

Lefroy launches major gold focused air core drilling program

ASX:LEX

HIGHLIGHTS

- Lefroy set to commence a major regional air core (AC) drilling program across its broader Lefroy Project located 35km southeast of Kalgoorlie.
- The drilling will test a 40km zone along the Mt Monger and Talcum Faults corridor, a trend which hosts 3 separate >400koz deposits at Mt Martin, Salt Creek¹ and Burns, but which remains vastly underexplored.
- Gold targets are within the prolific Boulder-Lefroy to Mount Monger Fault district, host to multiple gold mining centres including St Ives, Daisy Milano and Mt Belches.
- 15,000m AC program is the culmination of a detailed strategic exploration review, with multiple highly prospective locations identified.

Lefroy Exploration Limited (“Lefroy” or “the Company”) (ASX:LEX) is pleased to provide an update on the Company’s current exploration plans, ahead of a large air core (AC) winter drilling program across its extensive land tenure in the Eastern Goldfields commencing next week.

LEFROY EXPLORATION CEO GRAEME GRIBBIN COMMENTED:

“Following the Company’s corporate restructure, strategic review and cost reductions, we have had our shoulders to the wheel to unlock value from our diverse portfolio of gold exploration targets and prospects in the vast 635km² Lefroy Project.

“Our team has worked methodically and systemically to identify the highest-ranking targets for drill testing, which forms part of the new extensive AC program set to commence in coming days.

“Located in a rich gold district presenting significant regional exploration upside, our systematic and methodical approach now progresses to drill testing our targets with this AC program, which will include up to 350 holes potentially for up to 15,000m.

The program is designed to target 40km of prospective strike along the Mt Monger to Talcum Faults, which both represent considerably underexplored gold corridors, and importantly will include our Location 45 ground that has not been subject to modern exploration at this scale in two decades.”

(1) Integra Mining Annual Report 2010



EXPANSIVE AIRCORE PROGRAM SET TO COMMENCE

The Company's upcoming program is set to commence in the last week of July and represents one of the largest regional AC campaigns ever conducted by Lefroy. Drilling is expected to last up to eight weeks with assay results anticipated to start being received by late August.

The drilling program is designed to target 40km of prospective strike potential along both the Mt Monger and Talcum Fault corridors, extending from Neon and Lucky Strike to the southeast, up into the Carnilya Hill trend and northwest across to the highly prospective freehold Location 45.

The Mt Monger and Talcum Fault corridors possess exceptional gold endowment, with 3 significant >400koz gold deposits anchoring both ends of the prospective trend, with Mt Martin to the northwest, along with Salt Creek¹ and Burns, to the east and southeast. Large sections of the corridor remain vastly underexplored.

Location 45 hosts the Mt Martin Gold Mine which has an Indicated/Inferred resource of 501,175oz Au (8.7Mt @ 1.79 g/t Au). It presents significant potential for additional greenfields gold discoveries.

Location 45, acquired by the Company in May 2023 (refer ASX announcement 23 May 2023) has not received any modern systematic exploration on this scale for over 20 years.

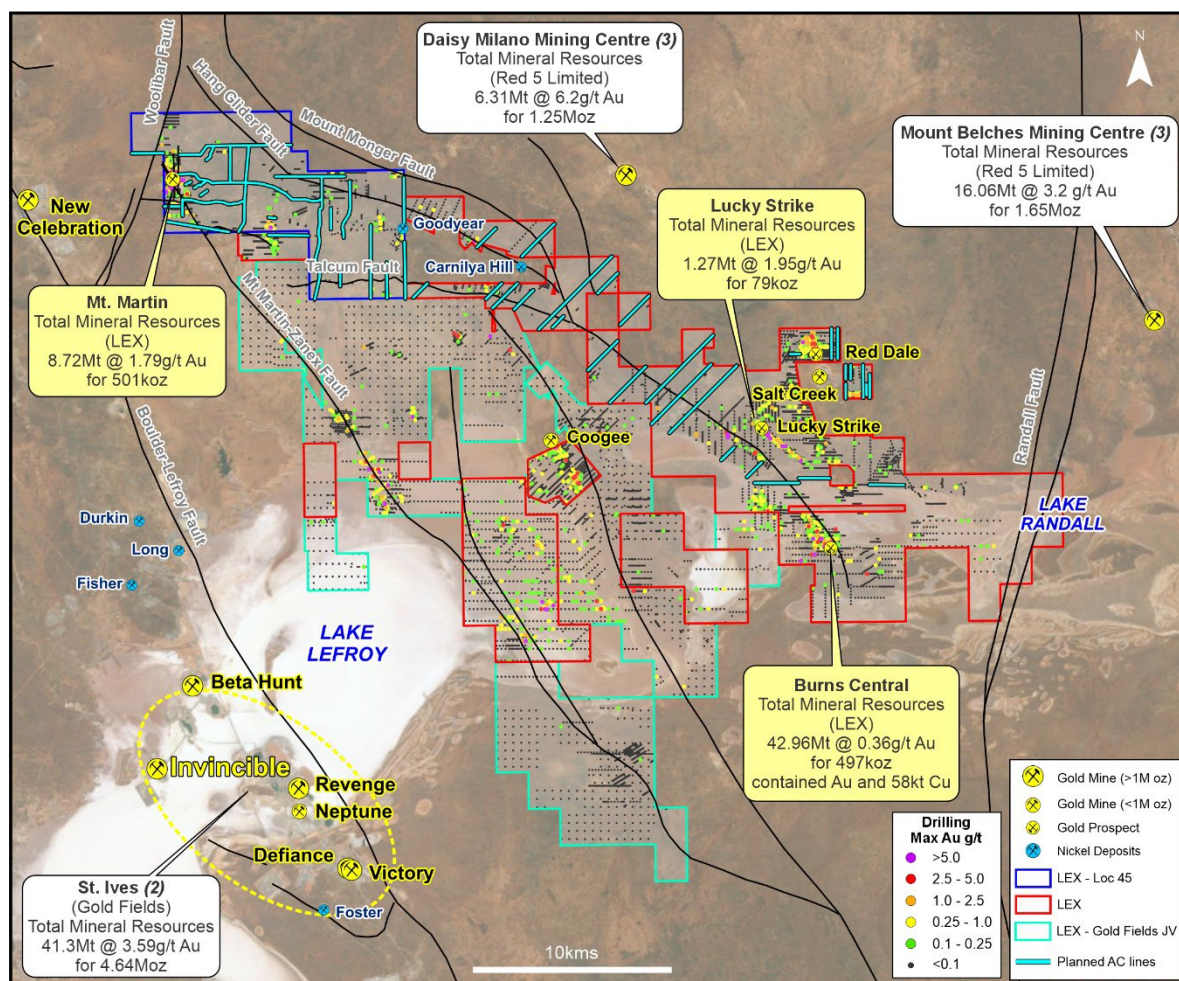


Figure 1: Lefroy Project tenure and regional air core drilling lines. Source references to resource numbers below.

(2) Gold Fields Limited (St Ives): Mineral Resource and Mineral Reserves Supplement to the Integrated Annual Report 2023

(3) Red 5 (Daisy Milano and Mount Belches): Mineral Resource and Ore Reserve Statement (SLR) 27 September 2023.



The Company believes there is potential for numerous new gold discoveries, especially within the vicinity of the Talcum Fault, and within the broader corridor north and south of the Mt Martin pit.

Planned drill lines for this upcoming air core program are delineated in light blue (Figure 1) above, with a more detailed view of the eastern targets and Location 45 in Figures 2 and 3.

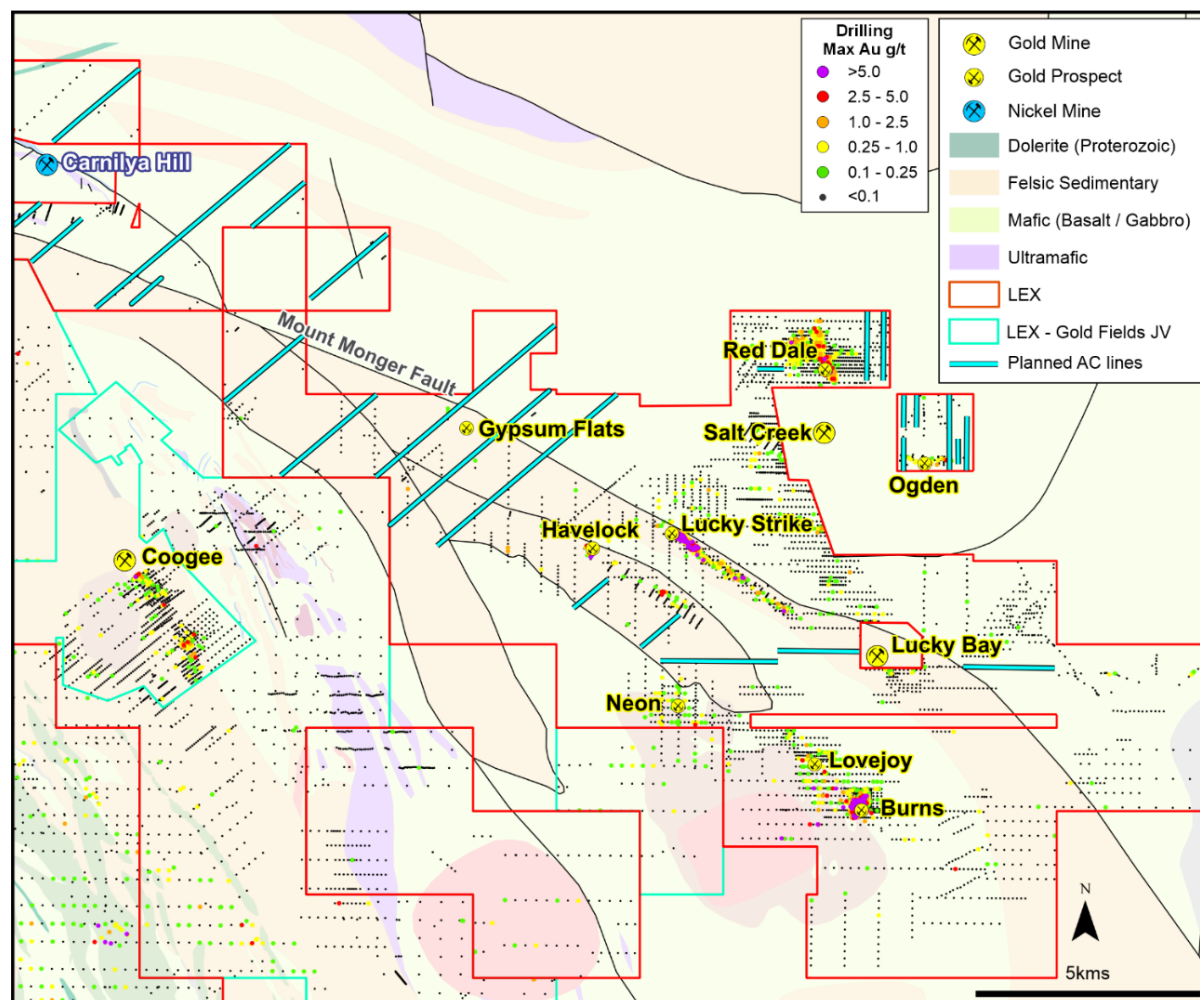


Figure 2: Lefroy Project – eastern drill target lines.

DRILL PROGRAM SUMMARY AND RATIONALE

This program will incorporate between 10,000m and 15,000m of drilling, performed broadly on 400m – 800m spaced lines to generate a first-pass bedrock geological and geochemical dataset. This will be the first physical test in Lefroy’s mineral systems approach to exploring on a district scale. The data collected will be fed back into the Company’s regional mineralisation model and enable further advancement of the most prospective areas along these key structural corridors.

The Company recognises it possesses large tenement holdings that are underexplored for gold, representing a significant opportunity for new discoveries.

Additionally, as noted in large gold camps in the district, specifically St Ives, the potential exists for mineralisation to occur across a wide range of host rocks. Key goals of the program are:



- First pass regional drill coverage of entire Mt Monger and Talcum Fault structural corridors.
- Capturing end-of-hole multi-element data to assist in delineating major gold bearing mineral systems.
- Targeting mineralisation across a spectrum of host rocks including differentiated dolerite (Red Dale and Ogden), banded-iron formation (Lucky Strike/Havelock trend, Lucky Bay), ultramafic/ mafic shear hosted (Mt Martin/Location 45), and hybrid Au-Cu porphyry systems (Neon).
- Using existing gold indicator anomalies (e.g. arsenic) and structural interpretation in unlocking the gold potential of Location 45.

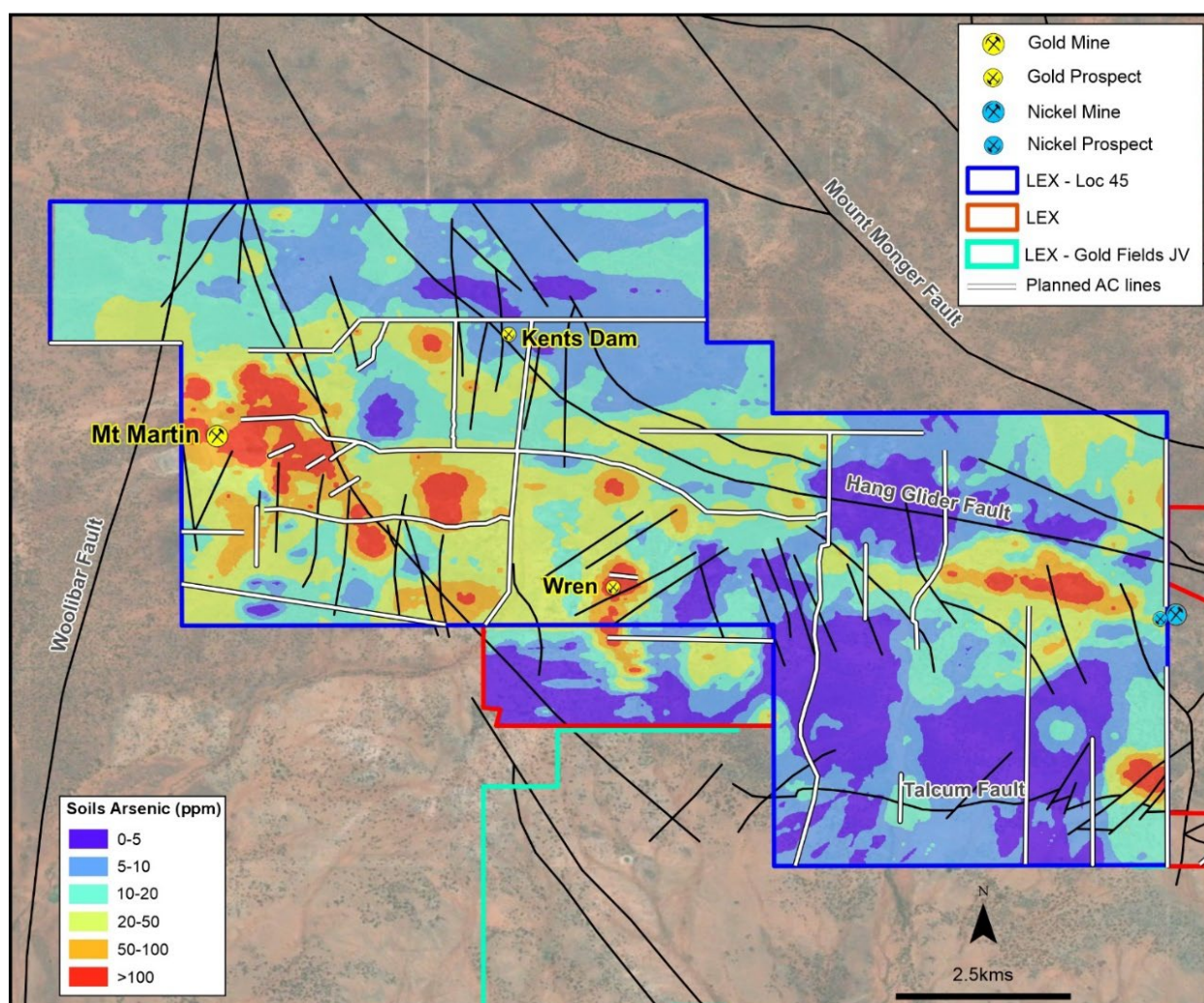


Figure 3: Lefroy Project Location 45 target drill lines.

EXPANDED PORTFOLIO OF EXPLORATION TARGETS

Lefroy Exploration holds one of the most commanding landholdings within the world-class Kalgoorlie and Kambalda gold and nickel mining districts.

It controls a contiguous land package of 635km² with a growing mineral resource inventory currently containing approximately 1.1 million ounces of gold; 58,000 tonnes of contained copper and 14,780 tonnes of contained nickel ([refer to LEX 2023 Annual Report](#)).



The Company is committed to expanding its existing portfolio of prospective gold projects through a systematic, science-based approach to exploration targeting, previously outlining its three-pronged principles towards achieving these goals (refer ASX announcement 27 March 2024):

- Resource base expansion
- Setting definable success criteria; and
- Maintaining a balanced portfolio

Following recently completed drilling programs proximal to Lefroy's existing gold resources at Mt Martin (refer ASX announcement 18 January 2024) and Lucky Strike (refer ASX announcement 23 May 2024), the Company is seeking to unlock significant regional gold exploration upside across its broader Lefroy Project.

KEY TARGETS ALONG MOUNT MONGER AND TALCUM FAULTS

The Company's commanding Lefroy Project land tenure is located within Western Australia's world-class, preeminent gold mining district (Figure 4).

Wedged between the prolific St Ives (Gold Fields) gold camp to the south, and the mining centres of Daisy Milano and Mount Belches (Red 5) to the north and east, the Company's extensive land package straddles the Mt Monger Fault in a significantly underexplored corridor surrounded by exceptional gold endowment.

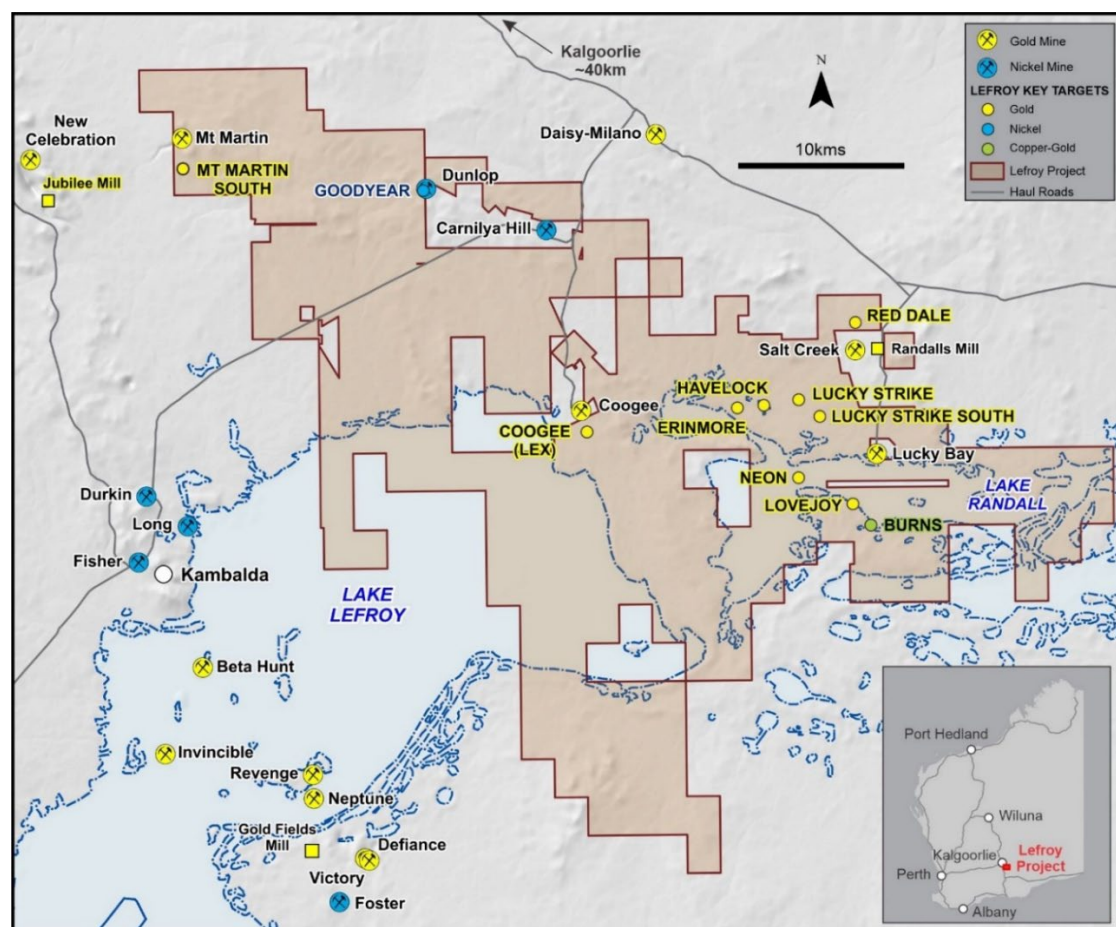


Figure 4: Lefroy tenure and key targets in the Kalgoorlie – Kambalda district.



As is often the case, these large gold camps are centered proximal to major, regional structural lineaments (in this instance, the Boulder Lefroy, Mount Monger and Randall Faults), which are considered major pathways for gold mineralisation in the district.

Driven by the Company's ambitions to achieve growth through new discoveries, it has identified two key structural corridors, namely the Mt Monger and Talcum Faults, considered highly prospective for potential to host additional gold mineralisation.

The expanded target portfolio incorporating newly identified targets is outlined below in Figure 5 below.

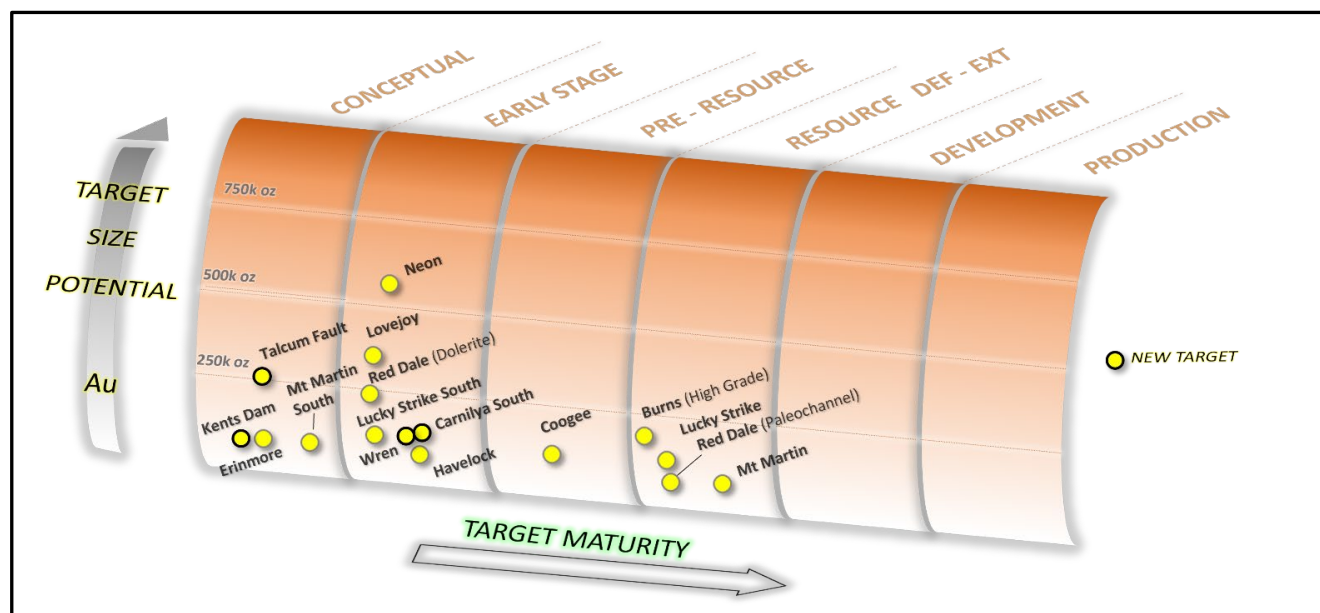


Figure 5: Lefroy Exploration project pipeline depicting maturity versus potential relative target size.

-Ends-

This announcement has been authorised for release by the Board of Directors.

Graeme Gribbin
CEO

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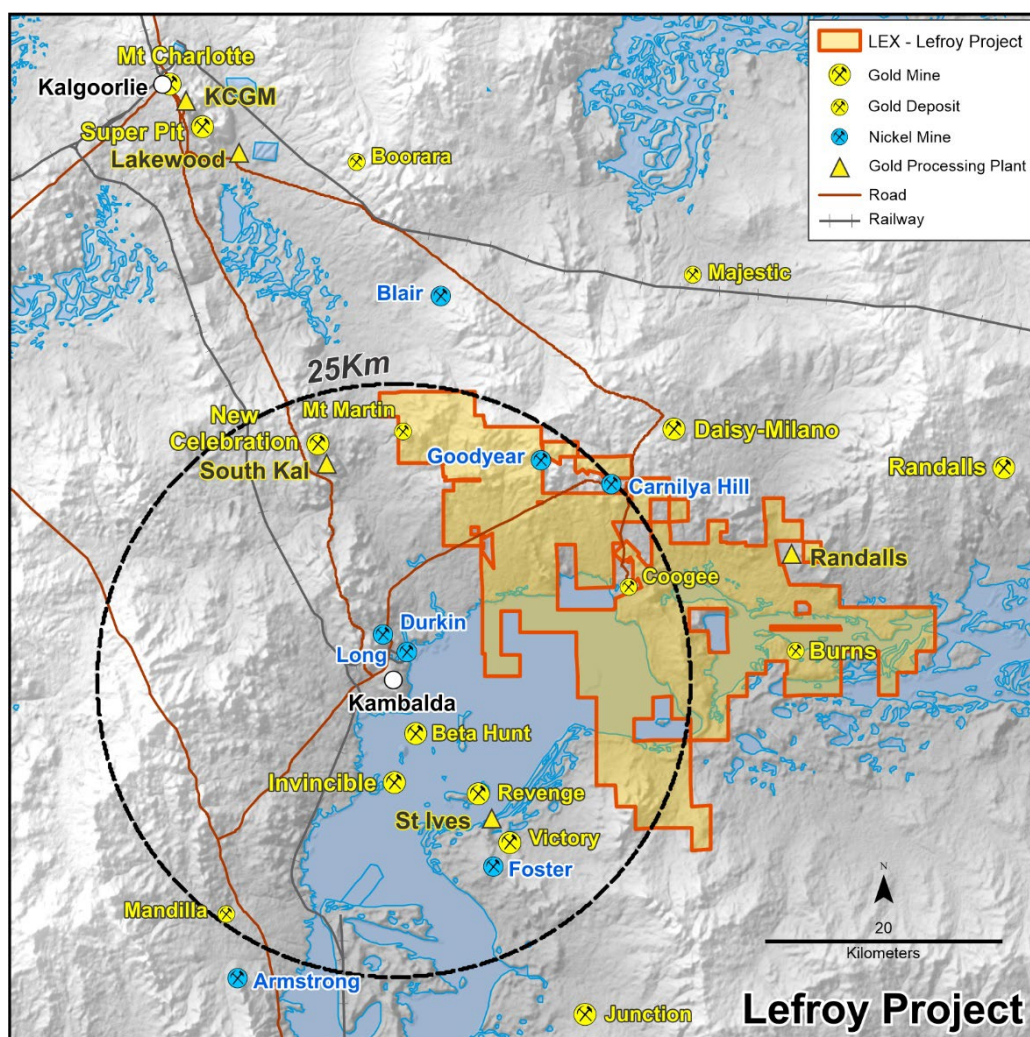


ABOUT LEFROY EXPLORATION LIMITED

Lefroy Exploration Limited (ASX:LEX) is an active West Australian exploration company focused on developing its growing gold and critical minerals projects. The Company's portfolio of high-quality projects includes the Lefroy Project, located in the heart of the world-class Kalgoorlie and Kambalda gold and nickel mining districts (Figure 6), the Lake Johnston Project 120km west of Norseman, and the large 2872km² Glenayle Project 210km north of Wiluna.

The Lefroy Project is a contiguous land package of 635km² with a growing mineral resource inventory of approximately 1.1 million ounces of gold, 58,000 tonnes of contained copper and 14,780 tonnes of contained nickel, as at August 2023 (refer to LEX 2023 Annual Report).

In May 2023, Lefroy signed a Mineral Rights Agreement with title holder Franco-Nevada Pty Ltd, to acquire the mineral rights to Hampton East Location 45 (Location 45) (Refer ASX release 23 May 2023). Location 45 is a freehold property, located within 25km of Kambalda and 35km southeast of Kalgoorlie. The property hosts the historic Mt Martin gold mine, which has historically produced approximately 200,000 ounces of gold grading at 2.8g/t and which includes an existing resource of 501,175 oz gold (8.7Mt @ 1.79g/t Au) (refer to ASX release 5 September 2023).





SUPPORTING ASX ANNOUNCEMENTS

The following announcements were lodged with the ASX and further details (including supporting JORC Tables) for each of the sections noted in this announcement can be found in the following releases. 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. In the case of all Mineral Resource Estimate's (MRE), the Company confirms that all material assumptions and technical parameters underpinning the estimates continue to apply and have not materially changed.

- 0.5M Ounces of Gold in Burns Central Maiden Resource: 4 May 2023
- Acquisition of Mineral Rights Transforms Lefroy: 23 May 2023
- Growth Potential for Mt Martin Gold Mine Confirmed: 5 September 2023
- Strategy to focus on Gold Development and Exploration: 23 February 2024
- Lefroy to recommence exploration of high-grade gold targets: 27 March 2024
- Positive Exploration Results at Havelock and Lucky Strike: 23 May 2024
- Lefroy Boosts Cash Balance through \$755K R&D Refund: 17 July 2024

COMPETENT PERSON STATEMENT

The information in this announcement that relates to exploration targets and exploration results is based on information compiled by Graeme Gribbin, a competent person who is a member of the Australian Institute of Geoscientists (AIG). Mr Gribbin is employed by Lefroy Exploration Limited. Mr Gribbin has sufficient experience that is relevant to the style of mineralisation and type of deposits under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 edition of the JORC Code. Mr Gribbin consents to the inclusion in this announcement of the matters based on his work in the form and context in which it appears.

Table 1: Total Indicated and Inferred Lefroy Gold Project Mineral Resource Estimate

Deposit	Indicated					Inferred					Total Resource			
	Mt	Au (g/t)	Cu (%)	Oz	Cu (t)	Mt	Au (g/t)	Cu (%)	Oz	Cu (t)	Mt	Au (g/t)	Oz	Cu (t)
Burns Central ¹	32.31	0.38	0.16	394,308	50,253	10.65	0.30	0.08	103,165	8,047	42.96	0.36	497,472	58,300
Red Dale ²	0.64	1.21	-	24,660	-	0.03	0.60	-	570	-	0.67	1.18	25,230	-
Lucky Strike ³	0.70	1.93	-	43,400	-	0.57	1.97	-	36,200	-	1.27	1.95	79,600	-
Mt Martin ⁴	5.31	1.82	-	311,048	-	3.41	1.73	-	190,127	-	8.72	1.79	501,175	-
TOTAL	39.0	0.62	0.16	773,416	50,253	14.66	0.70	0.08	330,062	8,047	53.62	0.64	1,103,477	58,300

Total Indicated and Inferred Lefroy Gold Project Mineral Resource Estimate as at 30 June 2023.

¹ The Burns Central MRE was announced to the ASX on 4 May 2023

² The Red Dale MRE was announced to the ASX on 3 June 2020

³ The Lucky Strike MRE was announced to the ASX on 20 May 2020

⁴ The Mt Martin MRE was announced to the ASX on 23 May 2023



Table 2: Goodyear Mineral Resource Estimate

Zone	Tonnes	Grade Ni %	Contained Ni Tonnes
1	148,000	3.06	4520
3	224,000	4.13	9230
4	20,000	5.13	1030
TOTAL INFERRED	392,000	3.78	14,780

The Goodyear MRE was announced to the ASX on 23 August 2023