

29 October 2024

ACTIVITIES REPORT QUARTER ENDED 30 SEPTEMBER 2024

Lady Grey Lithium Project

- **Moving Loop Electromagnetic (MLEM) survey over priority geophysical and geochemical Au, Cu and Ni targets finalised at Lady Grey**
- **Detailed interpretation has highlighted EM conductor model plates coincident with Au (up to 256ppb Au), Cu, and Ni surface and downhole geochemical anomalies (ASX 29 April 2024)**
- **MLEM survey lines 1-3 target a >2 km long surface Au geochemical anomaly coincident with a regional structural flexure zone favourable for hosting Au**
- **Historic Bounty Gold Mine which produced ~1.3 Moz Au¹ on Covalent Lithium's Mount Holland mine site, located adjacent to Lady Grey and Lady Lila Gold Prospect, is located along strike to the south of Lady Grey**
- **Programmes of Work (PoW) granted for drilling on Modelled MLEM Conductor Plate under EM Line #6**

Lanthanein Resources Limited (**Lanthanein** or the **Company**) is pleased to provide its quarterly report for the three-month period ending 30 September 2024.

Lady Grey Lithium Project, Western Australia

During the quarter the Company announced the completion of six MLEM survey lines over gold, copper and nickel geochemical targets on the Company's Lady Grey Project at Mt Holland in WA's Yilgarn Province. Interpretation by the Company's geophysical consultants has generated EM conductor model plates representing sources for EM anomalies that coincide with the location of geochemical anomalies resulting from an ultra-fine fraction (UFF) soil geochemistry survey completed earlier this year and historical downhole assay data

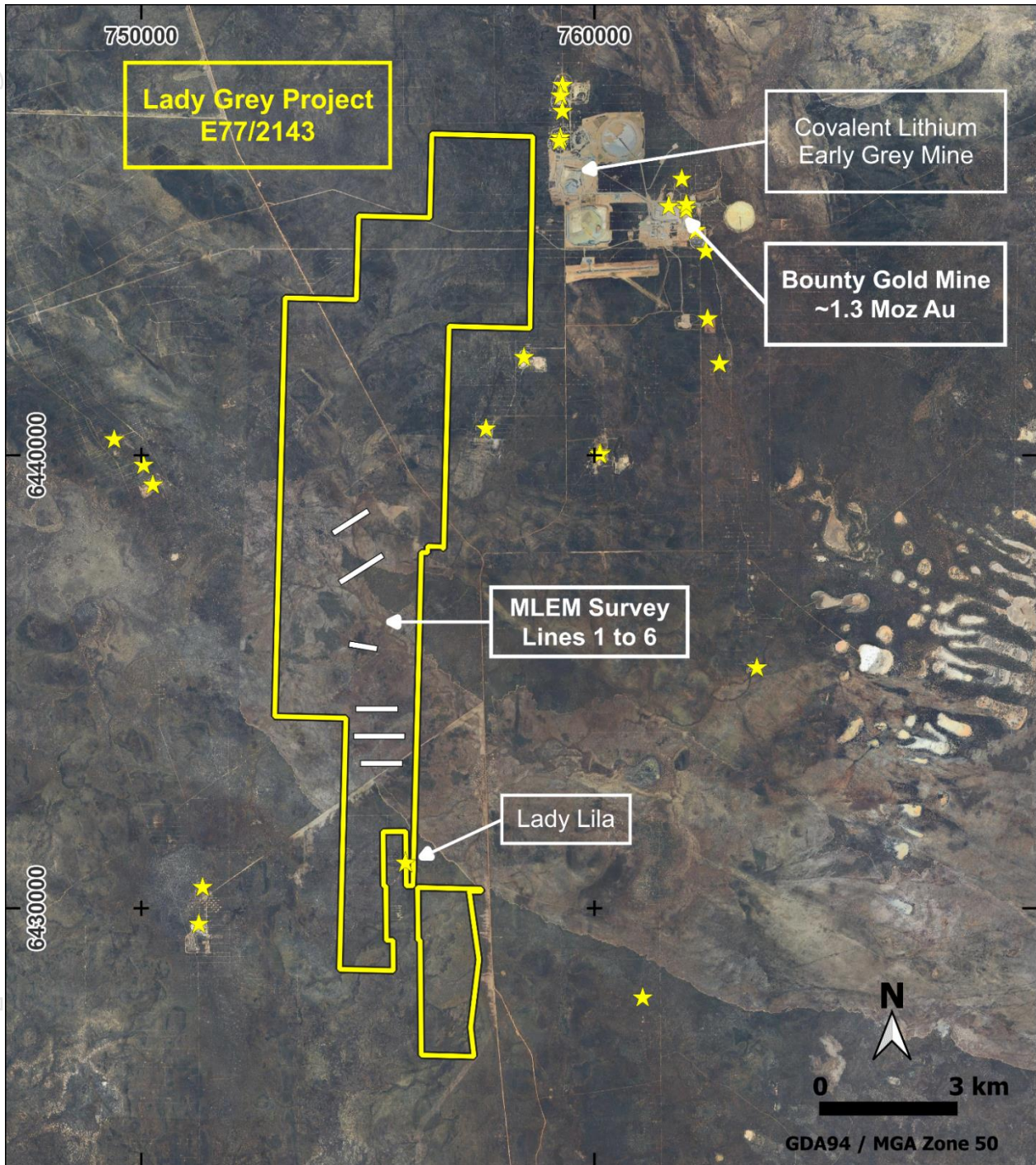


Figure 1: Lady Grey Project tenement E77/2143 outline (yellow), known gold occurrences (yellow stars), Earl Grey lithium mine and recently completed MLEM survey lines (white), all overlain on a Google Earth aerial photo image.

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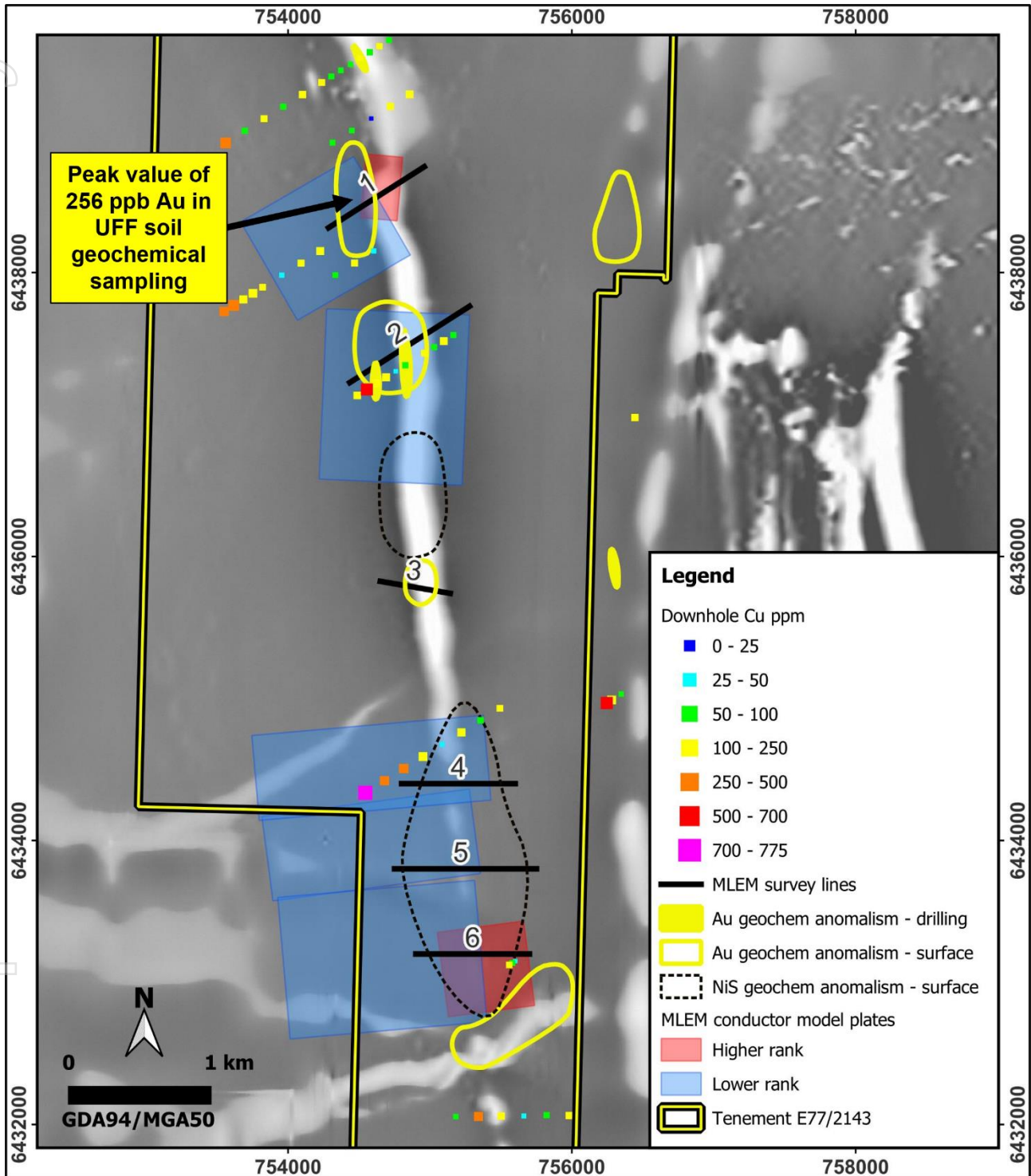


Figure 2: Recently completed MLEM survey lines 1 to 6 (black), gold and nickel geochemical anomaly outlines (yellow), and downhole Cu assays as coloured squares projected vertically to surface, all overlay on a greyscale magnetic TMIRTP-1VD image. Higher ranked MLEM conductor model plates shown projected to surface (red shaded polygons), other lower ranked MLEM conductor model plates interpreted to be cause by black shales located to the west (blue shaded polygons), and all MLEM conductor model plates are dipping to the east.

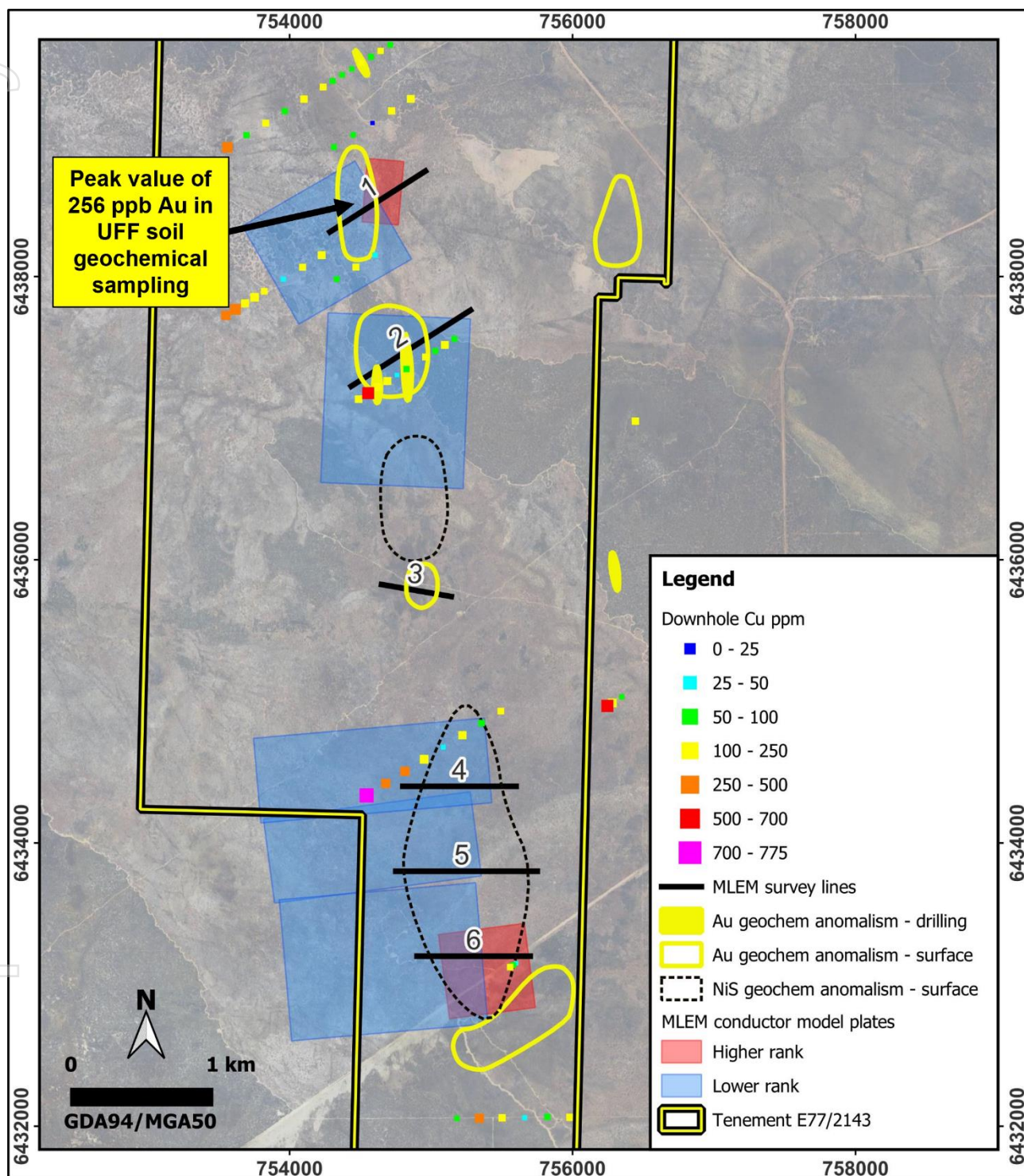


Figure 3: Recently completed MLEM survey lines 1 to 6 (black), gold and nickel geochemical anomaly outlines (yellow), and downhole Cu assays as coloured squares projected vertically to surface, all overlay on a Google Earth aerial photo image. Higher ranked MLEM conductor model plates shown projected to the surface (red shaded polygons), other lower ranked MLEM conductor model plates interpreted to be cause by black shales located to the west (blue shaded polygons), and all MLEM conductor model plates are dipping to the east.

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Moving Loop Electromagnetic Survey (MLEM) Survey

The Company's geophysical consultants, Resource Potentials Pty Ltd (ResPot), have identified and modelled a number of potential bedrock EM conductor source bodies across recently completed MLEM survey lines. A large conductor model plate is modelled to the west of most the MLEM survey lines, which at this stage is interpreted to represent a conductive black shale sedimentary unit (see blue shaded conductor model plates in Figures 2 and 3). Higher ranked isolated bedrock EM conductor plate source bodies have been modelled to fit strong EM anomalies located near the centre of MLEM survey lines 1 and 6 (see red shaded conductor model plates in Figures 2 and 3). In both cases, these higher ranked EM conductor plates are located close to a NNW trending magnetic ultramafic unit and surface geochemical UFF anomalism in Au, Cu, Ni and other pathfinder elements at surface. The higher ranked modelled bedrock EM conductor plate located near the centre of MLEM survey line 6 is within a broad Ni surface geochemical anomaly, and the up-dip projection of the modelled conductor plate is located along strike to the SSE of downhole Cu geochemical anomalism in historical drilling assays. This EM conductor model plate has a strike length of 600 m, a depth extent of 800 m and a conductance of 1,300 S. The top of the model plate is approximately 195 m below surface, with the plate dipping to the east. The higher ranked bedrock EM conductor plate modelled to fit a strong EM anomaly located near the centre of MLEM survey line 1 sits down-dip from a broad zone of elevated surface Au geochemical anomalism, which includes a UFF soil sample with a peak value of 256 ppb Au (ASX 29 April 2024). This modelled EM conductor plate has a strike length of 450 m, a depth extent of 450 m and a conductance of 1,200 S. The top of the model plate is approximately 115m below surface and it also dips to the east (see Figure 4). This EM conductor plate forms a high priority Au target zone, because Au mineralisation at the nearby Bounty Gold mine was associated with EM anomalism from pyrrhotite and other associated sulphide minerals, and therefore represents a priority target for drill testing during Lanthanein's maiden drill program at the Lady Grey Project, with a PoW application underway for gaining approvals to test this priority target as well as other Au, base metal and lithium targets at Lady Grey.

A 3D view looking towards the northwest at the EM conductor model plate with an EM 1D conductivity inversion cross section image ("CDI") for MLEM survey Line 1 is shown in Figure 4. The EM conductor model plate represents a more robust target for drill targeting due to its isolation compared to the interpreted black shale to the west, and the coincident geochemical anomalism, but it is encouraging to see the plate modelled EM anomaly source resolved in a similar position in the CDI cross section to provide higher confidence for drilling this target zone. A similar comparison between conductor the model plate and CDI results were obtained for MLEM survey Line 6 (not shown here), also representing a high priority drilling target. A preliminary proposed drillhole is shown in the 3D view in Figure 4, but note that initial drill testing of this gold prospect will likely start with shallower drilling of the up-dip projection of the EM conductor model plate where sulphide

minerals are likely oxidised, and drilling deeper into fresh rock to ensuring adequate drill testing for the sources of the surface Au and base metal geochemical anomalism.

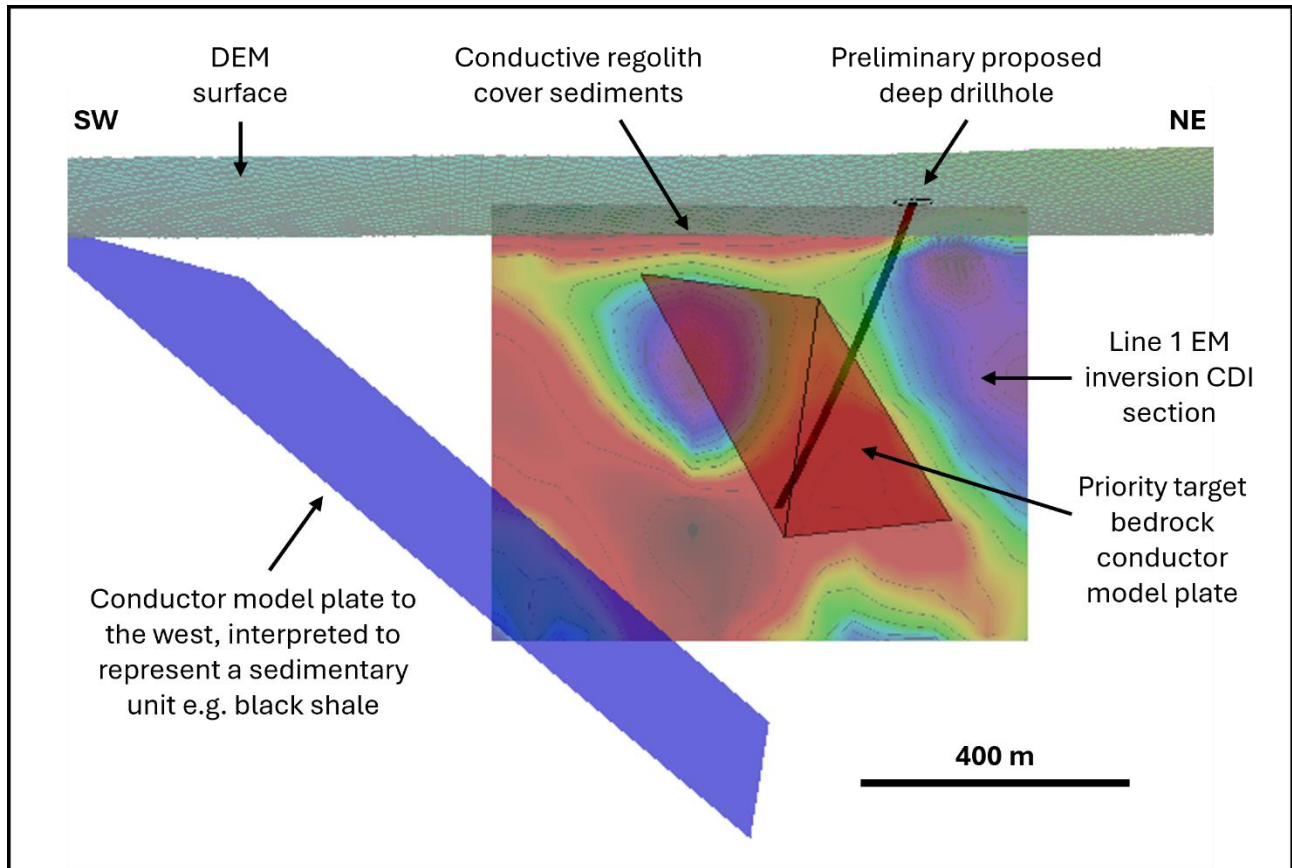


Figure 4: 3D View looking north along MLEM survey Line 1 showing EM conductor model plates (red and blue shaded polygons), MLEM 1D conductivity inversion model (CDI) coloured such that hot colours are more conductive, and the topographic surface wireframe (aqua). A preliminary proposed deep drillhole is shown as a black trace along the CDI image. No vertical exaggeration and all data are referenced to the GLO30 DEM surface (orthometric/geoidal height datum).

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The MLEM survey lines were designed to cross high-priority Au, Cu and Ni target zones characterised by elevated surface and downhole geochemical anomalism located along a greenstone sequence trending NNW from the Forrestania greenstone belt. The high-priority Au target zones are located close to a flexure zone in the greenstone sequence, which can be inferred from the magnetic anomaly high related to an ultramafic unit trending NNW-SSE through the Lady Grey Project and forms a favourable structural zone for hosting gold deposits (see Figure 2). The Lady Lila Gold Prospect held by Forrestania Resources Ltd (ASX:FRS) is located along the same ultramafic trend directly to the south of the Lady Grey Project (see Figure 1). The MLEM surveys were carried out at the Lady Grey Project in order to detect potential iron sulphide mineralisation associated with Au, Cu and Ni mineralisation, which may typically include chalcopyrite for Cu mineralisation, pyrrhotite and pentlandite for Ni mineralisation, and in this local project area, pyrrhotite may also be associated with Au mineralisation as was the case for the Bounty gold deposits (Coggon and Rutherford, 1994). Pyrrhotite-rich orebodies at the Bounty and Bounty North gold deposits were modelled to have an EM conductance of approximately 400 S from historical MLEM survey data. However, note that barren sulphide zones and sedimentary conductors also produced anomalous EM responses with the Bounty gold mine area and could be a contributor to some or all of the EM anomalies recently identified at Lady Grey.

The Lady Grey MLEM surveys were carried out by DeepVision Surveys Pty Ltd (DVS) along 6 traverses using a Slingram (receiver out of loop) configuration, with 200 x 200 m transmitter loops, a DRTX transmitter, SMARTEM24 receiver and a Fluxgate B-Field EM sensor located 100 m outside of the loop on the western side. These specifications were used for all survey lines, except Line 2 which was completed with a 100 m x 100 m transmitter loop and smaller receiver offset due to access constraints. Along-line survey station spacing was 50 m for all survey lines. The MLEM transmitter was operated at a frequency of 1 Hz and a transmitted current ranging between 34 to 78 Amps. These are understood to be the first ground EM surveys to be undertaken in this local area, and EM survey progress was difficult due to thick vegetation and poor weather conditions during the survey period. Initial MLEM data processing was carried out by DVS and then the digital EM data files were provided to geophysical consultants at ResPot for further survey data QC, editing, processing, conductor plate modelling and 1D conductivity inversion modelling.

Programme of Works (PoW) Granted

Subsequent to the end of the quarter the Company advised of the grant of a Programme of Work (PoW) on the Company's Lady Grey Project. to drill test a modelled conductor plate under Moving Loop EM (MLEM) Survey Line #6 (refer ASX release 24 September 2024). Interpretation of the MLEM results, by the Company's geophysical consultants, has generated

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EM conductor model plates representing sources for EM anomalies that coincide with ultra-fine fraction (UFF) soil geochemical anomalies and historical downhole assay data.

The modelled conductor plate under MLEM Line #6 will be drilled from the existing historical access road which links the old Laday Ada mine and the Marvel Loch Forrestania Road. As the modelled conductor plate is 200m below surface and dips to the east the drill testing will consist of three RC pre collars with diamond tail drill holes.

A PoW application with DEMIRS to enable drilling of the EM Conductor Plate under MLEM Line #1 is progressing with the finalisation of a Spring Flora and Fauna Survey conducted by the Company's environmental consultants on the total area covered by MLEM survey lines #1 to #3, including proposed access tracks. A Heritage clearance survey for this area is scheduled for early in the following quarter.

Drone Aeromagnetism Survey

A close spaced aeromagnetic survey on 25 metre line spacings was recently completed using an Unmanned Airborne Vehicle (UAV). The area covered by the survey provides coverage of a gap between two open file aeromagnetic surveys plus give closer spaced coverage over the MLEM Line #1 modelled conductor plate.

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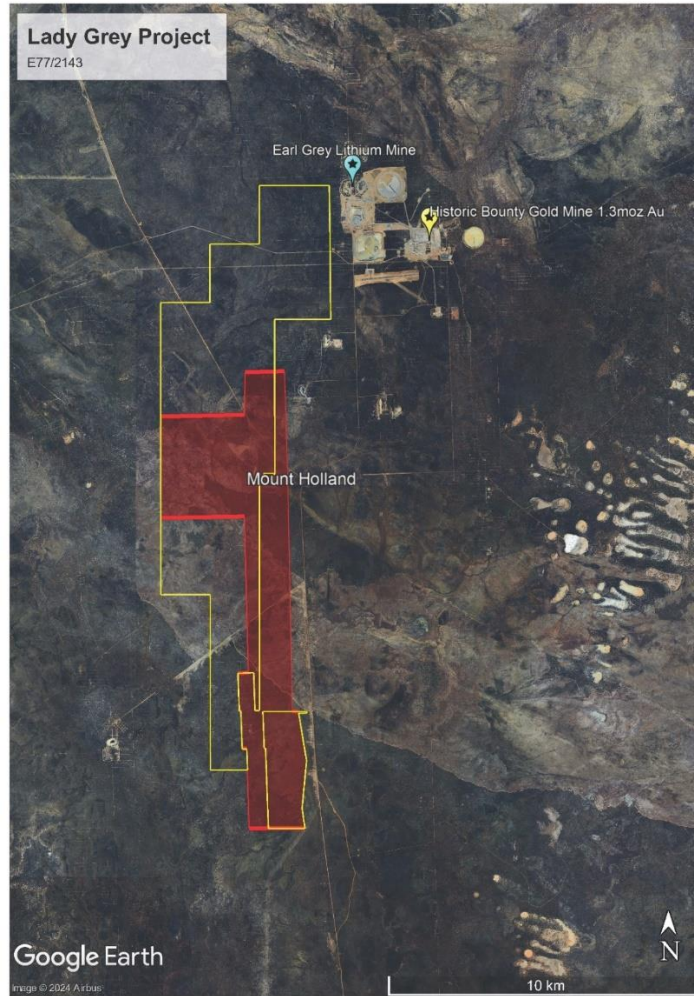


Figure 5: Area flown with 25 metre spaced UAV aeromagnetics shown in red

Corporate

Board Update

During the quarter the Company advised that Mr Tom Langley had resigned as a Director of the Company effective 16 August 2024.

Lapse of Performance Shares

Subsequent to the quarter the Company advised that 13,461,538 Class B Performance Shares had lapsed on unvested on 1 October 2024.

ASX Additional Information

- ASX Listing Rule 5.3.1: Exploration and Evaluation Expenditure during the quarter was \$278,000. Full details of exploration activity during the quarter are set out in this report.

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- ASX Listing Rule 5.3.2: There was no substantive mining production and development activities during the quarter.
- ASX Listing Rule 5.3.5: Payment to related parties of the Company and their associates during the quarter: \$60,417. The Company advises that this relates to non-executive directors' remuneration and additional technical consulting fees. Please see the Remuneration Report in the Annual Report for further details on Directors' Remuneration.

This activities report has been authorised for release by the Directors of the Company. For additional information please visit our website at www.lanthanein.com

Releases submitted to the ASX during the Quarter included:

25/10/2024	Lady Grey Exploration Update
08/10/2024	Letter to Shareholders - Notice of Annual General Meeting
08/10/2024	Notice of Annual General Meeting/Proxy Form
03/10/2024	Notification of cessation of securities
26/09/2024	Annual Report to Shareholders
26/09/2024	Appendix 4G and Corporate Governance Statement
24/09/2024	EM Gold, Base Metal Targets at Lady Grey Project
09/09/2024	Closing Date for Director Nominations
21/08/2024	Notification of cessation of securities
19/08/2024	Notification of cessation of securities
16/08/2024	Final Director's Interest Notice
16/08/2024	Placement Capacity Update
16/08/2024	Director Resignation
02/08/2024	Results of Meeting
29/07/2024	Quarterly Activities/Appendix 5B Cash Flow Report
16/07/2024	Lady Grey Exploration Update
03/07/2024	Letter to Shareholders - Notice of General Meeting
03/07/2024	Notice of General Meeting/Proxy Form

The information referred to in this announcement relates to the following source(s):

¹ source: <https://portergeo.com.au/index.asp>.

LANTHANEIN RESOURCES LTD

Western Australian Projects

The information in this announcement that relates to Exploration Results and other geological information has been compiled under the supervision of Mr Thomas Langley. Mr Langley is a member of the Australian Institute of Geoscientists and the Australasian Institute of Mining and Metallurgy and is a consultant to the Company. Mr Langley has sufficient experience which is relevant to the style of mineralisation and type 23 of deposit under consideration and the activity he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves ('the JORC Code')". Mr Langley consents to the inclusion in the report of the matters based on his information in the form and context in which it appears. The Company

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confirms that it is not aware of any new information or data that materially affects the information in the original reports, and that the form and context in which the Competent Person's findings are presented have not been materially modified from the original reports.

The information in this press release relating to Mineral Resources is based on information compiled, reviewed and assessed by Mr. Bill Oliver, who is a Member of the Australasian Institute of Mining and Metallurgy and the Australian Institute of Geoscientists. Mr. Oliver is a consultant to the Company and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined by the 2012 Edition of the Australasian Code for reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code). Mr. Oliver consents to the inclusion of the information in the form and context in which it appears.

The Company confirms that all material assumptions and technical parameters underpinning the mineral resource estimates continue to apply and have not materially changed. The Company confirms that the form and context in which the mineral resource estimates are presented have not been materially modified.

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Schedule 1 – Lanthanein Resources Limited Tenement Information as at 30 September 2024

Tenement Number and Name	Ownership	Sub-blocks	Area (sq.km)	Application /Grant Date	Expiry Date
E 09/2515 - Gascoyne (WA)	100% LNR via Dalkeith Capital Pty Ltd	47	147.02	17-Dec-21	16-Dec-26
E 09/2516 - Gascoyne (WA)	100% LNR via Dalkeith Capital Pty Ltd	25	78.35	17-Dec-21	16-Dec-26
E 77/2796 - Koolya (WA)	100% LNR via Dalkeith Capital Pty Ltd	47	138.78	05-Nov-21	04-Nov-26
E 77/2797 - Koolya (WA)	100% LNR via Dalkeith Capital Pty Ltd	28	82.68	05-Nov-21	04-Nov-26
E 52/4012 - Mt Clere (WA)	100% LNR via Dalkeith Capital Pty Ltd	191	591.63	23-Mar-22	22-Mar-27
EL6717 - Murraydium (SA)	100% LNR via Southern Rare Earths Pty Ltd	78	876.00	06-Apr-22	05-Apr-28
EL6969 – Murraydium (SA)	100% LNR via Southern Rare Earths Pty Ltd	671km ²	671.00	17 Jan 24	16 Jan 30
E77/2143 – Lady Grey Project (WA)	Earning up to a 70% interest Current interest in Stage 1: 0%	47		5 Nov 21	4 Nov 26

There was no change in the Company's interests in the above tenements during the quarter.

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Appendix 5B

Mining exploration entity or oil and gas exploration entity quarterly cash flow report

Name of entity

LANTHANEIN RESOURCES LTD

ABN

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Quarter ended ("current quarter")

30 September 2024

Consolidated statement of cash flows	Current quarter \$A'000	Year to date (3 months) \$A'000
1. Cash flows from operating activities		
1.1 Receipts from customers	-	-
1.2 Payments for		
(a) exploration & evaluation (if expensed)	-	-
(b) development	-	-
(c) production	-	-
(d) staff costs	-	-
(e) administration and corporate costs	(213)	(213)
1.3 Dividends received (see note 3)	-	-
1.4 Interest received	9	9
1.5 Interest and other costs of finance paid	-	-
1.6 Income taxes paid	-	-
1.7 Government grants and tax incentives	-	-
1.8 Other (provide details if material)	42	42
1.9 Net cash from / (used in) operating activities	(162)	(162)

2. Cash flows from investing activities		
2.1 Payments to acquire:		
(a) entities	-	-
(b) tenements	-	-
(c) property, plant and equipment	-	-
(d) exploration & evaluation (if capitalised)	(278)	(278)
(e) investments	-	-
(f) other non-current assets	-	-

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Mining exploration entity or oil and gas exploration entity quarterly cash flow report

Consolidated statement of cash flows		Current quarter \$A'000	Year to date (3 months) \$A'000
2.2	Proceeds from the disposal of:		
	(a) entities	446	446
	(b) tenements	-	-
	(c) property, plant and equipment	-	-
	(d) investments	-	-
	(e) other non-current assets	-	-
2.3	Cash flows from loans to other entities	-	-
2.4	Dividends received (see note 3)	-	-
2.5	Other (drilling co-funding payment)	-	-
2.6	Net cash from / (used in) investing activities	168	168
3.	Cash flows from financing activities		
3.1	Proceeds from issues of equity securities (excluding convertible debt securities)	-	-
3.2	Proceeds from issue of convertible debt securities	-	-
3.3	Proceeds from exercise of options	-	-
3.4	Transaction costs related to issues of equity securities or convertible debt securities	-	-
3.5	Proceeds from borrowings	-	-
3.6	Repayment of borrowings	-	-
3.7	Transaction costs related to loans and borrowings	-	-
3.8	Dividends paid	-	-
3.9	Other (provide details if material)	-	-
3.10	Net cash from / (used in) financing activities	-	-
4.	Net increase / (decrease) in cash and cash equivalents for the period		
4.1	Cash and cash equivalents at beginning of period	2,793	2,793
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(162)	(162)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	168	168
4.4	Net cash from / (used in) financing activities (item 3.10 above)	-	-

Mining exploration entity or oil and gas exploration entity quarterly cash flow report

Consolidated statement of cash flows		Current quarter \$A'000	Year to date (3 months) \$A'000
4.5	Effect of movement in exchange rates on cash held	-	-
4.6	Cash and cash equivalents at end of period	2,799	2,799

5. Reconciliation of cash and cash equivalents at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts		Current quarter \$A'000	Previous quarter \$A'000
5.1	Bank balances	2,799	2,793
5.2	Call deposits	-	-
5.3	Bank overdrafts	-	-
5.4	Other (provide details)	-	-
5.5	Cash and cash equivalents at end of quarter (should equal item 4.6 above)	2,799	2,793

6. Payments to related parties of the entity and their associates

- 6.1 Aggregate amount of payments to related parties and their associates included in item 1
- 6.2 Aggregate amount of payments to related parties and their associates included in item 2

**Current quarter
\$A'000**

60

-

Note: if any amounts are shown in items 6.1 or 6.2, your quarterly activity report must include a description of, and an explanation for, such payments

Consulting fees and directors' fees \$60,417

Mining exploration entity or oil and gas exploration entity quarterly cash flow report

7. Financing facilities	Total facility amount at quarter end \$A'000	Amount drawn at quarter end \$A'000
<i>Note: the term "facility" includes all forms of financing arrangements available to the entity. Add notes as necessary for an understanding of the sources of finance available to the entity.</i>		
7.1 Loan facilities	-	-
7.2 Credit standby arrangements	-	-
7.3 Other (please specify)	-	-
7.4 Total financing facilities	-	-

7.5 **Unused financing facilities available at quarter end** -

7.6 Include in the box below a description of each facility above, including the lender, interest rate, maturity date and whether it is secured or unsecured. If any additional financing facilities have been entered into or are proposed to be entered into after quarter end, include a note providing details of those facilities as well.

8. Estimated cash available for future operating activities	\$A'000
8.1 Net cash from / (used in) operating activities (Item 1.9)	(162)
8.2 Capitalised exploration & evaluation (Item 2.1(d))	(278)
8.3 Total relevant outgoings (Item 8.1 + Item 8.2)	(440)
8.4 Cash and cash equivalents at quarter end (Item 4.6)	2,799
8.5 Unused finance facilities available at quarter end (Item 7.5)	-
8.6 Total available funding (Item 8.4 + Item 8.5)	2,799
8.7 Estimated quarters of funding available (Item 8.6 divided by Item 8.3)	6.36

8.8 If Item 8.7 is less than 2 quarters, please provide answers to the following questions:

1. Does the entity expect that it will continue to have the current level of net operating cash flows for the time being and, if not, why not?

Answer: N/A

2. Has the entity taken any steps, or does it propose to take any steps, to raise further cash to fund its operations and, if so, what are those steps and how likely does it believe that they will be successful?

Answer: N/A

3. Does the entity expect to be able to continue its operations and to meet its business objectives and, if so, on what basis?

Answer: N/A

Compliance statement

- 1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.
- 2 This statement gives a true and fair view of the matters disclosed.

Date: 29 October 2024

Authorised by: (lodged electronically)
Matthew Foy – Company Secretary

Notes

1. This quarterly cash flow report and the accompanying activity report provide a basis for informing the market about the entity's activities for the past quarter, how they have been financed and the effect this has had on its cash position. An entity that wishes to disclose additional information over and above the minimum required under the Listing Rules is encouraged to do so.
2. If this quarterly cash flow report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, *AASB 6: Exploration for and Evaluation of Mineral Resources* and *AASB 107: Statement of Cash Flows* apply to this report. If this quarterly cash flow report has been prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standards apply to this report.
3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.
4. If this report has been authorised for release to the market by your board of directors, you can insert here: "By the board". If it has been authorised for release to the market by a committee of your board of directors, you can insert here: "By the [name of board committee – eg Audit and Risk Committee]". If it has been authorised for release to the market by a disclosure committee, you can insert here: "By the Disclosure Committee".
5. If this report has been authorised for release to the market by your board of directors and you wish to hold yourself out as complying with recommendation 4.2 of the ASX Corporate Governance Council's *Corporate Governance Principles and Recommendations*, the board should have received a declaration from its CEO and CFO that, in their opinion, the financial records of the entity have been properly maintained, that this report complies with the appropriate accounting standards and gives a true and fair view of the cash flows of the entity, and that their opinion has been formed on the basis of a sound system of risk management and internal control which is operating effectively.