17 July 2023

Drilling completed at Pioneer Dome Lithium Project

Further to its announcement of 8 June 2023, **Essential Metals Limited (ASX: ESS)** advises that the Reverse Circulation (RC) drilling programme designed to test three additional target areas at the Pioneer Dome Lithium Project in WA has now been completed.

No spodumene-bearing pegmatites were intersected (based on visual observation), however the multi-element assays are expected to be available in August and will assist in determining evidence of fractionation of the pegmatites and lithium enrichment.

KEY HIGHLIGHTS

- **South of Heller Deposit (DN_32 Li_2O Target)**: Hole PDRC732 intersected two pegmatite lenses, respectively two and four metres thick, from 40m and 44m.
- **PEG003 (Ni sulphide and Li_2O Target)**: Traces of sulphides (most commonly pyrite) were observed in all three holes. In PDRC744, two occurrences of trace lepidolite were noted at 20 to 21m (~2% lepidolite) and 27 to 28m (~1% lepidolite) in pegmatite.
- **PEG004 (Li_2O Target)**: Trace (<1%) to minor lepidolite (<5%) was observed in multiple holes.

A total of 34 RC drill-holes (2,630m) were completed (see Table 1 for a summary of drilling statistics and Appendix 1 for hole details). The programme tested three lithium targets at Dome North (DN_32, DN_28/DN_30 and DN_04/DN_11) as well as one nickel-lithium target (PEG003) and a lithium target (PEG004) on the eastern flank of Pioneer Dome, as shown in Figure 1.

Table 1: RC drill program statistics.

Target	Location	Number of RC	Metres Drilled
DN_32	South of	10	752
DN_28/DN_30	East of	4	318
DN_04/DN_11	Between	8	480
PEG003	PEG003	3	400
PEG004	PEG004	9	680
TOTALS		**34**	**2,630**

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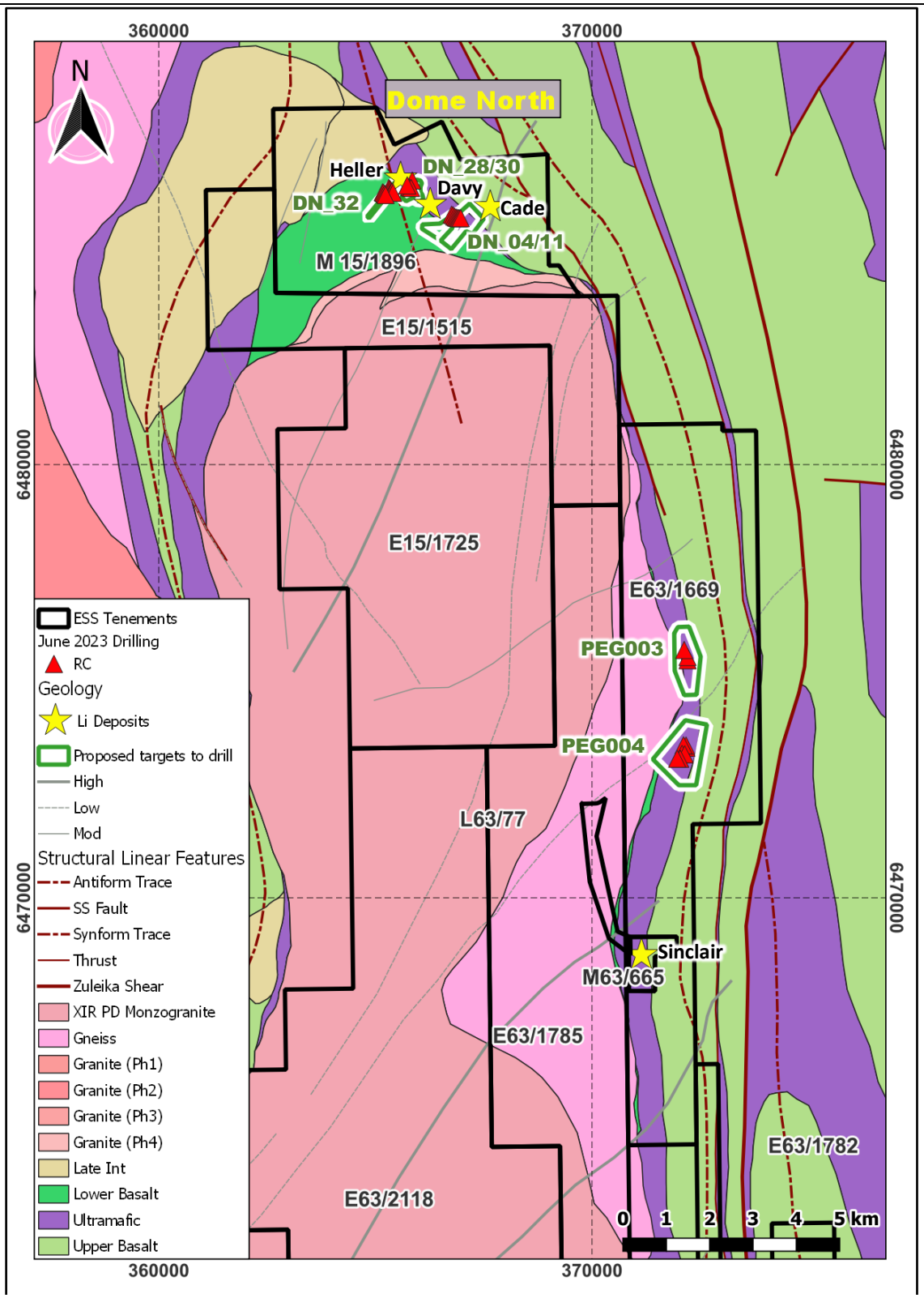

Figure 1: Targets drill tested and interpreted regional geology.

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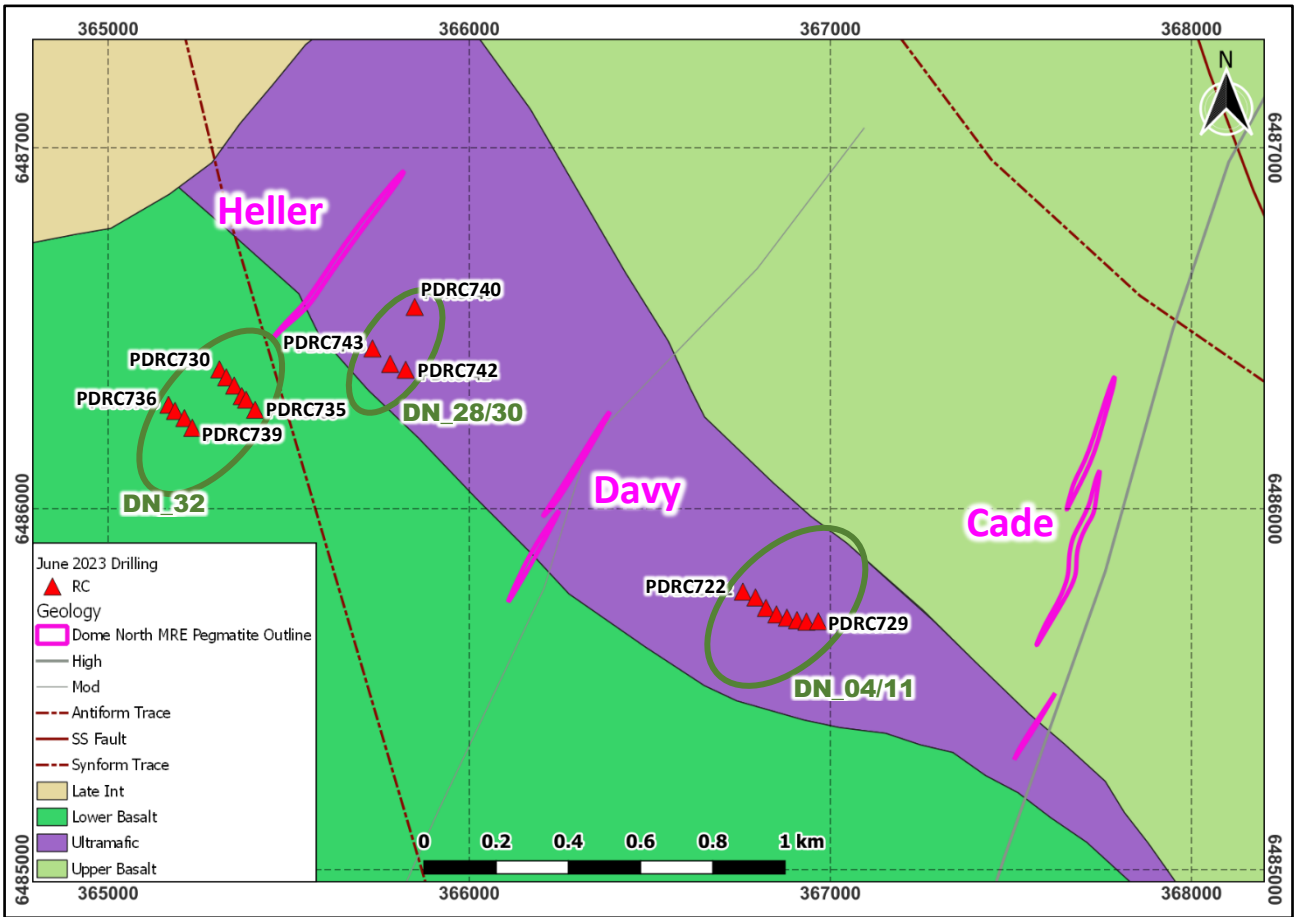

Figure 2: Collar locations of the RC drilling conducted at Dome North with respect to the outlines (yellow) of the known Dome North lithium deposits.

South of Heller – Target DN_32

Ten RC holes (PDRC730 to PDRC739) were drilled, totalling 752m, along the projected strike to the south-west of Heller, see Figure 2.

PDRC730 encountered 6m of granitic pegmatite from 54m and PDRC732 intersected two pegmatite lenses of two and four metres thickness from 40m and 44m. Neighbouring holes were drilled deeper than the nominal 60m to test the down-dip continuation, however these holes did not intersect any pegmatites.

Four holes on the southernmost line were drilled to test the southern strike extension, however no pegmatite was encountered in these holes.

East of Heller – Target DN_28/DN_30

Drilling conducted in July 2021 tested just beyond the north-eastern extent of sub-cropping pegmatite with the results indicating two possible interpretations. The first is that the pegmatite pinched out before the drilling (PDRC531 to PDRC533) and the second is that it is north-west dipping.

Mapping and reconnaissance carried out in late-2022 had identified a poorly exposed north-east trending pegmatite that did not appear to be effectively drill tested. Rock sampling indicates that this pegmatite was moderately to strongly fractionated (K/Rb: 44 to 22) and was lithium enriched (up to 1,134ppm Li_2O).

In the current drill programme, hole PDRC740 encountered two distinct granitic pegmatites at 18m and 58m, respectively. The interpretation is that the previously rock sampled sub-cropping pegmatite is dipping ~30 degrees to the north-west whilst the orientation of the deeper pegmatite is unknown.

A pair of scissor holes ~160m to the south-south-west intersected ~1m pegmatite of simple composition at 22m downhole, on the south-east dipping hole. This indicates that the pegmatite is dipping to the north-west and is potentially thinning to the south.

Between Cade and Davy – Target DN_04/DN_11

Shallow RC drilling conducted in July 2021 confirmed a >50ppm Li-in-regolith anomaly of ~300m wide (PDRC571 to PDRC576) within the lower saprolite position, beneath a maghemite bearing paleochannel. The presence of maghemite in the paleochannel explained the north-north-east trending magnetic feature, however, the source of Li anomalism remained uncertain.

The paleochannel has been interpreted to have eroded a fractured zone that is parallel to the strike of Davy and Cade pegmatites. It was interpreted that a LCT pegmatite could have intruded this interpreted structure, where it is in a dilational setting. Transported cover (up to 20m thick) preluded field mapping, auger, and soil sampling.

Eight RC holes (PDRC722 to PDRC729) were drilled for a total of 480m, see Figure 2. No pegmatite or granitic material was encountered in the drilling that can explain the geochemical anomaly.

Eastern Flank – Target PEG003

Previous RC drilling for LCT exploration identified significant nickel mineralisation (2m @ 3.2% Ni, 0.18% Cu and 132ppm Zn) within the ultramafic above the footwall contact. Conceptually, this could be interpreted as hanging wall mineralisation above a channel position. The low value of zinc (132ppm) indicates that the nickel is not related to an interflow sediment. Holes were planned to test the footwall contact of the ultramafic with the underlying basalt, which is the main nickel sulphide position for the Kambalda and Widgiemooltha deposits.

Three RC holes (PDRC744 to PDRC746 – see Figure 3) were drilled for a total of 400m. No massive sulphides were encountered with abundant sulphides noted in hole PDRC744 from 69 to 70m (~5%) and PDRC746 from 81 to 82m (~10%). Traces of sulphides (most commonly pyrite) were present throughout the holes.

In hole PDRC744, two occurrences of trace lepidolite were noted at 20 to 21m (~2% lepidolite) and 27 to 28m (~1% lepidolite).

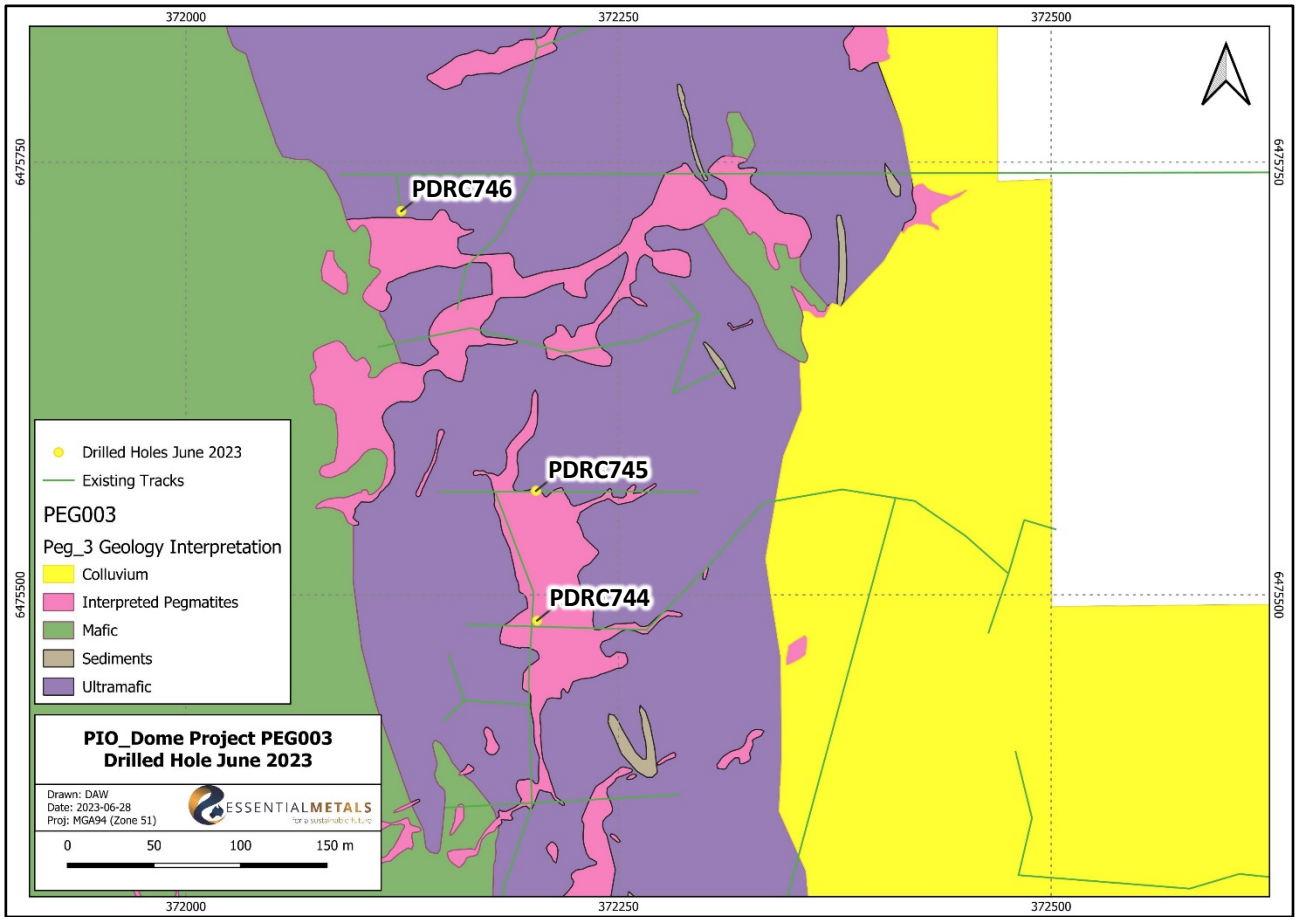

Figure 3: PEG003 RC holes drilled in June 2023 on interpreted geology.

Eastern Flank – Target PEG004

Previous mapping identified a north trending lepidolite zone with selective rock samples returning values up to 2.77% Li_2O, that had not been previously drilled. Additional field work in late-2022 sampled available pegmatitic drill spoils from nickel exploration holes conducted in the 1990's and the assays inferred an increasing fractionation (K/Rb: 89 to 60) southwards with an accompanied increase in lithium values. This potentially indicated more fractionated, and lithium enriched pegmatites present to the south under a thin veneer of transported cover.

The drilling was planned to assist in determining the thickness and orientation of the lepidolite bearing pegmatite as well as understanding the thickness and zonation of pegmatites associated with the drill spoils.

Nine RC holes (PDRC747 to PDRC755) were drilled totalling 680m, see Figure 4. East-West oriented scissor holes (PDRC748-PDRC753) defined two to four metres wide pegmatites on the western holes, indicating that the lepidolite bearing pegmatite is dipping ~45 degrees to the west (Figure 5) with a strike length over 200m. Approximately 10% lepidolite was noted in PDRC752 from 29 to 31m (downhole).

Hole PDRC747 that was drilled in a southward direction adjacent to the aforementioned lepidolite bearing pegmatite. It intersected the pegmatite from 27m to 33m with trace lepidolite observed from 30-31m (~2%), as well as the interpreted east-west trending pegmatite from 43m to 110m. Assay results are awaited to determinate fractionation and LCT enrichment.

The western hole (PDRC755) of the most southern scissor pair encountered 66m thick granitic pegmatite from surface.

In hole PDRC754, two pegmatites were noted with the first one 6m wide from three metres (down-hole) and the second one was 12m thick from 59m (downhole). No lithium minerals were identified within these pegmatites.

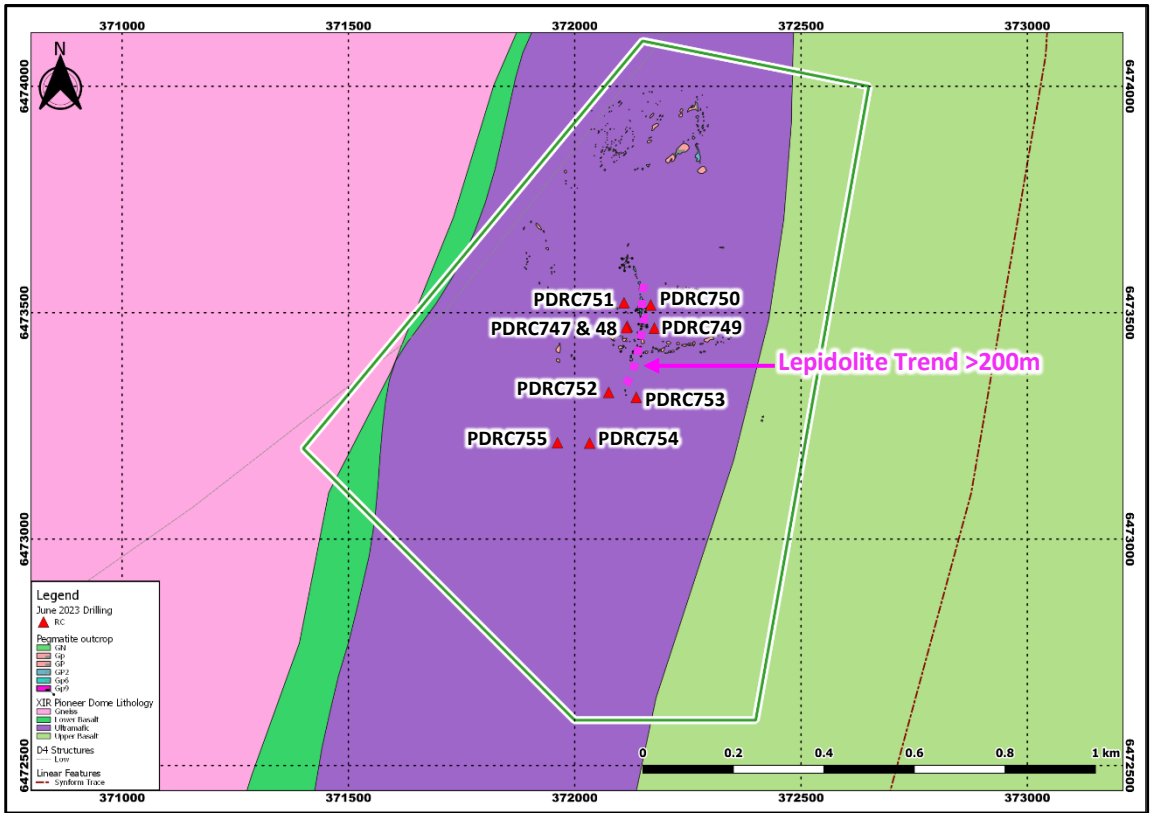

Figure 4: RC holes drilled in June 2023 with interpreted Lepidolite bearing pegmatite.

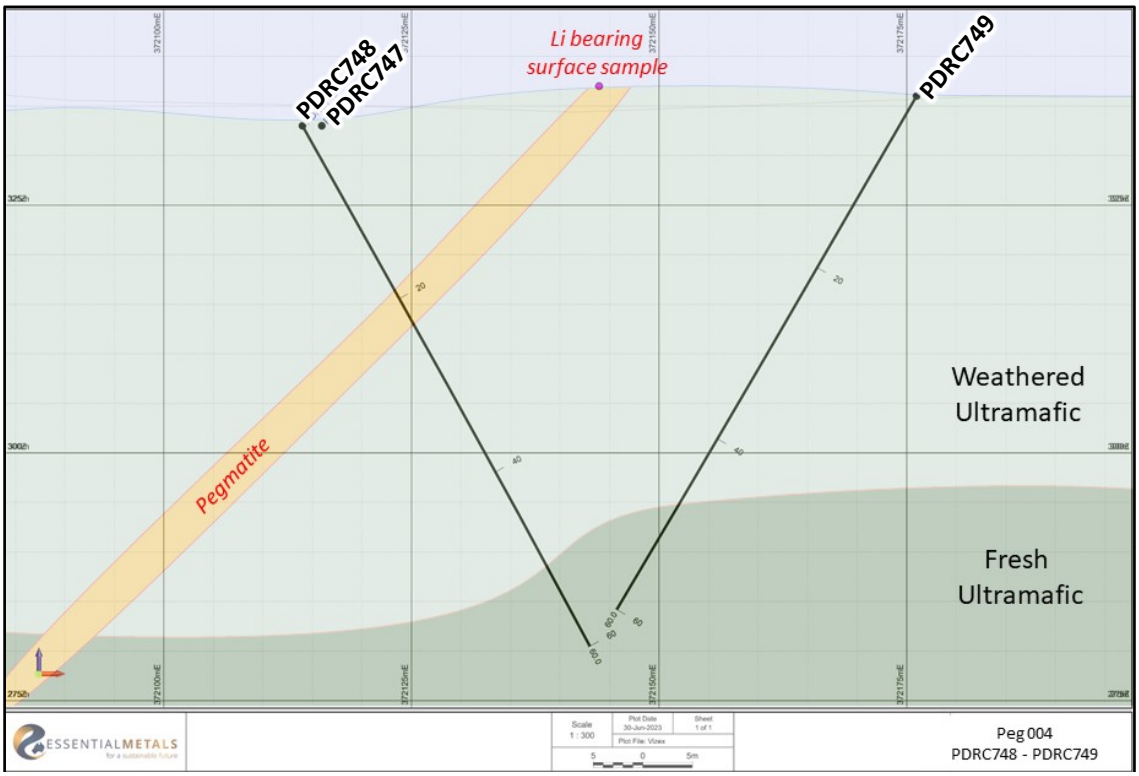

Figure 5: Cross-section (looking north) of PDRC748 and PDRC749. Note that in PDRC748 a 3m wide pegmatite was encountered and it is interpreted to dip ~45 degrees to the west within ultramafic package.

NEXT STEPS

- Receipt of multi element assays for the drill programme and interpretation of the results.
- Drill planning to obtain samples for further metallurgical test work.
- Water exploration drilling for future processing water sources.

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

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PIONEER DOME LITHIUM PROJECT

The 450km^2 Pioneer Dome Project (ESS: 100%) is 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 @ 1.16% 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 Pioneer Dome, the Bald Hill Mine, the Mt Marion Mine, the Manna Project and the Buldania Project – all of which are located within a 90km radius. 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.

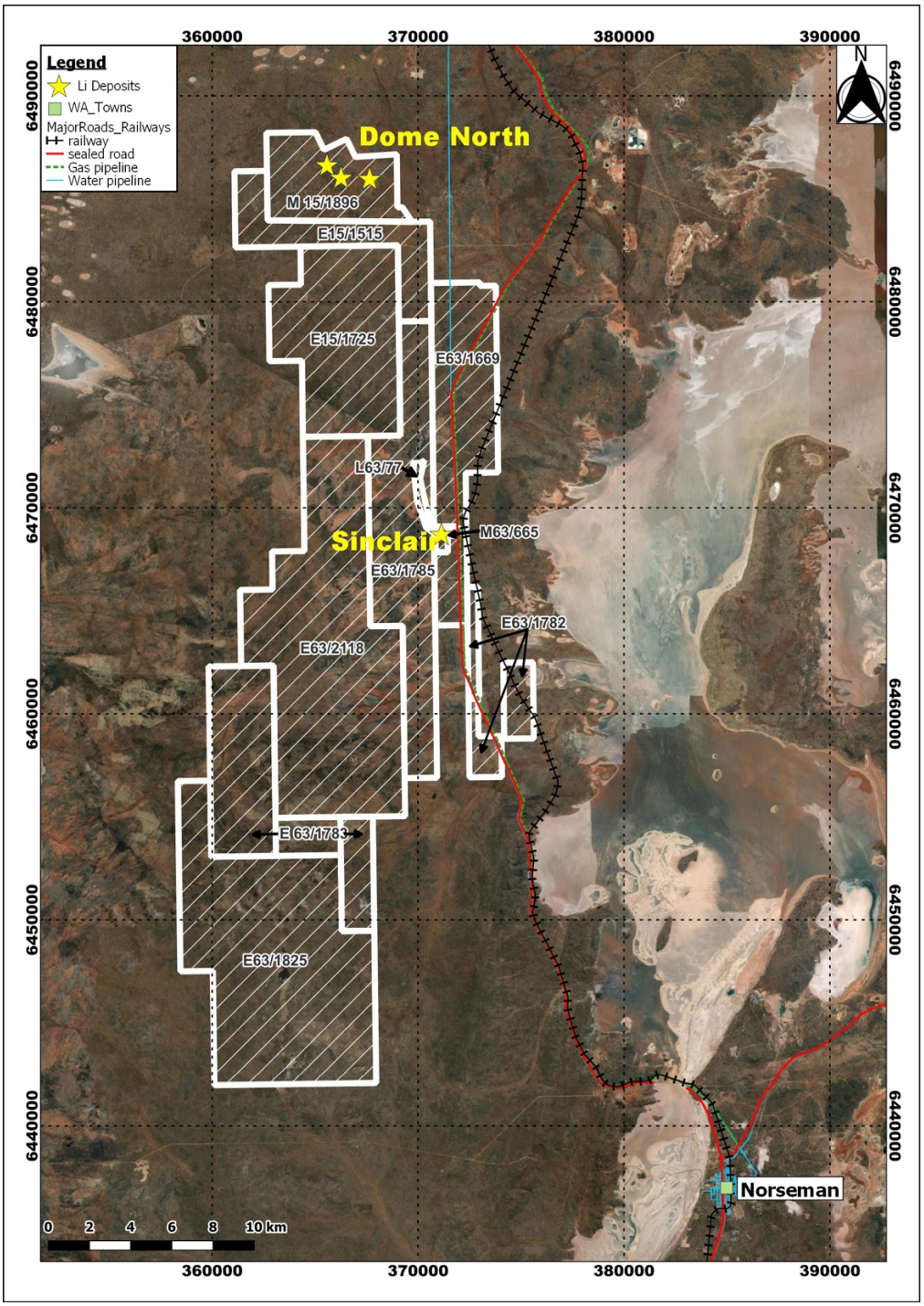

Figure 6 – Pioneer Dome Lithium Project lithium deposits, tenements and major infrastructure.

[1] Refer ASX:ESS announcement 20 December 2022 "Dome North Resource upgrade"

ABOUT ESSENTIAL METALS LIMITED

Essential Metals is a well-funded and active explorer/developer focussed on the discovery of lithium and other 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 @ 1.16% lithium (Li_2O) including 8.7 million tonnes @ 1.23% lithium (Li_2O) within the Indicated Category.[2]
- **GOLD:** The **Juglah Dome Project** is located 60km east-south-east of Kalgoorlie and is 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), who will fund 100% of gold exploration programmes until a decision to mine is made, with Essential Metals holding a 30% interest in precious metals and 100% of all other minerals.
- **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 exploration programmes until completion of a bankable feasibility study with Essential Metals retaining a 25% interest in all minerals.
- **GOLD:** The Company holds a 25% interest, free-carried interest up to a decision to mine, in all minerals except 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% interest, free-carried interest up to a decision to mine.
- **NICKEL:** The Company holds a 20% (nickel only) interest, free-carried to a completion of a feasibility study which recommends that commercial mining operations be commenced, in the **Wattle Dam** project near Kambalda, WA, with Maximus Resources Ltd (ASX:MXR).
- **NICKEL:** The Company holds a 20% interest, free carried up to completion of a feasibility study which recommends the establishment of a mining area, in the **Maggie Hays** project near Lake Johnson, WA, with Poseidon Nickel Ltd (ASX:POS).

[2] Refer ASX announcement 20 December 2022 "Dome North 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 Results – Competent Person Statement

Mr Andrew Dunn (MAIG) holds the position of Exploration Manager and is employed full-time by Essential Metals Limited. Mr Dunn is eligible to receive equity-based securities in Essential Metals Limited under the Company's employee incentive schemes. Mr Dunn compiled the technical aspects of this Announcement pertaining to Exploration Results, which is based on and fairly represents information compiled by Mr Dunn. Mr Dunn is a member of the Australian Institute of Geoscientists and has sufficient experience that is relevant to this style of mineralisation 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.

Dome North Lithium Mineral Resource – Competent Person Statement

The information in this report that relates to the Dome North Lithium Project Mineral Resource is based on information compiled by Mr Andrew Dunn (Exploration Manager and permanent employee of Essential Metals Limited) and Mr Lauritz Barnes (consultant with Trepanier Pty Ltd). Mr Dunn is eligible to receive equity-based securities in Essential Metals Limited under the Company's employee incentive schemes. Mr Dunn and Mr Barnes are both members of the Australian Institute of Geoscientists. Mr Dunn and Mr Barnes both have sufficient experience of relevance to the styles of mineralisation and types of deposits under consideration, and to the activities undertaken to qualify as Competent Persons as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Specifically, Mr Dunn is the Competent Person for the database (including all drilling information), the geological and mineralisation models plus completed the site visits. Mr Barnes is the Competent Person for the construction of the 3-D geology / mineralisation model plus the estimation. Mr Dunn and Mr Barnes consent to the inclusion in this report of the matters based on their information in the form and context in which they appear.

Dome North Mineral Resource by deposit and category: (0.3% Li_2O cut-off grade)

Deposit	Classification	Tonnes (Mt)	Li_2O %	Ta_2O_5 ppm	Contained Li_2O (T)	Fe_2O_3 %
Cade	Indicated	6.9	1.26	49	88,000	0.44
	Inferred	1.3	0.88	49	11,000	0.44
Davy	Indicated	1.6	1.08	81	18,000	0.54
	Inferred	0.6	0.89	73	4,000	0.58
Heller	Inferred	0.7	1.02	76	8,000	0.72
Total	**Total**	**11.2**	**1.16**	**57**	**129,000**	**0.48**

Note: Appropriate rounding applied.

Appendix 1 – Hole Details for June 2023 RC Drilling

Target	Hole_ID	Hole Type	Max Depth (m)	MGA94 Zone 51 Easting	MGA94 Zone 51 Northing	RL	Azimuth	Dip
DN_04/11	PDRC722	RC	60	366758	6485770	356	290	-60
DN_04/11	PDRC723	RC	60	366793	6485754	337	290	-60
DN_04/11	PDRC724	RC	60	366822	6485725	339	290	-60
DN_04/11	PDRC725	RC	60	366851	6485707	342	290	-60
DN_04/11	PDRC726	RC	60	366880	6485698	333	290	-60
DN_04/11	PDRC727	RC	60	366908	6485691	336	293	-60
DN_04/11	PDRC728	RC	60	366934	6485687	335	290	-60
DN_04/11	PDRC729	RC	60	366967	6485688	336	293	-58
DN_32	PDRC730	RC	72	365308	6486386	340	315	-60
DN_32	PDRC731	RC	140	365327	6486364	353	317	-61
DN_32	PDRC732	RC	60	365349	6486341	350	315	-60
DN_32	PDRC733	RC	120	365370	6486312	351	317	-60
DN_32	PDRC734	RC	60	365382	6486302	351	315	-60
DN_32	PDRC735	RC	60	365407	6486274	348	315	-60
DN_32	PDRC736	RC	60	365167	6486288	346	315	-60
DN_32	PDRC737	RC	60	365185	6486271	346	319	-59
DN_32	PDRC738	RC	60	365211	6486251	349	315	-60
DN_32	PDRC739	RC	60	365233	6486224	349	315	-60
DN28/30	PDRC740	RC	66	365849	6486559	352	120	-60
DN28/30	PDRC741	RC	72	365781	6486401	355	120	-60
DN28/30	PDRC742	RC	60	365824	6486385	364	300	-60
DN28/30	PDRC743	RC	120	365732	6486444	368	116	-61
PEG003	PDRC744	RC	120	372203	6475485	341	270	-60
PEG003	PDRC745	RC	120	372202	6475560	349	271	-61
PEG003	PDRC746	RC	160	372124	6475722	351	273	-60
PEG004	PDRC747	RC	120	372116	6473470	338	179	-60
PEG004	PDRC748	RC	60	372114	6473467	337	90	-61
PEG004	PDRC749	RC	60	372176	6473466	332	270	-60
PEG004	PDRC750	RC	60	372168	6473517	339	270	-60
PEG004	PDRC751	RC	60	372109	6473522	336	89	-60
PEG004	PDRC752	RC	60	372075	6473324	329	92	-60
PEG004	PDRC753	RC	60	372136	6473313	327	272	-61
PEG004	PDRC754	RC	100	372033	6473212	326	267	-60
PEG004	PDRC755	RC	100	371962	6473213	331	90	-61