



September 2021 Quarterly Activities Report

LEFROY EXPLORATION LIMITED

Western Australian Focused
Gold Explorer

ASX Code: LEX

Shares on Issue:
120M

Current Share Price:
42c

Market Capitalisation:
\$51m

Board of Directors
Chairman
Gordon Galt

Managing Director
Wade Johnson

Non-Executive Directors
Michael Davies
Geoffrey Pigott

Flagship Exploration Project
Lefroy Gold Project

- Eastern Lefroy
- Western Lefroy JV

Growth Exploration Projects
Lake Johnston Nickel Project
Glenayle Nickel Project

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HIGHLIGHTS

Exploration during the September 2021 quarter was dual focussed with RC drilling evaluating the Burns Cu-Au Prospect and completion of a maiden AC drill program at Coogee South, both within Eastern Lefroy

Eastern Lefroy

Burns

- *Final assay results were received and compiled for the 9 diamond holes completed on the zero north baseline and 40 north sections in the June Quarter. Better results include:*
 - **12.7m @ 2.53g/t Au & 0.08% Cu from 141.3m in LEFD004**
 - **15m @ 1.61 g/t Au & 0.33% Cu from 218m in OBURCD025**
 - **5m @ 2.90 g/t Au & 0.66% Cu from 228m in OBURCD025**
 - **15.4m @ 1.02g/t Au & 0.19% Cu from 154.6m in LEFRD261**
 - **27.4m @ 1.93g/t Au & 0.22% Cu from 219.8m in LEFRD262**
 - **25.4m @ 2.13g/t Au & 0.13% Cu from 152.4m in LEFRD283**
- *A 9-hole RC drill program totaling 2328m evaluating 4 four targets was completed during the quarter. Results from three holes to date support and further establish a Cu-Au mineralisation system in the western basalt with hole **LEFR289 intersecting 244m @ 0.14% Cu & 0.10g/t Au from 20m***
- *A detailed aeromagnetic survey over the wider Burns Intrusive complex identified six new magnetic anomalies with signatures similar to Burns over a 3000m corridor and coincident with a +200ppm drill hole copper anomaly*

Coogee South

- *A maiden 136-hole AC drilling program evaluated a 1500m corridor commencing 250m south of the high grade Coogee open pit.*

Western Lefroy Farm In (WLFIn)

- *Gold Fields satisfied the Stage 1 Farm-In requirement for the WLFIn & JV and elected to increase its interest in the WLFIn to 70% by sole funding a further \$15 million of exploration over the next three years*
- *Late in the quarter AC drilling was commenced at the Paddys Secret prospect.*

Corporate

- *The Company had \$1.85m in cash and equivalents and zero debt*

INTRODUCTION

Overview

The Board of Lefroy Exploration Limited (ASX: LEX) (“**Lefroy**” or the “**Company**”) is pleased to provide its report on exploration activities during the September 2021 Quarter. Lefroy is an exploration company taking a systematic generative exploration approach at its flagship Lefroy Gold Project (“**LGP**”) to discover high-value gold and gold-copper deposits.

Lefroy Gold Project (LGP)

The Lefroy Gold Project is wholly owned by the Company and located approximately 50km to the southeast of Kalgoorlie in the Eastern Goldfields Province of Western Australia (Figure 1). The commanding, semi-contiguous, granted land package covers 637.6km² immediately east of and adjoining the world class +10Moz St Ives Gold camp, operated by Gold Fields Limited (NYSE: GFI) (“**Gold Fields**”), and is immediately south of the high-grade Mt Monger gold centre operated by Silver Lake Resources Limited (ASX:SLR) (“**Silver Lake**”). Four gold processing operations are strategically located within 50km of the project and provide commercial options for processing any gold resources discovered.

LGP is referenced in two packages, i.e.

- **Eastern Lefroy** covering 265.6km² of wholly owned tenements (Figure 1) including Lucky Strike, Red Dale, Hang Glider Hill, Havelock, Burns and other sub-projects along or near the regional scale Mt Monger fault, now also including Coogee South and;
- **Western Lefroy Joint Venture (“WLJV”)** tenements (Figure 1) covering 372km² adjoining the Gold Fields tenements that make up the St Ives mining operation. Gold Fields can earn up to a 70% interest in the LEX tenements by spending up to a total of \$25million on exploration activities within 6 years of the commencement date, 7 June 2018.

Eastern Lefroy Gold Project

The key focus of exploration by the Company in Eastern Lefroy during the quarter was again at the Burns Copper-Gold Prospect (“**Burns Cu-Au Prospect**”) located within the Lake Randall Exploration Hub that is immediately southeast of the Lucky Strike-Havelock-Erinmore BIF trends and contained within the Non-JV Eastern Lefroy sub project (Figure 1).

This involved the completion of a 9-hole RC drill program, compilation of results from a 9-hole diamond drill program completed in the June Quarter, and a completion of a detailed aeromagnetic survey over the larger Burns area. Subsequent to the quarters end, a 12 RC hole proof of concept drilling program commenced to evaluate targets generated from the aeromagnetic survey.

Western Lefroy Farm In (WLFIn) & Joint Venture (Gold Fields earn in)

During the June Quarter, Hogans Resources Pty Ltd (“Hogans”), a wholly owned subsidiary of the Company and St Ives Gold Mining Company Pty Ltd, a wholly owned subsidiary of Gold Fields Limited (NYSE: GFI) (“Gold Fields”) executed a Side Deed to satisfy the expenditure shortfall in the Stage 1 earn commitment of \$10million required by 7 June 2021 (refer LEX ASX release 21 & 25 June 2021). The shortfall was satisfied on 25 June 2021 with a cash payment to Lefroy of \$1.38million and the excision of the Coogee prospect from the WLFIn land package.

On 30 July 2021 St Ives provided Hogans with the Stage 1 Satisfaction Notice to confirm.

1. St Ives had satisfied the Stage 1 Farm In requirement by.
 - a. Payment of one half of the shortfall amount (plus GST), being \$1,518,797.50 paid by funds transfer to Hogans on 24 June 2021, and
 - b. Excising the Excluded Area from the Principal Agreement from the effective date of the Side Deed, being 18 June 2021.
2. St Ives has provided Hogans with an itemised breakdown of Direct Expenditure incurred by St Ives during the Stage 1 Farm in Period
3. St Ives elects to earn the Stage 2 Participating Interest.

The Stage 2 earn-in allows St Ives to sole fund a further \$15 million of expenditure over 3 years to earn an additional 19% interest to bring its total interest to 70%.

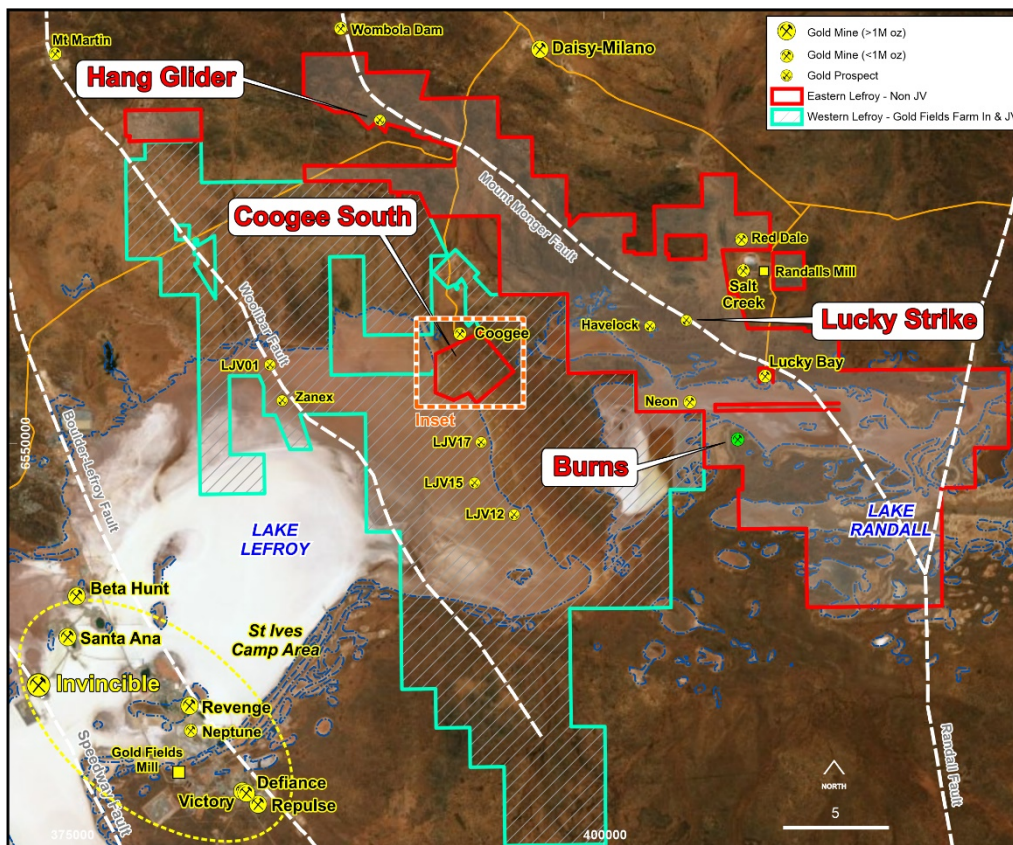


Figure 1 Lefroy Gold Project showing Eastern and Western Lefroy and the location of the Burns Cu-Au Prospect and Coogee South prospects. Refer to Figure 2 for the Burns location plan and Figure 6 for Coogee South

EXPLORATION ACTIVITIES

Eastern Lefroy Gold Project (LEX 100%)

The Eastern Lefroy project is a semi contiguous package of wholly owned tenements that cover approximately 37km of strike along and straddling the regional scale Mt Monger Fault (Figure 1). The Mt Monger Fault is considered to be structurally analogous to other major regional faults in the Kalgoorlie terrain (e.g., Boulder-Lefroy, Zuleika, Randall) that are likely a primary control to gold mineralisation in the terrain. The Company considers the Mt Monger Fault to be similarly prospective to host large gold deposits adjacent to the interpreted position, however the area lacks the same degree of exploration.

The Company has identified three priority centres, or hubs along the Mt Monger Fault trend where greenfields exploration for gold is being focused (Figure 1). These hubs are ranked according to the level of prior exploration activity, gold anomalies identified as noted below, and the structural setting.

P1- Lake Randall Exploration Hub: -Generative Exploration (Burns)

P2- Lucky Strike Exploration Hub: -Advanced Exploration (Havelock, Lucky Strike)

P3- Hang Glider Hill Exploration Hub: -Early-Stage Exploration (Hang Glider, Coogee South)

During the September 2021 Quarter the Company remained fully focused on the Lake Randall Exploration Hub subsequent to the strong gold copper discovery intersection recorded in hole LEFR260 at the Burns Cu-Au Prospect in February 2021. Subsequent to the excision of Coogee South from the WLF1 as noted above the Company rapidly executed a maiden aircore (AC) drilling program at the prospect in September.

Burns Cu-Au Prospect

The Burns Cu-Au Prospect lies within the Lake Randall Exploration (LRE) Hub that is immediately southeast of the linear trending Lucky Strike-Havelock-Erinmore banded iron formation (BIF) trends (Figure 2). The LRE hub contains tenement E15/1715 that covers an area of approximately 20km² containing the Burns prospect that was discovered by Octagonal Resources Limited in 2011, from earlier generative exploration work initiated by Newmont Australia in 2008.

The Burns prospect is situated on the eastern margin of a large interpreted felsic intrusion, termed the Burns Intrusion. The intrusion does not outcrop and is represented by a distinctive annular aeromagnetic (refer Figure 4) and gravity geophysical signature (refer LEX ASX release 16 September 2020). A maiden 22-hole RC drill program completed in Jan-Feb 2021 intersected a spectacular gold and copper interval in hole LEFR260 containing 38m @ 7.63g/t Au & 0.56% Cu from 134m.

The results from that RC program provided the geological and geochemical data that highlighted the unique characteristics of Burns and the stepping block to continued drilling activity.

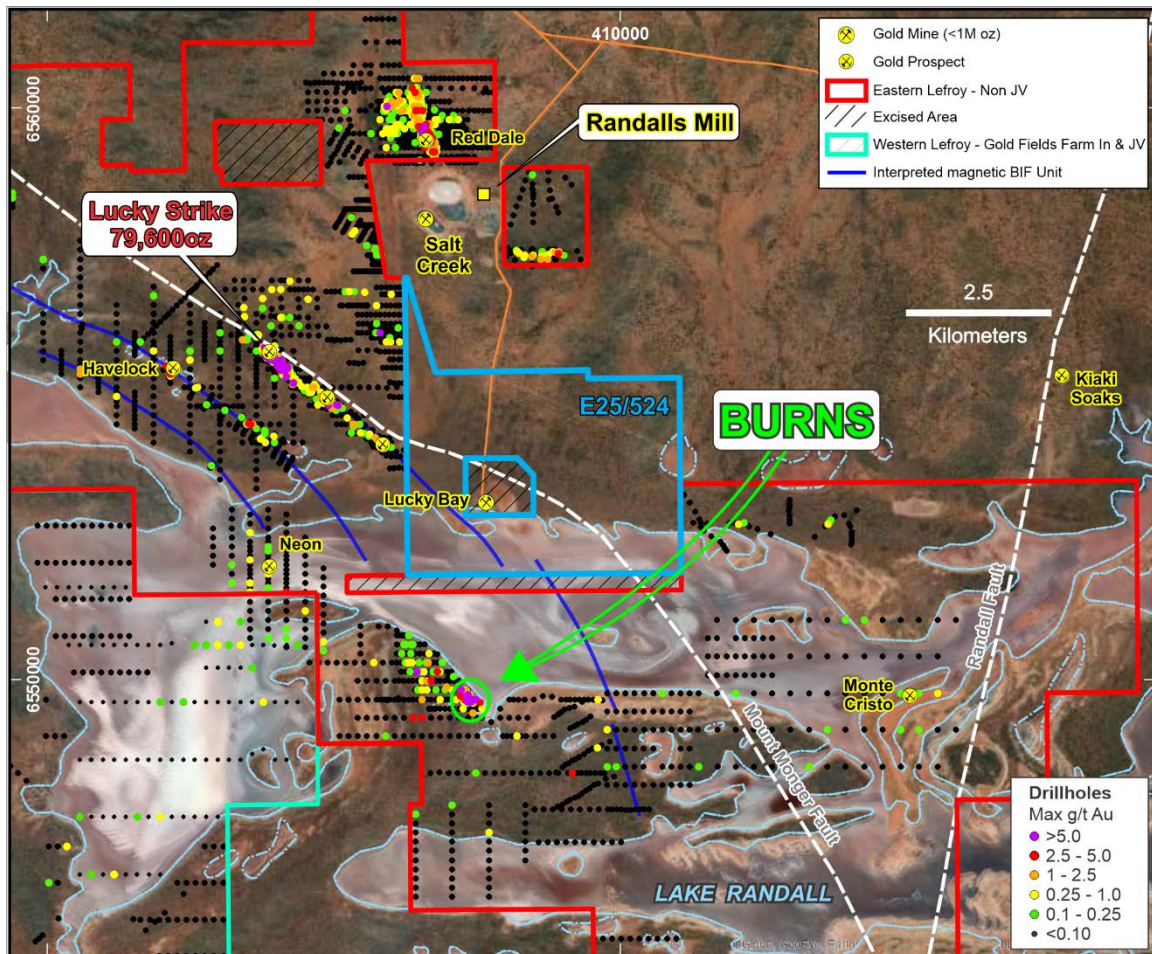


Figure 2 Inset plan highlighting, the location of the Burns Cu-Au Prospect and proximity to Lucky Strike deposit on a satellite image. The extent of the newly (March 2021 Qtr) acquired tenement E25/524 is also shown. The banded iron formation (BIF) trends are highlighted as dark blue lines. Refer to Figure 3 for Burns drill hole plan.

The broad high-grade gold mineralisation is hosted within a newly discovered hematite-pyrite-chalcopyrite-magnetite altered diorite porphyry (refer LEX ASX release 23 February 2021) that intrudes high Mg basalt. This porphyry, termed the Eastern Porphyry, is open to the north and south. Diamond drilling on the zero north (baseline) and 40N sections has defined the eastern extent of the Eastern Porphyry marked by foliated basalt that may indicate a major structure beneath Lake Randall. The alteration and mineralisation are open at depth.

The copper and gold mineralisation hosted by both the magnetite altered diorite porphyry and basalt is considered by the Company to be a new style of mineralisation in the area, a land position dominated by Lefroy (Figure 1 & 2). The existence of additional mineralisation further east under Lake Randall is not discounted by the subsequent RC and diamond drilling campaigns and will be the subject of more exploration and drilling scheduled for November 2021.

During the September Quarter results were received and compiled for the 9-hole baseline diamond drilling program completed on the zero north, 40 north and 40 south sections evaluating the eastern porphyry. A 9-hole RC drilling program was completed in July with results announced for four holes.

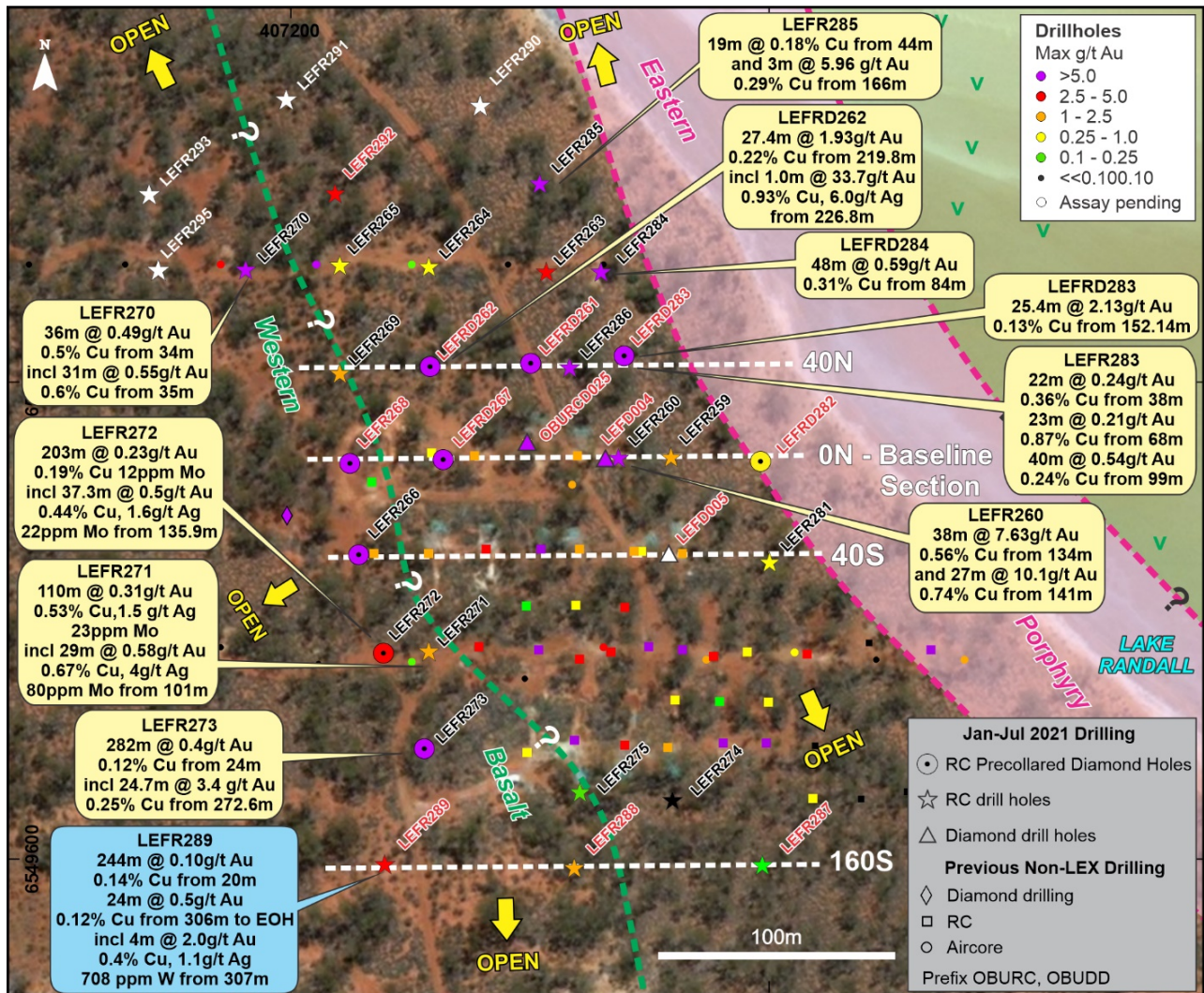


Figure 3 Drill hole plan at the Burns prospect highlighting the Jan-Jul 2021 drill program (LEFR259 to LEFR295) relative to LEFR260 on the zero north baseline section and the interpreted extent of the Eastern Porphyry and Western Basalt

Diamond Drill Program

A nine-hole diamond drill program commenced on 20 April 2021 to evaluate the Eastern Porphyry over a 200m strike length on three 40m spaced drill sections (Figure 3). The first hole of the program (LEFD004) was completed on 3 May 2020. That hole was designed to twin and extend past the high-grade interval found in LEFR260 to find any further mineralisation and determine the width of the Eastern Porphyry (Figure 3) on the zero north drill section (0N). Geological details of that drill hole were reported to the ASX on 3 May 2020.

That hole was drilled primarily to understand the geological and structural controls of the system but also provide the guidance for the subsequent diamond holes on the 0N, 40N and 40S drill sections (Figure 3). The host Eastern Porphyry was intersected in LEFD004 from 117m to 304.5m, a down hole interval of 187.5m. The porphyry is interpreted to have a near vertical dip and an estimated true width of approximately 110m bounded by basalt to the west and east. That hole confirmed three distinct variations of the host diorite porphyry formally known as BP1, BP2 and BP3 which are interpreted as multi-phase intrusive events.

Multiple zones of visually identified unusual alteration and mineralisation were intersected in the porphyry in LEFD004 (refer LEX ASX release 3 May 2021).

This indicated and continues to support the Company's initial interpretation of the Burns copper gold model being a multi-phase intrusive and alteration event (diorite porphyries) with a final magnetite sulphide event mineralising both the porphyry and the basalt host rocks. A research study was initiated during the quarter with the Centre of Exploration Targeting (CET) at the University of Western Australia. The study is well underway and will date the age of the intrusions and the mineralisation to provide further support to genesis of the Burns mineral system that will provide guidance to exploration targeting in the area.

Details of four further diamond holes on the zero-north section, OBURCD025, LEFRD267, LEFRD268 and LEFRD282 were reported to the ASX on 13 May, 25 May and 18 June 2021 respectively. Those holes confirmed the extension to, and the geometry of, the altered Eastern Porphyry at depth.

The five diamond holes on the zero north section established at least 180m of vertical depth continuity of visually altered and mineralised porphyry below the 37m zone of Au/Cu mineralisation in LEFR 260 (38m @ 7.63g/t Au & 0.56% Cu from 134m). The drill data has also defined the boundaries to the Eastern Porphyry body which has approximate 120m true width. The eastern boundary is considered to be a major structural zone, located beneath Lake Randall, that has an interpreted northwest trend. The geology also revealed a unique mineral assemblage, in particular the gypsum-magnesite-sulphide veins and magnetite sulphide (chalcopyrite) veins.

The 40N section (Figure 3) was drilled with five RC holes by the company earlier in the year.

Three holes (LEFRD261, LEFRD262 and LEFRD283) were completed and reported in the June 2021 quarter. Hole LEFRD261 was completed as the first step out diamond hole and reported to the ASX on 18 June 2021. That hole intersected a broad 110m downhole interval of haematite-magnetite-pyrite altered Eastern Porphyry, followed by foliated altered basalt to EOH at 393.8m. The entire interval of porphyry is altered and or mineralised, demonstrating the northern continuity of mineralisation within the altered Eastern Porphyry 40m to the north of the zero-north section.

Assay results from the zero north and 40 north sections were received and reported to the ASX during the quarter (refer LEX ASX releases 21 September & 2 August 2021). Results for the last and single hole on the 40 south section were received late in the September quarter without intersecting any significant gold or copper mineralisation.

Zero north section-Results

Assessment of the gold, copper and silver results from the five holes highlight multiple zones of gold and or copper mineralisation in the intervals noted from inspection of the core and highlighted in text above. Initial review of the data highlight two steeply dipping mineralised zones that are approximately 20m in width with a vertical continuity of 150m. Significant gold and copper results from the four holes are as follows:

- **6.60m @ 1.14g/t Au & 1.18% Cu from 102m in LEFD004**
- **12.7m @ 2.53g/t Au & 0.08% Cu from 141.3m in LEFD004**
- **6.20m @ 1.28g/t Au & 0.29% Cu from 160m in LEFD004**
- **10m @ 0.25 g/t Au & 0.95% Cu from 77m in OBURCD025**
- **15m @ 1.61 g/t Au & 0.33% Cu from 218m in OBURCD025**
- **5m @ 2.90 g/t Au & 0.66% Cu from 228m in OBURCD025**
- **13m @ 0.90 g/t Au & 0.28% Cu from 263m in LEFRD267**
- **12.3m @ 0.94g/t Au from 406m in LEFR268**
- **10m @ 1.19 g/t Au from 265m in OBURCD025**

The western zone is a gold copper (and silver) system and includes the high-grade mineralisation in LEFR260. The other (eastern) is gold only, with a much lower copper and silver content. This eastern zone appears to relate to the more pyrite altered intervals of the porphyry and the Company considers this a new style of mineralisation at Burns and provides another style of target. The relationship between the two zones is unclear but may represent separate but related mineralisation events, one being gold-copper-silver, the other gold only.

The down dip continuity of both zones is limited by hole LEFR268. However, a new interval of gold only mineralisation (12.3m @ 0.94g/t Au from 406m) was intersected at a deeper interval that represents a new and/or developing zone.

The results from the twin hole LEFD004 did not replicate the strong mineralisation in LEFR260. The Company considers this lack of reproducibility to the bias (difference) in the sample size selected between the RC drilling and the half core HQ diamond core, and the internal variability of the mineral system noting that in particular the chalcopyrite is blebby/fracture filled as opposed to an evenly disseminated style. Further details are provided in the ASX release dated 2 August 2021 by the Company.

40 north section-Results

Assay results were received and reported during the quarter (LEX ASX release 21 September 2021) for the three (LEFRD283, LEFRD261, LEFRD262) diamond holes completed on the 40N section. All samples for each of the holes were submitted for gold and whole rock (WR) geochemistry (multielement).

The WR geochemistry has been combined with data from the 0N or baseline section and is currently being interrogated. The WR data will provide important geochemical data to characterise the three types of porphyries visually identified, understand the mineral relationships, and provide vectors for exploration of further Au-Cu mineralisation external to the currently established Burns system.

Significant gold, copper, and silver results from the three 40N diamond holes are as follows:

- **15.4m @ 1.02g/t Au & 0.19%Cu & 1.05g/t Ag from 154.6m in LEFRD261
Including 0.4m @ 33g/t Au & 1.83% Cu & 9g/t Ag**
- **4.55m @ 2.12g/t Au & 0.10%Cu & 0.89g/t Ag from 209m in LEFRD261**
- **6.8m @ 1.18g/t Au & 1.00% Cu & 7.57g/t Ag from 45m in LEFRD262
Including 0.63m @ 2.13g/t Au & 1.45% Cu & 52.5g/t Ag from 51.2m**
- **27.4m @ 1.93g/t Au & 0.22% Cu & 0.92g/t Ag from 219.8m in LEFRD262
Including 1m @ 33.7g/t Au & 0.93% Cu & 6.0g/t Ag from 226.8m**
- **4.4m @ 2.16g/t Au & 0.25g/t Ag from 154.6m in LEFRD261**
- **25.4m @ 2.13 g/t Au & 0.13% Cu & 0.53g/t Ag from 152.4m in LEFRD283
Including 1m @14.8g/t Au & 0.08%Cu & 2.50g/t Ag from159m**

The results delivered multiple broad gold copper intersections, mainly hosted by porphyry, that has established continuity 40m along strike of the discovery or baseline (0N) section. The mineralisation dips steeply to the west and is open at depth and along strike. Narrow higher-grade Au-Cu-Ag intervals are hosted by magnetite breccia veins within porphyry.

However, hole LEFRD262 intersected a magnetite breccia veined zone from 45m that included a 0.63m interval containing 52.5g/t Ag in basalt. The new results support a common developing theme that the Au-Cu-Ag mineralisation in either the basalt or porphyry host is related to the magnetite veining. The surface magnetic anomalies provide a first order vector to search for additional Burns-style mineralisation external to the current focused drill area.

Hole LEFRD261 was completed as the first step out diamond hole on the 40N section and was reported to the ASX on 18 June 2021. The hole intersected a broad 110m downhole interval of hematite-magnetite-pyrite altered Eastern Porphyry, followed by foliated altered basalt to EOH at 393.8m.

LEFRD261 was the only hole that penetrated well into the lower or footwall basalt, where a 35.45m downhole interval of strongly foliated basalt containing massive pink calcite veins was intersected (refer pages 5 & 7 LEX ASX release 18 June 2021). The results from this interval intersected 24m @ 0.22g/t Au from 334m within a carbonate veined sheared basalt that demonstrates the potential of the footwall basalt located beneath Lake Randall to host gold mineralisation.

Hole LEFRD283 was drilled to evaluate the porphyry approximately 30m up dip from LEFRD261. The hole confirmed the eastern porphyry but was abandoned before reaching final depth due to ground conditions (Figure 3). The final hole on this section, LEFRD262, intersected the eastern porphyry down dip of LEFRD261, with a 27.4m Au-Cu-Ag intercept within altered and mineralised (sulphides) porphyry. These three holes confirmed the geometry and dimensions of the Eastern Porphyry, including the same alteration characteristics 40m to the north of the zero-north section.

The results from the 40N diamond drill holes, combined with those from the zero north section and the visuals from July's nine hole RC program (refer below) continue to highlight and support the growing scale and multi-stage style of mineralisation at Burns. The 40N section assay results highlight a Au-Cu-Ag mineralised porphyry and basalt system that is at least 250m in width with outer limits yet to be defined.

The new gold intersection in the lower basalt expands the footprint of the system out under lake Randall, which provides another area for drill targeting. The general association of the Au-Cu-Ag mineralisation with magnetite veins provides a strong first order exploration focus on magnetic anomalies and is discussed further in this report.

RC Drill Program

A nine-hole RC drill program was commenced and completed in July 2021 (refer LEX ASX release 20 July 2021) to evaluate both strike extensions to the Eastern Porphyry but also strike and down dip extensions to the Cu-Au mineralisation in the western basalt. A total of 2328m of drilling was completed testing 4 targets, including a single hole testing the Smithers aeromagnetic anomaly.

The drilling targeted both strike extensions to the Eastern Porphyry but also strike and down dip extensions to the Cu-Au mineralisation in the western basalt.

Four holes (LEFR290, 291, 292, 293) evaluated the northern extension of the Burns system (Figure 3). Hole LEFR290, a 40m step out to the north intersected a 101m downhole interval of altered porphyry including a 10m interval containing intense magnetite-pyrite alteration. The porphyry is open to the north. Hole LEFR 292, an 80m step out from LEFR285 intersected a thick 30m down hole interval of massive magnetite containing up to 20% pyrite alteration in basalt in hole LEFR292.

A fence of three 80m spaced holes (LEFR287, 288, 289) were drilled on the 160S section line to evaluate the southern strike extension of the Au-Cu mineralisation in the LEFR273 (Figure 3) and the broad downhole intervals of dominantly copper mineralisation in the western basalt intersected in holes LEFR271, and LEFR272 located 80m to the north.

A single RC hole was also drilled at Smithers as another attempt to evaluate this aeromagnetic anomaly approximately 250m to the north of Burns. The hole (LEFR294) was successful in penetrating the 90m downhole interval of palaeochannel cover to intersect diorite porphyry, similar to that at Burns and containing two narrow (3-5m) intervals of pyritic magnetite veining. This hole demonstrates the scale of the Burns system extends to Smithers, a distance of at least 500m, and was further tested in the October RC drilling campaign.

Results for four of the 9 RC holes were reported during the quarter (LEX ASX release 24 September 2021) with assay results from the final 5 holes to be validated and compiled.

The westernmost hole (LEFR289) on the 160S drill section intersected an impressive 244m downhole interval of copper mineralisation from 20m, hosted by high Mg basalt (Table 2). This was followed by a further 24m interval of copper mineralised basalt to the end of hole (EOH) at 330m, a combined downhole total of 268m of mineralisation. The mineralisation is open along strike to the south and at depth.

Significant results from the 4 RC holes include: -

- **244m @ 0.14% Cu & 0.10g/t Au from 20m in LEFR289**
Incl. 7m @ 0.57% Cu & 0.03g/t Au from 24m
Also incl. 7m @0.58% Cu & 0.14g/t Au from 216m
- **24m @ 0.12% Cu & 0.46g/t Au from 306m to EOH in LEFR289**
- **68m @ 0.15% Cu & 0.05g/t Au from 24m in LEFR288**
- **27m @ 0.16% Cu & 0.18g/t Au from 110m in LEFR288**

The copper mineralisation in LEFR289 is associated with more extensive and elevated magnetite alteration in the high Mg basalt. The mineralisation is masked by post mineral surficial clays and sands that varies from 20m to 25m in thickness.

The copper and gold mineralisation in the western basalt was first recognised and reported by the Company on 2 February 2021 from the maiden 21-hole RC and diamond drill program at Burns. Multiple holes on 40m spaced consecutive drill sections intersected intervals of fresh basalt containing native copper. The copper was present as either fine disseminations or up to 1cm sized pieces usually in fracture or vein fill associated with gypsum and calcite (refer Figure 4 LEX ASX release 2 February 2021).

RC pre-collared diamond hole LEFR273 had two zones of native copper, the deepest being at 190m down hole. The observation of native copper at Burns was not previously noted in the historical RC or diamond drilling and was considered by the Company to be an important development at the time. Holes LEFR 266, 268, 271,272, 273 and 275 also intersected native copper. Results from this program were reported to the ASX on 9 March 2021. Hole LEFR271 intersected 62m @ 0.47g/t Au & 0.45% Cu from 68m downhole to end of hole hosted within fresh epidote-magnetite-pyrite altered basalt.

The impressive copper intersection and results from LEFR289 prompted a review and re assessment of RC and diamond drill holes completed by the company along the western basalt zone (LEX ASX release 24 September 2021). These holes also had broad intervals of Cu Au mineralisation re calculated using the same parameters as that used for LEFR287-289. Significant intercepts from this reappraisal include: -

- **282m @ 0.12% Cu & 0.43g/t Au from 24m in LEFR273**
- **110m @ 0.53% Cu & 0.31g/t Au from 20m in LEFR271**
Incl. 29m @ 0.67% Cu & 0.58g/t Au from 101m
- **69m @ 0.32% Cu & 0.13g/t Au from 20m in LEFR272**
- **203m @0.19% Cu & 0.23g/t Au from100.2m in LEFR272**
- **36m @ 0.53% Cu & 0.49g/t Au from 34m in LEFR270**

The combined drill intercepts demonstrate a zone of Cu Au mineralisation in the western basalt having a strike length of 240m. This zone is open along a strike and at depth. This basalt hosted Cu-Au mineralisation is a component of the Burns mineral system and additional to the thick high-grade gold porphyry hosted intersection located approximately 120m to the east. The varying alteration styles, the native copper hosted in fresh basalt, and the broad magnetite alteration system continue to provide support for a large primary intrusion related Au-Cu-Ag system at Burns.

Burns Aeromagnetic Survey

The Company completed a detailed 25m line spaced aeromagnetic survey covering 54km² which was centered on and included the entire extent of the Burns Intrusion (Figure 4) in August 2021 (refer LEX ASX release 18 August 2021). The results from the survey were reported to the ASX on 28 September 2021.

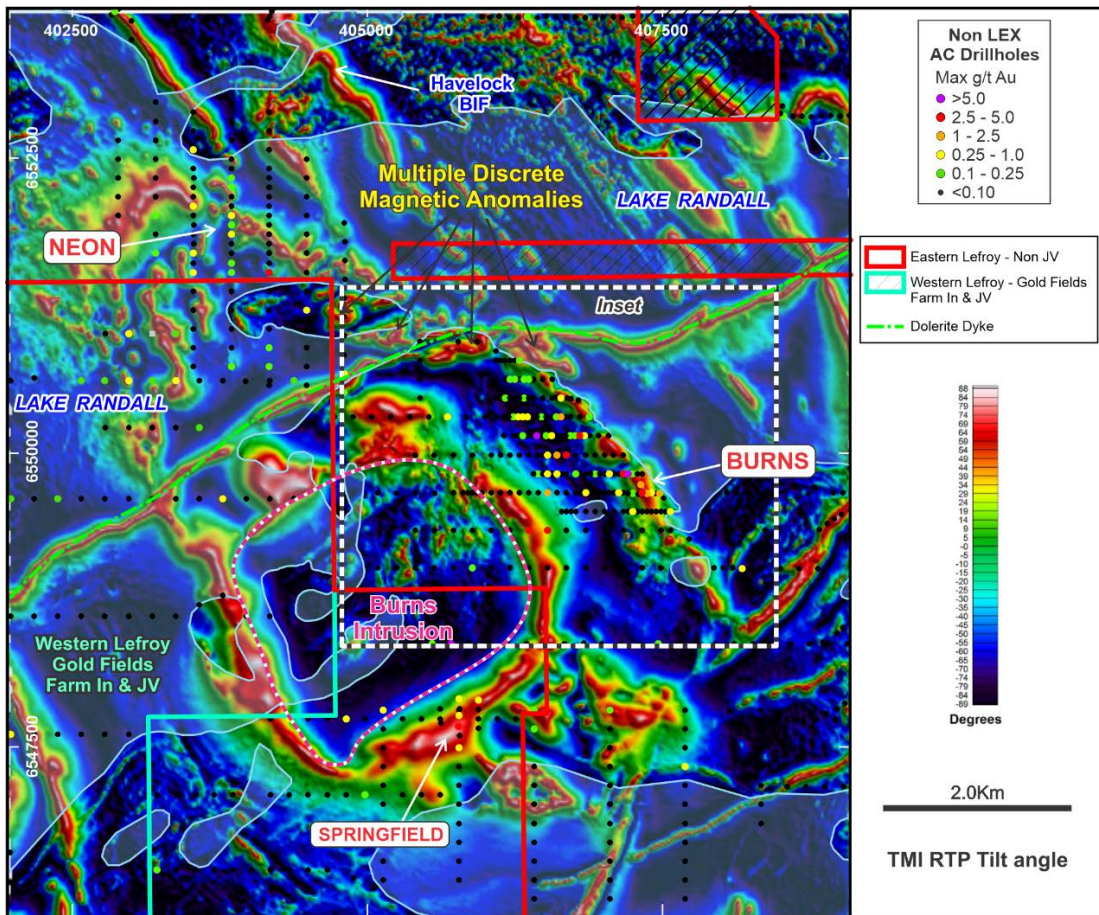


Figure 4 TMI RTP aeromagnetic image showing the full extent of the new aeromagnetic survey and the pronounced annular magnetic anomaly around the Burns Intrusion. Refer Figure 5 for the detail over the Burns prospect magnetic trend (warm colours represent rocks with stronger magnetic character)

Images from the new aeromagnetic survey (Figure 4 & 5) provide greater clarity and detail compared with the old data. Figure 4 highlights the full extent of the survey and clearly shows the extent of the annular magnetic anomaly surrounding the interpreted Burns Intrusion and a string of six magnetic anomalies to the east that define a distinct, Burns-like magnetic corridor (Figure 5). These anomalies form a 3000m trend, that includes Burns and extends out beneath Lake Randall. The Company interprets that the anomalies represent magnetite alteration zones within and surrounding porphyry dioritic intrusions that are additional to, and similar in style to, Burns

The largest and northernmost magnetic anomaly, now designated Lovejoy, lies beneath Lake Randall (Figures 4 & 5)). Lovejoy has a coincident, positive gravity anomaly (refer Figure 4 LEX ASX release 28 July 2021) of similar character to Burns.

Apart from Burns, the six magnetic anomalies have only been partly evaluated by previous wide spaced vertical aircore drill holes. The Company has completed a field inspection of these holes and collected drill chip samples representing the near fresh bedrock from the end of these holes where possible. The samples collected were given whole rock analysis. When combined with data from the Burns prospect the results highlight a +200ppm copper corridor that extends north to Lovejoy (Figure 5). The eastern and northern extents of the anomaly are limited by the absence of drilling in Lake Randall.

A smaller discrete magnetic anomaly, designated Kenny's Dream, lies approximately 400m northwest of Burns (Figure 5). The cause of the anomaly is unclear, but evidence from detailed gravity data suggests this may be related to a buried larger felsic intrusion.

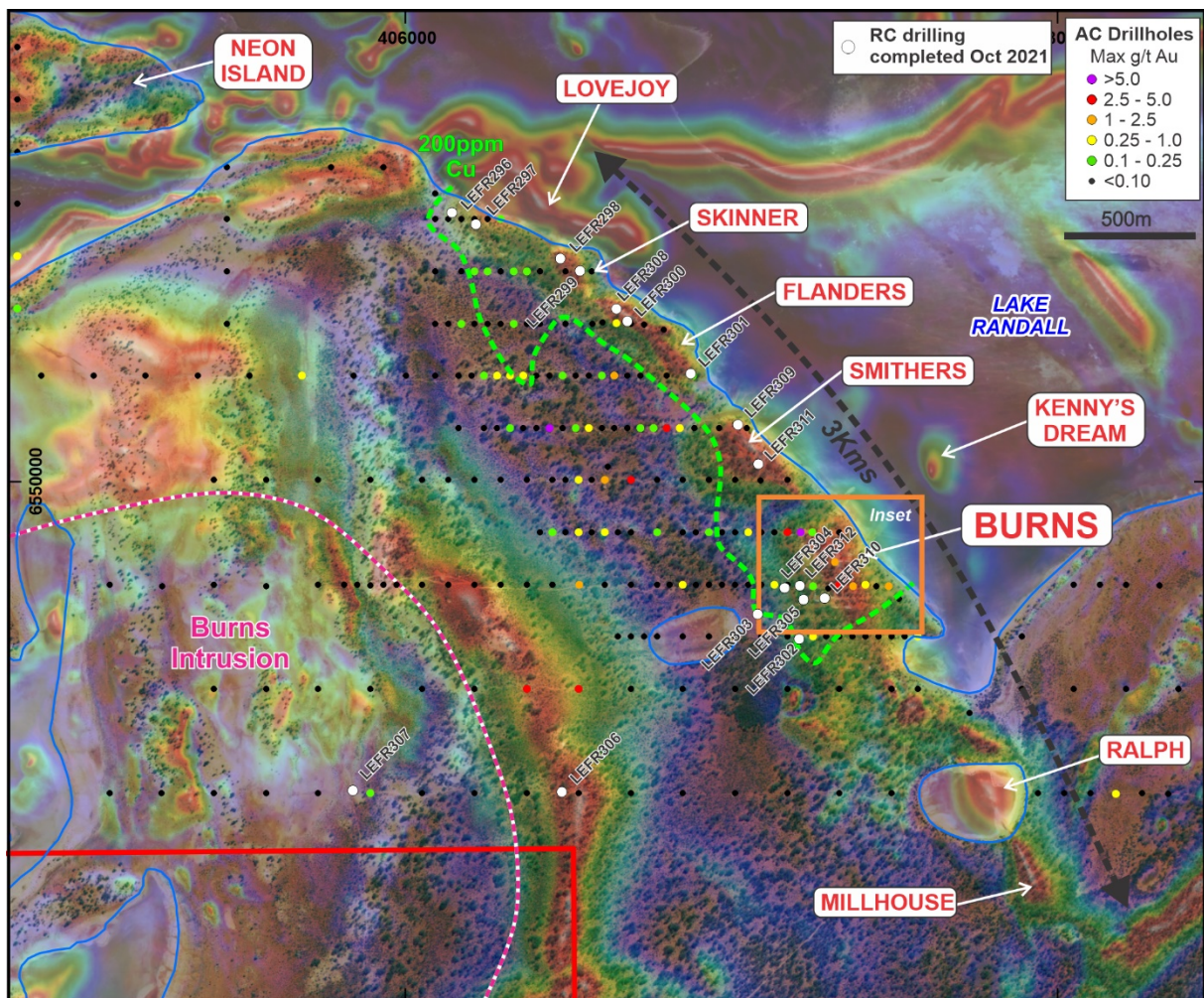


Figure 5 Combined satellite image with transparent TMI RTP aeromagnetic image highlighting the discrete magnetic anomalies along strike of Burns and the extent of the +200ppm copper anomaly. The inset area refers to the area of RC and diamond drilling at the Burns Au-Cu-Ag prospect (Figure 3). (Warm colours represent rocks beneath the surface with higher magnetite content). Coloured and black dots represent historical AC drill holes. The October RC drill holes are highlighted

The general association of the Au-Cu-Ag mineralisation at Burns, with magnetite in both basalt and diorite porphyry rocks, provides the rationale for a strong, first order exploration program focused on the newly found magnetic anomalies.

Stage 1 of the program involved drilling land-based targets using an RC rig, with stage 2 requiring a specialised lake aircore rig to evaluate targets (Lovejoy) in Lake Randall.

Subsequent to the end of the Quarter the stage 1 RC drilling program that commenced in September was completed. A total of 17 angled holes for 3336m evaluating 8 magnetic anomalies, including four holes at Burns was completed (Figure 5). Hole depths ranged from 120m to 258m, with an average depth of 200m. This program included one vertical hole drilled into the main Burns Intrusion. Samples have been dispatched in 17 jobs (each drill hole) to Perth for analysis with results expected in December. Two drill holes have been prioritised for analysis and results maybe received earlier than December. Compilation and assessment of geological results is underway.

Stage 2 of the program will involve evaluation of the Lovejoy and Kenny's Dream magnetic anomalies and the eastern extent of Burns all located in Lake Randall. Lovejoy is considered by the Company to be a priority target given it has coincident magnetic-gravity anomaly (LEX ASX release 24 September 2021). Drill hole planning is underway, and a specialised Lake aircore drill rig has been secured with drilling scheduled to commence in mid-November. The two staged program approach is designed to scope out the broader extent of the Burns mineral system to support defining metal zonation and alteration patterns that could lead to stronger zones of mineralisation

EIS Funding

During the quarter the Company applied for co-funding to drill a single 1000m diamond hole into the Burns mineral system. The co-funding is provided under the Exploration Incentive Scheme (EIS) managed by the Geoscience and Resources Strategy Division (GRSD) of the Department of Mines, Industry Regulation and Safety (DMIRS).

The Company was notified in late October that it's application was successful. The EIS co-funding drilling is to be completed in the 2021-2022 financial year and the grant of \$120,000 will be refunded after the reporting of the drilling program to the GRSD.

The final design and location of the deep hole will be prepared after interrogation and modelling of results from the recent (October) RC drill campaign. The hole will probe the depth extensions to the Cu dominant mineralisation in the western basalt and the Au-Cu mineralisation in the Eastern Porphyry.

Next Steps

The key objective to progress evaluation of the Burns system in the December Quarter is the completion of the AC drilling in Lake Randall to evaluate multiple targets near to Burns. This stage 2 program as noted above will commence shortly and is aimed at evaluating targets beneath Lake Randall and filling the geological knowledge gap immediately to the east of Burns. The combined results from this AC and the recent RC drill program will provide the broad geochemical and geological framework over the 3000m trend to then focus more detailed drill evaluation.

Coogee South Prospect

The Coogee South Prospect is located immediately along strike to the south of the high-grade (+5g/t Au) Coogee open pit (Figure 1 & 6), which was successfully mined by Ramelius Resources Limited (“Ramelius” and ASX: RMS) during 2014. Coogee South was excised from the Western Lefroy Farm-in and JV and returned as a 100% owned project to the Company on 18 June 2021 (refer LEX ASX release 2 August 2021).

During the quarter an AC drilling program was commenced (LEX ASX release 30 August 2021) and completed. A total of 136 vertical holes for 4056m were completed evaluating a 2000m trend commencing approximately 250m south of the Coogee open pit. The program was predominantly based on a 80m line spacing with holes at 40m centres. Samples were sent to Perth for analysis with final validated results to be reported in early November.

The Company also completed a detailed 25m line spaced aeromagnetic survey over the Coogee South Prospect during the quarter. This will provide enhancement of the magnetic features and anomalies rimming the granitic intrusion to assist in outlining further targets with a magnetic character similar to that observed at Coogee. Interrogation of the aeromagnetic data and placing the geology from the recent program is underway

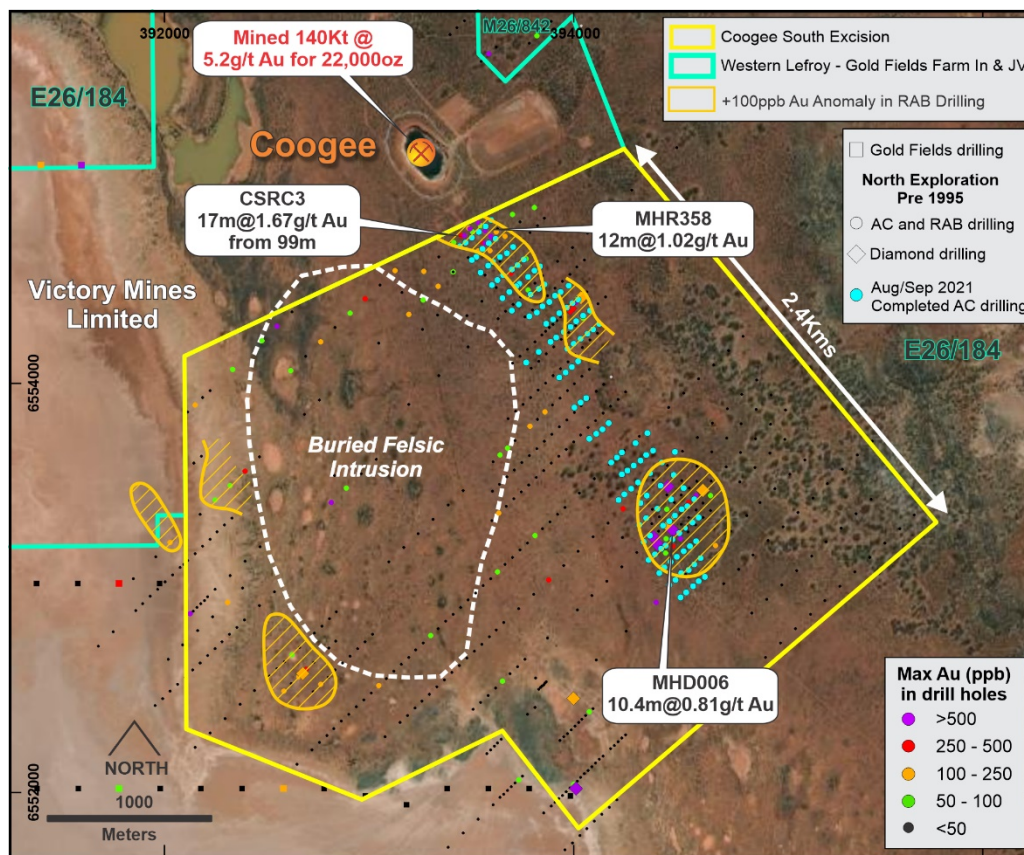


Figure 6 Inset Map showing the extent of the Coogee South excision from granted exploration license 26/184 and proximity to the Coogee Open pit (Figure adapted from Figure 8 Independent Geologists Report in Lefroy Exploration Limited-Prospectus: 8 September 2016). Completed holes are shown in blue the 100ppb anomaly outlined based on old drill holes.

Western Lefroy Gold Project (Farm-In and JV: Gold Fields right to earn 70%)

The Western Lefroy tenement package being farmed into by Gold Fields covers Lake Lefroy and the surrounding area. The package comprises 372km² of the total 637.6km² of the LGP and is adjacent to Gold Fields’ +10 million-ounce St Ives Gold operation (Figure 1).

During the quarter four angled RC holes totalling 854m were completed at the LJV 20 target along strike of the historical Cutters Luck gold workings. The drilling intersected dolerite intrusions (possibly Condenser Dolerite) and felsic porphyries in Black Flag sequence of siltstones, volcanics and volcanoclastics. Results are pending.

Subsequent to the end of the quarter it was announced (LEX ASX release 12 October 2021) that a massive Full Field Aircore (FFAC) drill program had been planned. The program will involve completing approximately 1318 vertical holes spaced 400m apart on traverses 400m apart to cover most of the land area of the Western Lefroy tenement package. This program will yield foundation geological and geochemical information that will be interrogated in conjunction with the geophysical data to deliver specific targets for AC, RC and diamond drilling.

The air core program has commenced and is expected to take approximately 6 months to complete, but dependent on land access. Results material to the Company will be reported to the market as the program progresses. Prior to the commencement of the FFAC program a discrete closed spaced AC drill program was completed at LJV19 also known as Paddys Secret. The area is a recent nugget patch with an insitu sheared nugget-rich sample recovered by a prospector in 2014. A total of 233 holes has since been completed Results are expected in January 2022.

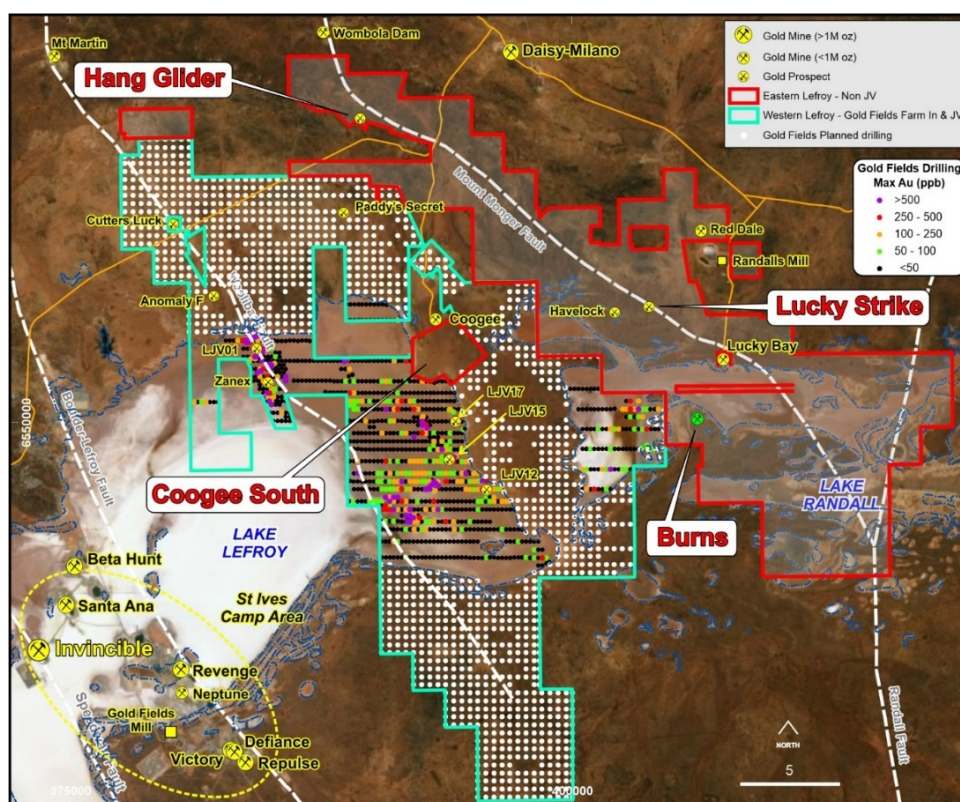


Figure 7 Lefroy Gold Project tenement package highlighting the Gold Fields Farm in & JV package and location of the Full Field Aircore (FFAC) drilling program. Schematic locations of the new FFAC program are represented by the white dots. Location of Paddys Secret is also shown

Next Steps

A quarterly exploration committee meeting was held on 26 October 2021 at the St Ives gold mine to plan and discuss the December quarter exploration program. The Company will be kept informed as the FFAC program progresses. Results are not expected until January 2022.

Lake Johnston Project (Gold and Nickel), Lefroy 100% of Gold and Nickel Rights

The Lake Johnston Project is located 120km west of Norseman in Western Australia and comprises two granted exploration licenses (E63/1722 & 1723) held under title by Lefroy, and one recently acquired exploration license (E63/1777) held under title by Lefroy with lithium rights held by Lithium Australia NL (ASX:LIT) (“**Lithium Australia**”). These holdings form a cohesive package of 197km² over the Lake Johnston Greenstone Belt.

The Company is progressing an opportunity to accelerate nickel and gold exploration on the project and commenced pursuing tasks to assist this strategy. The Company is mindful of the exploration prospectivity for nickel and gold mineralisation on the cohesive land package, but with the full focus being at Eastern Lefroy there is limited opportunity to run parallel exploration programs. The Company also recognises the appreciation in the nickel price and future demand by the EV industry and the opportunity to develop a dedicated Ni exploration Company

During the quarter the Company registered a wholly owned subsidiary company, Johnston Lakes Nickel Pty Ltd (JLN). The internal transfer of the Lake Johnston tenements held by LEX and Ni rights on five tenements at Carnilya south held by Monger Exploration Pty Ltd, also a subsidiary of the Company into JLN has commenced. The Company is considering a separate listing of the nickel assets held by JLN as a dedicated greenfield nickel explorer (refer LEX ASX release 25 October 2021).

EXPLORATION OUTLOOK DECEMBER 2021 QUARTER

Eastern Lefroy (100% LEX, Non-JV)

The Company will continue to actively progress field-based exploration in the December 2021 Quarter on the Non-JV Eastern Lefroy package. The Company has planned and scheduled an air core drilling program to commence in mid-November on Lake Randall as noted in this report.

There is a significant back log of RC samples from Burns at the Laboratory awaiting assay. The expected assay turnaround remains at least 2 months and expected in early December for validation and reporting.

Western Lefroy (Farm-In and JV Gold Fields right to earn 70%)

The FFAC program will be ongoing subject to Land access clearances in advance of the drilling.

Lake Johnston (Lefroy 100% of Gold and Nickel Rights)

The Company will continue progressing a listing of JLN as noted above to realise value from this asset.

CORPORATE

During the September 2021 Quarter the Company's total outgoings on its operating activities was \$1.48 million, of which \$0.87 million was attributed to direct exploration expenditure as noted in this report.

As of 30 September 2021, the Company had cash reserves of \$3.35 million.

The Company released its 2021 Annual Report on 30 September 2021.

During the September 2021 Quarter payments totalling \$256,000 were paid to related parties of the Company and their associates for Director fees and consulting services (refer to section 6 of the September 2021 Quarterly cash flow report for further detail).

The Company incorporated a new wholly owned subsidiary, Johnston Lakes Nickel Pty Ltd ("Johnston Lakes Nickel") during the Quarter. The new entity applied for five exploration licenses to form the Glenayle project in Western Australia and may be utilised going forward as a holder of certain other tenements and interests. (Refer ASX announcement of 26 October 2021 for further information).

The Company's Annual General Meeting will be held at 2.00pm (WST) on Thursday, 2 December 2021 at the Quest Kings Park Road, 54 Kings Park Road, West Perth, Western Australia. The Board has made the decision that it will hold a physical Meeting with appropriate social distancing measures in place to comply with the Federal Government and State Government's current restrictions on gatherings. Circumstances relating to COVID-19 are constantly evolving and accordingly, shareholders will be notified of any changes to the way in which the Meeting is held by way of announcement on ASX and the details will also be made available on our website at <https://leeroyex.com/>. Despatch of the Notice of Annual General Meeting and lodgement on ASX is scheduled for Monday, 1 November 2021.

This announcement has been authorised for release by the Board of Lefroy Exploration Limited.



Wade Johnson

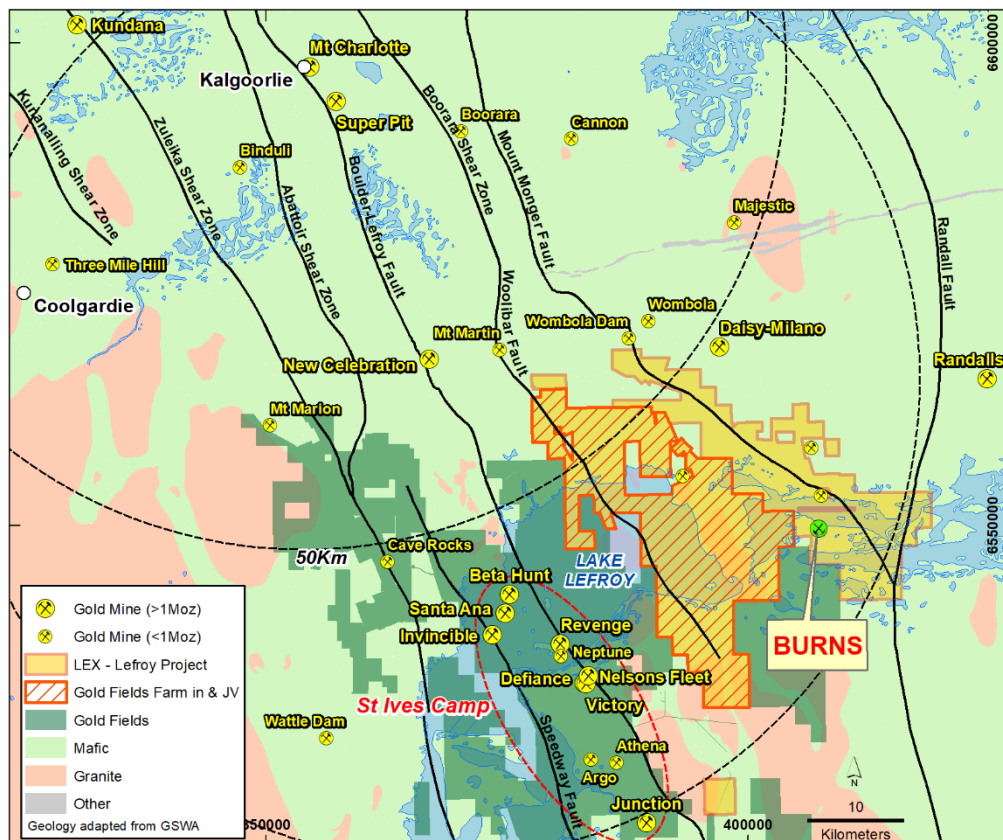
Managing Director

END

About Lefroy Exploration Limited and the Lefroy Gold Project

Lefroy Exploration Limited is a WA based and focused explorer taking a disciplined methodical and conceptual approach in the search for high value gold deposits in the Yilgarn Block of Western Australia. Key projects include the Lefroy Gold Project to the southeast of Kalgoorlie and the Lake Johnston Project 120km to the west of Norseman.

The 100% owned Lefroy Gold Project contains mainly granted tenure and covers 637.6km² in the heart of the world class gold production area between Kalgoorlie and Norseman. The Project is in close proximity to Gold Fields' St Ives gold camp, which contains the Invincible gold mine located in Lake Lefroy and is also immediately south of Silver Lake Resources' (ASX:SLR) Daisy Milano gold mining operation. The Project is divided into the Western Lefroy package, subject to a Farm-In Agreement with Gold Fields and the Eastern Lefroy package (100% Lefroy owned). The Farm-In Agreement with Gold Fields over the Western Lefroy tenement package commenced on 7 June 2018. Gold Fields can earn up to a 70% interest in the package by spending up to a total of \$25million on exploration activities within 6 years of the commencement date.



Location of the Lefroy Gold Project relative to Kalgoorlie. The Western Lefroy tenement package subject to the Gold Fields joint venture, and Gold Fields tenure are also highlighted

For Further Information please contact:

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Notes Specific-ASX Announcements

The following announcements were lodged with the ASX and further details (including supporting JORC Reporting Tables) for each of the sections noted in this Announcement can be found in the following releases. Note that these announcements are not the only announcements released to the ASX by the Company but specific to exploration completed during the September 2021 Quarter and reported in this announcement.

- Burns Drilling Update-first hole on 40N section confirms significant mineralisation extends to the north: 18 June 2021
- Exploration Update-RC drilling commences at the Burns Cu Au prospect: 20 July 2021
- Gold Fields Elects Stage 2 Earn in at Western Lefroy: 2 August 2021
- Burns Update-Cu-Au mineralisation confirmed on 0N section, step out drilling extends system: 3 August 2021
- June 2021 Quarterly Activities Report: 28 July 2021
- Exploration Update-Advancing the Burns and Coogee South Prospects: 18 August 2021
- Coogee South-Aircore Drilling Underway: 30 August 2021
- Results from 40N section Further Enhance Burns Cu-Au System: 21 September 2021
- Multiple Magnetic Anomalies Highlight 3000m Trend at Burns: 28 September 2021
- Drill Testing of Multiple Magnetic Targets Underway at Burns: 5 October 2021
- Massive Drilling Program Planned for the Western Lefroy JV: 13 October 2021
- LEX Expands Nickel Portfolio Securing a Major Land Package: 26 October 2021

The information in this announcement that relates to exploration targets and exploration results is based on information compiled by Wade Johnson a competent person who is a member of the Australian Institute of Geoscientists (AIG). Wade Johnson is employed by Lefroy Exploration Limited. Wade 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. Wade Johnson consents to the inclusion in this announcement of the matters based on his work in the form and context in which it appears.

LEFROY EXPLORATION LTD TENEMENT SCHEDULE 30 September 2021				
Project	Tenement ID	Ten status	Holder	Interest %
Lefroy	E15/1447	Live	HOGANS RESOURCES PTY LTD	100 ⁽¹⁾
Lefroy	E15/1615	Live	HOGANS RESOURCES PTY LTD	100 ⁽¹⁾
Lefroy	E26/0131	Live	HOGANS RESOURCES PTY LTD	100 ⁽¹⁾
Lefroy	E26/0134	Live	HOGANS RESOURCES PTY LTD	100 ⁽¹⁾
Lefroy	E26/0150	Live	HOGANS RESOURCES PTY LTD	100 ⁽¹⁾
Lefroy	E26/0184	Live	HOGANS RESOURCES PTY LTD	100 ⁽¹⁾
Lefroy	E26/0193	Live	HOGANS RESOURCES PTY LTD	100 ⁽¹⁾
Lefroy	M26/0842	Live	HOGANS RESOURCES PTY LTD	100 ⁽¹⁾
Lefroy	M26/0850	Pending	HOGANS RESOURCES PTY LTD	100 ⁽¹⁾
Lefroy	M26/0851	Pending	HOGANS RESOURCES PTY LTD	100 ⁽¹⁾
Lefroy	P26/3764	Live	HOGANS RESOURCES PTY LTD	100 ⁽¹⁾
Lefroy	P26/3765	Live	HOGANS RESOURCES PTY LTD	100 ⁽¹⁾
Lefroy	P26/3889	Live	HOGANS RESOURCES PTY LTD	100 ⁽¹⁾
Lefroy	P26/3890	Live	HOGANS RESOURCES PTY LTD	100 ⁽¹⁾
Lefroy	P26/3891	Live	HOGANS RESOURCES PTY LTD	100 ⁽¹⁾
Lake Johnston	E63/1722	Live	LEFROY EXPLORATION LTD	100
Lake Johnston	E63/1723	Live	LEFROY EXPLORATION LTD	100 ⁽²⁾
Lake Johnston	E63/2073	Pending	LEFROY EXPLORATION LTD	100
Lefroy	E15/1497	Live	MONGER EXPLORATION PTY LTD	100 ⁽¹⁾
Lefroy	E15/1498	Live	MONGER EXPLORATION PTY LTD	100 ⁽¹⁾
Lefroy	E15/1715	Live	MONGER EXPLORATION PTY LTD	100 ⁽¹⁾
Lefroy	E25/0517	Live	MONGER EXPLORATION PTY LTD	100 ⁽¹⁾
Lefroy	E25/0518	Live	MONGER EXPLORATION PTY LTD	100 ⁽¹⁾
Lefroy	E25/0587	Live	MONGER EXPLORATION PTY LTD	100 ⁽¹⁾
Lefroy	E25/0606	Pending	MONGER EXPLORATION PTY LTD	100 ⁽¹⁾
Lefroy	E26/0176	Live	MONGER EXPLORATION PTY LTD	100 ⁽¹⁾
Lefroy	E26/0182	Live	MONGER EXPLORATION PTY LTD	100 ⁽¹⁾
Lefroy	E26/0183	Live	MONGER EXPLORATION PTY LTD	100 ⁽¹⁾
Lefroy	E26/0195	Live	MONGER EXPLORATION PTY LTD	100 ⁽¹⁾
Lefroy	M25/0362	Live	MONGER EXPLORATION PTY LTD	100 ⁽¹⁾
Lefroy	M25/0363	Live	MONGER EXPLORATION PTY LTD	100 ⁽¹⁾
Lefroy	M25/0366	Live	MONGER EXPLORATION PTY LTD	100 ⁽¹⁾
Lefroy	P25/2316	Live	MONGER EXPLORATION PTY LTD	100 ⁽¹⁾
Lefroy	P25/2317	Live	MONGER EXPLORATION PTY LTD	100 ⁽¹⁾
Lefroy	P25/2421	Live	MONGER EXPLORATION PTY LTD	100 ⁽¹⁾
Lefroy	P25/2451	Live	MONGER EXPLORATION PTY LTD	100 ⁽¹⁾
Lefroy	P25/2488	Live	MONGER EXPLORATION PTY LTD	100 ⁽¹⁾
Lefroy	E15/1497	Live	MONGER EXPLORATION PTY LTD	100 ⁽¹⁾

LEFROY EXPLORATION LTD TENEMENT SCHEDULE 30 September 2021 cont.				
Project	Tenement ID	Ten status	Holder	Interest %
Lefroy	P26/4287	Live	MONGER EXPLORATION PTY LTD	100 ⁽¹⁾
Lefroy	P26/4391	Live	MONGER EXPLORATION PTY LTD	100 ⁽¹⁾
Lefroy	P26/4392	Live	MONGER EXPLORATION PTY LTD	100 ⁽¹⁾
Lefroy	P26/4393	Live	MONGER EXPLORATION PTY LTD	100 ⁽¹⁾
Lefroy	P26/4394	Live	MONGER EXPLORATION PTY LTD	100 ⁽¹⁾
Lefroy	P26/4423	Live	MONGER EXPLORATION PTY LTD	100 ⁽¹⁾
Lefroy	P26/4424	Live	MONGER EXPLORATION PTY LTD	100 ⁽¹⁾
Lefroy	P26/4425	Live	MONGER EXPLORATION PTY LTD	100 ⁽¹⁾
Lefroy	P26/4437	Live	MONGER EXPLORATION PTY LTD	100 ⁽¹⁾
Lefroy	P26/4438	Live	MONGER EXPLORATION PTY LTD	100 ⁽¹⁾
Lefroy	P26/4443	Live	MONGER EXPLORATION PTY LTD	100 ⁽¹⁾
Lefroy	P26/4444	Live	MONGER EXPLORATION PTY LTD	100 ⁽¹⁾
Lefroy	L25/0061	Pending	MONGER EXPLORATION PTY LTD	100 ⁽¹⁾
Lefroy	L25/0063	Pending	MONGER EXPLORATION PTY LTD	100 ⁽¹⁾
Lefroy	E25/524	Live	MONGER EXPLORATION PTY LTD	100 ⁽¹⁾
Transferring from Lithium Aust	E63/1777	Live	LITHIUM AUSTRALIA NL	100 ⁽³⁾
Glenayle	E69/3945	Application	JOHNSTON LAKES NICKEL PTY LTD	100 ⁽¹⁾
Glenayle	E69/3946	Application	JOHNSTON LAKES NICKEL PTY LTD	100 ⁽¹⁾
Glenayle	E69/3947	Application	JOHNSTON LAKES NICKEL PTY LTD	100 ⁽¹⁾
Glenayle	E69/3948	Application	JOHNSTON LAKES NICKEL PTY LTD	100 ⁽¹⁾
Glenayle	E69/3949	Application	JOHNSTON LAKES NICKEL PTY LTD	100 ⁽¹⁾

Notes to accompany tenement listing

- (1) Hogans Resources Pty Ltd, Monger Exploration Pty Ltd and Johnston Lakes Nickel Pty Ltd are wholly owned subsidiaries of Lefroy Exploration Limited
- (2) E63/1722, E63/1723 and E63/1777 - Held under title by LEX. Lithium Australia NL (ASX:LIT) have the rights to Lithium
- (3) E63/1777 is held by Lithium Australia NL and will be held by them until completion of the stamp duty transfer process which is underway.
- (4) E25/524 was transferred on 28 May 2021 from Silver Lake Resources to Monger Exploration Pty Ltd