interest.
- **GOLD:** The **Balagundi** Project is subject to a farmin & JV agreement where Black Cat Syndicate Limited (ASX:BC8) is earning a 75% interest in the Project located at Bulong, near Kalgoorlie. Black Cat will then fully fund gold exploration programmes until a decision to mine is made, with Essential Metals retaining a 25% interest.
- **GOLD:** The Company holds a 25% free-carried interest (20% for nickel rights) in the **Larkinville** Project near Kambalda, WA, with Maximus Resources Ltd (ASX:MXR).
- **NICKEL:** The nickel mineral rights on the **Blair-Golden Ridge** Project, which includes the suspended Blair Nickel Sulphide Mine, are subject to a Farmin/Joint Venture with Australian Nickel Company Ltd, a nickel exploration specialist which is earning up to a 75% interest. The Company will retain a 25% free-carried interest up to a decision to mine.
- **NICKEL:** The Company holds a 20% free-carried interest (nickel only) in the **Wattle Dam** project near Kambalda, WA, with Maximus Resources Ltd (ASX:MXR).

[3] Refer to ASX announcement dated 29 September 2020 "Dome North Lithium Project – Resource Upgrade"

Forward Looking Statement

This announcement may contain forward-looking statements which involve a number of risks and uncertainties. These forward-looking statements are expressed in good faith and believed to have a reasonable basis. These statements reflect current expectations, intentions or strategies regarding the future and assumptions based on currently available information. Should one or more of the risks or uncertainties materialise, or should underlying assumptions prove incorrect, actual results may vary from the expectations, intentions and strategies described in this announcement. No obligation is assumed to update forward looking statements if these beliefs, opinions, and estimates should change or to reflect other future developments.

Reference to previous market announcements: 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 the relevant market announcements continue to apply and have not materially changed. The company confirms that the form and context in which Exploration Results or Competent Person's findings are presented have not been materially modified from the original market announcements.

Exploration Work - Competent Person Statement

Mr Andrew Dunn (MAIG), Exploration Manager who is employed full-time by Essential Metals Limited, compiled the technical aspects of this Report. Mr Dunn is eligible to receive equity-based securities in Essential Metals Limited under the Company's employee incentive schemes. Mr Dunn is a member of the Australian Institute of Geoscientists and has sufficient experience that is relevant to this style of mineralization and type of deposit under consideration and to the activity that is being reported on to qualify as a Competent Person as defined in the 2012 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Dunn consents to the inclusion in the report of the matters in the form and context in which it appears.

Appendix 1

Table 2 – Diamond drill hole locations

Deposit	Hole_ID	GDA94_z51_East	GDA94_z51_North	RL	Azimuth	Dip	Depth (m)
Cade	PDD594	367687	6485840	340	270	-60	38.10
Cade	PDD595	367693	6485840	340	270	-60	49.60
Cade	PDD596	367746	6485998	342	270	-60	61.60
Cade	PDD597	367706	6486080	338	270	-60	46.40
Cade	PDD598	367777	6486241	337	270	-60	54.70
Cade	PDD599	367744	6486159	337	270	-60	49.40
Cade	PDD600	367724	6485920	344	270	-60	61.60
Davy	PDD601	366214	6485794	348	270	-60	79.50
Davy	PDD602	366209	6485880	352	270	-60	35.60
Davy	PDD603	366231	6485930	351	295	-60	53.50
Davy	PDD604	366284	6485881	348	270	-60	126.15
Davy	PDD605	366304	6485936	353	295	-60	120.20
Davy	PDD606	366307	6485993	355	295	-60	102.60
Davy	PDD607	366254	6486033	360	270	-60	30.10
						TOTAL	909.05

Appendix 2

Table 3 – Air-Core drill hole locations

Prospect	Lease_ID	Hole_ID	GDA94_z51_North	GDA94_z51_East	RL	Azimuth	Dip	Depth
Regional	E63/1783	PDAC608	361157	6459699	357	0	-90	9
Regional	E63/1783	PDAC608A	361156	6459698	350	0	-90	59
Regional	E63/1783	PDAC609	361203	6459702	375	0	-90	9
Regional	E63/1783	PDAC609A	361200	6459694	350	0	-90	83
Regional	E63/1783	PDAC610	361241	6459698	364	0	-90	64
Regional	E63/1783	PDAC611	361280	6459698	361	0	-90	73
Regional	E63/1783	PDAC612	361320	6459696	370	0	-90	48
Regional	E63/1783	PDAC613	361356	6459695	375	0	-90	50
Regional	E63/1783	PDAC614	361400	6459699	370	0	-90	76
Regional	E63/1783	PDAC615	361442	6459695	378	0	-90	61
Regional	E63/1783	PDAC616	361477	6459692	338	0	-90	45
Regional	E63/1783	PDAC617	361521	6459694	382	0	-90	59
Regional	E63/1783	PDAC618	361556	6459696	377	0	-90	59
Regional	E63/1783	PDAC619	361597	6459692	378	0	-90	4
Regional	E63/1783	PDAC619A	361600	6459693	350	0	-90	62
Regional	E63/1783	PDAC620	361633	6459691	380	0	-90	3
Regional	E63/1783	PDAC620A	361632	6459692	350	0	-90	49
Regional	E63/1783	PDAC621	361676	6459693	382	0	-90	28
Regional	E63/1783	PDAC622	361713	6459697	384	0	-90	9
Regional	E63/1783	PDAC622A	361716	6459691	350	0	-90	57
Regional	E63/1783	PDAC623	361759	6459696	381	0	-90	26
Regional	E63/1783	PDAC624	361793	6459698	382	0	-90	9
Regional	E63/1783	PDAC624A	361793	6459702	350	0	-90	57
Regional	E63/1783	PDAC625	361835	6459699	381	0	-90	44
Regional	E63/1783	PDAC626	361876	6459698	373	0	-90	20
Regional	E63/1783	PDAC627	361919	6459696	379	0	-90	6
Regional	E63/1783	PDAC627A	361919	6459696	350	0	-90	13
Regional	E63/1783	PDAC628	361236	6459495	363	0	-90	7
Regional	E63/1783	PDAC628A	361236	6459494	350	0	-90	63
Regional	E63/1783	PDAC629	361313	6459500	367	0	-90	45
Regional	E63/1783	PDAC630	361392	6459501	368	0	-90	66
Regional	E63/1783	PDAC631	361630	6459500	373	0	-90	44
Regional	E63/1783	PDAC632	361716	6459501	372	0	-90	45
Regional	E63/1783	PDAC633	361790	6459504	381	0	-90	44
Regional	E63/1825	PDAC634	362793	6448804	406	0	-90	31
Regional	E63/1825	PDAC635	362877	6448805	393	0	-90	27
Regional	E63/1825	PDAC636	362953	6448804	393	0	-90	20
Regional	E63/1825	PDAC637	363038	6448802	398	0	-90	37
Regional	E63/1825	PDAC638	363117	6448802	387	0	-90	23
Regional	E63/1825	PDAC639	363202	6448802	399	0	-90	24
Regional	E63/1825	PDAC640	363276	6448806	391	0	-90	33
Regional	E63/1825	PDAC641	363353	6448797	386	0	-90	30
Regional	E63/1825	PDAC642	362636	6449207	389	0	-90	25
Regional	E63/1825	PDAC643	362721	6449205	384	0	-90	36
Regional	E63/1825	PDAC644	362800	6449207	384	0	-90	28
Regional	E63/1825	PDAC645	362876	6449206	378	0	-90	26
Regional	E63/1825	PDAC646	362953	6449204	350	0	-90	46
Regional	E63/1825	PDAC647	363034	6449202	386	0	-90	44
Regional	E63/1825	PDAC648	363118	6449198	382	0	-90	31
Regional	E63/1825	PDAC649	363194	6449202	376	0	-90	33
Regional	E63/1782	PDAC650	374997	6461703	284	0	-90	72

Prospect	Lease_ID	Hole_ID	GDA94_z51_North	GDA94_z51_East	RL	Azimuth	Dip	Depth
Regional	E63/1782	PDAC651	375099	6461707	284	0	-90	90
Regional	E63/1782	PDAC652	375152	6461711	282	0	-90	79
Regional	E63/1782	PDAC653	375196	6461720	274	0	-90	75
Regional	E63/1782	PDAC654	375002	6461904	276	0	-90	84
Regional	E63/1782	PDAC655	375049	6461899	280	0	-90	77
Regional	E63/1782	PDAC656	375100	6461903	285	0	-60	92
Regional	E63/1782	PDAC657	375151	6461891	284	0	-90	86
Regional	E63/1782	PDAC658	375203	6461896	284	0	-90	74
Regional	E63/1782	PDAC659	375050	6461500	279	0	-90	66
Regional	E63/1782	PDAC660	375099	6461500	274	0	-90	75
Regional	E63/1782	PDAC661	375148	6461499	275	0	-90	77
Regional	E63/1782	PDAC662	375200	6461500	272	0	-90	81
Regional	E63/1785	PDAC663	370364	6469703	340	270	-60	13
Regional	E63/1785	PDAC664	370397	6469686	341	270	-60	9
Regional	E63/1785	PDAC665	370439	6469676	341	270	-60	8
Regional	E63/1785	PDAC666	370485	6469738	339	270	-60	9
Regional	E63/1785	PDAC667	370523	6469802	350	270	-60	9
Regional	E63/1785	PDAC668	370564	6469799	338	270	-60	9
Regional	E63/1785	PDAC669	370598	6469805	344	270	-60	7
Regional	E63/1785	PDAC670	370638	6469803	341	270	-60	9
Regional	E63/1785	PDAC671	370680	6469794	338	270	-60	9
Heller NE	E15/1515	PDAC672	365952	6486815	350	310	-60	7
Heller NE	E15/1515	PDAC673	365987	6486785	350	310	-60	13
Heller NE	E15/1515	PDAC674	366000	6486767	350	310	-60	30
Heller NE	E15/1515	PDAC675	366038	6486732	350	310	-60	12
Heller NE	E15/1515	PDAC676	366063	6486698	350	310	-60	27
Heller NE	E15/1515	PDAC677	366103	6486686	350	310	-60	26
Heller NE	E15/1515	PDAC678	366135	6486667	350	310	-60	12
Heller NE	E15/1515	PDAC679	366165	6486632	350	310	-60	18
Heller NE	E15/1515	PDAC680	366265	6486984	350	310	-60	57
Heller NE	E15/1515	PDAC681	366306	6486974	350	310	-60	69
Heller NE	E15/1515	PDAC682	366342	6486966	350	310	-60	62
Davy to Cade	E15/1515	PDAC683	366368	6486915	350	310	-60	71
Davy to Cade	E15/1515	PDAC684	367054	6486250	350	270	-60	68
Davy to Cade	E15/1515	PDAC685	367094	6486249	350	270	-60	70
Davy to Cade	E15/1515	PDAC686	367135	6486245	350	270	-60	54
Davy to Cade	E15/1515	PDAC687	367175	6486242	350	270	-60	30
Davy to Cade	E15/1515	PDAC688	367216	6486239	350	270	-60	74
Davy to Cade	E15/1515	PDAC689	367256	6486234	350	270	-60	57
Davy to Cade	E15/1515	PDAC690	367293	6486230	337	270	-60	69
Davy to Cade	E15/1515	PDAC691	366860	6485999	344	270	-60	41
Davy to Cade	E15/1515	PDAC692	366904	6486002	341	270	-60	51
Davy to Cade	E15/1515	PDAC693	366978	6486001	341	270	-60	59
Davy to Cade	E15/1515	PDAC694	367023	6486001	338	270	-60	73
Davy to Cade	E15/1515	PDAC695	367062	6486002	334	270	-60	61
Davy to Cade	E15/1515	PDAC696	367098	6486002	338	270	-60	48
Davy to Cade	E15/1515	PDAC697	367141	6486004	336	270	-60	60
Davy to Cade	E15/1515	PDAC698	367180	6485997	337	270	-60	80
Davy to Cade	E15/1515	PDAC699	367221	6485997	342	270	-60	56
Davy to Cade	E15/1515	PDAC700	367265	6486003	342	270	-60	35

Appendix 3

JORC Code 2012 Table 1 Section 1 – Air-core and Diamond Drill Hole Sampling Techniques

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	• Nature and quality of sampling (eg cut Faces, 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.	• Air-core drilling was carried out with industry-standard face-sampling blade or hammer bit for sample collection. • Diamond drilling was carried out using HQ sized triple tube system.
	• Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	• The AC rig had sufficient air pressure and volume to keep the majority of samples dry on E15/1515, E63/1783, E63/1785 and E63/1825, however, any wet samples were recorded. Drilling through and below the paleo-channels on E63/1782 resulted in some wet samples. Where practical rock chips were sieved and sampled to mitigate contamination. • The cyclone was cleaned regularly to minimise contamination. • Duplicate samples and Certified Reference Standards were inserted at regular intervals to provide quality checks for assays.
	• 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.	• AC drilling was used to obtain three-metre composite samples using an aluminium scoop from the sample piles to produce a nominal 2.0 kg samples. • These samples are to be crushed and pulverised by pulp mill to nominal P80/75um to produce a pulverised sample for analysis. • Lithium exploration package of elements will be digested by a four-acid digestion and determined with a Mass Spectrometer (Intertek analysis code 4A Li48-MS). Any over range Li values will be re-analysed by a sodium peroxide zirconium crucible fusion with Mass Spectrometry (MS) finish.

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).	• Air-core Drilling.
		  ○ 3-inch (75mm) drill rods.
		  ○ 3 3/8-inch (85mm) diameter face-sampling blade or hammer bit.
		• Diamond Drilling.
		  ○ HQ size triple tube system (nominal core diameter of 61.1mm).

Drill sample recovery	• Method of recording and assessing core and chip sample recoveries and results assessed.	• During AC drilling the geologist recorded occasions when sample quality was poor, sample return was low, when the sample was wet or compromised in another way. • Core recoveries were logged for the diamond holes.

	• Measures taken to maximise sample recovery and ensure representative nature of the samples.	• AC sample recovery was generally good during the drilling. • Triple tube drilling was used to maximise the core recovery.
	• Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	• No assays have been received.
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.	• Geological information was captured during drilling. This included lithology, mineralogy, alteration, texture, recovery, weathering and colour. For diamond core structural measurements were taken. • The details captured were considered appropriate.
	• Whether logging is qualitative or quantitative in nature. Core (or costean, Face, etc) photography.	• Logging has primarily been qualitative, but it includes quantitative estimates of mineral abundance. • A representative sample of each AC drill metre was retained in chip trays for future reference, as well as sieved end-of-hole samples.
	• The total length and percentage of the relevant intersections logged.	• The entire length of the drill holes was geologically 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.	• AC drilling - three metre composites were taken using and aluminium scoop with equal amounts taken from all comprising piles. Majority of samples were dry. When sample was saturated then rock chips were sieved and sampled, where practical. Individual samples were approximately 2kg. • Diamond – competent core will be quarter core for analysis. Friable core will when whole core sampled and split at the laboratory.
	• Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	• Cyclones are routinely cleaned. • Geologist recorded any evidence of sample contamination, when present. • Geologist observed and recorded sample recoveries to track representivity.
	• 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.	• Duplicate field samples were routinely taken at a rate of 1 per 30 samples for AC drilling. • Assays have yet to be returned
	• Whether sample sizes are appropriate to the grain size of the material being sampled.	• The sample size is considered appropriate for the style of deposit being sampled.
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.	• The sample preparation and assay method used is considered standard industry practice and is appropriate for the deposit.
	• For geophysical tools, spectrometres, handheld XRF instruments, etc, the parametres used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.	• NA

	• 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.	• Standard Reference Materials were inserted at a rate of 1 per 30 samples. • Duplicate field samples were routinely taken at a rate of 1 per 30 samples for AC drilling. • Assays are yet to be returned.
Verification of sampling and assaying	• The verification of significant intersections by either independent or alternative company personnel. • The use of twinned holes.	• NA
	• Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	• The geological and sampling information were collected in MDS software, validated in Micromine and then uploaded to the Company's SQL drilling database.
	• Discuss any adjustment to assay data.	• NA
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.	• The collar locations of the holes have been surveyed by handheld GPS. • Diamond holes will be picked up using RTK DPGS.
	• Specification of the grid system used.	• MGA94 (Zone 51)
	• Quality and adequacy of topographic control.	• SRTM was used to validate the RL. This is sufficient for the exploration holes. Any holes to be used in MRE will be surveyed by differential GPS.
Data spacing and distribution	• Data spacing for reporting of Exploration Results.	• Drill spacing was variable due to the different objectives, it ranged from 80 to 300m spaced panels with drill holes 40 to 80m apart.
	• 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.	• Current data is sufficient to establish geological at the Cade and Davy deposits. All other drilling is exploratory in nature and hence drilling is insufficient to establish geological continuity.
	• Whether sample compositing has been applied.	• NA
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 introduced a sampling bias, this should be assessed and reported if material.	• The geometry of the spodumene mineralisation at Cade and Davy is broadly has a north-north-east striking and dips steeply to the east. The majority of the drill holes tested the mineralisation at a near optimal orientation. • Down hole intercept widths are estimated to closely approximate true widths based on the interpretation of the pegmatite bodies and the orientation of the drilling.
Sample security	• The measures taken to ensure sample security.	• The Company uses standard industry practices when collecting, transporting and storing samples for analysis.
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	• Sampling techniques for assays have not been specifically audited but follow common practice in the Western Australian exploration industry.

		• The assay data and quality control samples are periodically audited by an independent consultant.

Section 2 - Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

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	• The drilling reported herein is within E15/1515, E63/1782, E63/1783, E63/1785 and E63/1825 which are a granted Exploration Licences. • The tenements are located approximately 20 to 55km north-west to north-north-west of Norseman, WA. • The Company is the registered holder of the tenement and holds a 100% unencumbered interest in all minerals within the tenement. • The tenement is on vacant crown land. • The Ngadju Native Title Claimant Group has a determined Native Title Claim which covers the Pioneer Dome project.
	• 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.	• At the time of this report E15/1515, E63/1782, E63/1783, E63/1785 and E63/1825 were in Good Standing. To the best of the Company's knowledge, other than industry standard permits to operate there are no impediments to Company's operations within the tenement.
Exploration done by other parties	• Acknowledgment and appraisal of exploration by other parties.	• There has been no previous LCT exploration drilling or sampling on the Pioneer Dome project other than that carried out by the Company. Previous mapping by the Western Australian Geological Survey and Western Mining Corporation (WMC) in the 1970's identified several pegmatite intrusions, however, these were not systematically explored for Lithium.
Geology	• Deposit type, geological setting and style of mineralisation.	• The Project pegmatites are consistent with records of highly differentiated Lithium Caesium Tantalum (LCT) pegmatite intrusion. This type of pegmatite intrusions are the target intrusions of hard rock lithium deposits. The Dome North deposits are classified as a Spodumene sub type and is highly enriched in Lithium.
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, including 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 plus hole length. • If the exclusion of this information is justified on the basis that the information is	• Refer to Appendix 1 and Appendix 2 of this announcement.

	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.	
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. • 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').	• NA
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.	• Refer to figures in this 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 of the drill details for the latest drill programmes have been provided in this announcement.
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.	• All meaningful and material exploration data has been reported.
Further work	• The nature and scale of planned further work (eg tests for lateral extensions or	• Complete SG measurements and sampling of diamond core.

	depth extensions or large-scale step-out drilling). • Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	• Submit diamond core samples for analysis. • Conduct metallurgical test work on diamond core samples • Interpret remaining assay results when they have been received. • Further drill planning to extend the current MRE.