# DECEMBER 2018 QUARTERLY REPORT

Legend

# 16 January 2019

#### LEGEND MINING LIMITED

ASX Symbol: **LEG** ABN 22 060 966 145

Level 1, 8 Kings Park Road West Perth Western Australia 6005 PO Box 626 West Perth Western Australia 6872 Phone: +61 8 9212 0600 Facsimile: +61 8 9212 0611 Email: legend@legendmining.com.au Website:

www.legendmining.com.au

### CONTACT

Mr Mark Wilson Managing Director

Mr Derek Waterfield Executive Director Technical

#### PROJECTS

Rockford - Fraser Range: Nickel-Copper (Ni-Cu) Copper-Zinc-Silver (Cu-Zn-Ag) Gold (Au)

# HIGHLIGHTS – Rockford Project, Fraser Range

- Nine new conductors identified and better definition of two previous conductors at Area D
- Two new conductors and anomalous volcanogenic massive sulphide (VMS) geochemical signature identified at Shackleton Prospect
- Anomalous 0.71% nickel and copper-zinc-silver geochemistry defined at Rockford South
- \$1.2Million Tax Refund received

### **OVERVIEW**

The December 2018 Quarter was a very productive one for Legend, with all of our exploration activities delivering new positive outcomes as highlighted above.

It has set the scene for a pipeline of programmes across the Rockford Project coming off a highly prospective base in the coming year. These planned programmes are detailed in the respective sections within the body of this report.

The programmes will commence with an aeromagnetic survey over a portion of Rockford South and an induced polarisation (IP) survey at Area D which is aimed to provide a new dataset to assist in the design of locations for follow up diamond drilling.

The ongoing aircore drill activities are planned to start in early March 2019, commencing at Rockford South.

# 1. ROCKFORD PROJECT (Fraser Range District) Nickel-Copper, Copper-Zinc-Silver, Gold

Legend's Rockford Project is located in the highly prospective Fraser Range district of Western Australia and covers a total area of 2,621km<sup>2</sup> (see Figure 1). The majority of the project (2,358.5km<sup>2</sup>), comprising seven contiguous granted exploration licences is the subject of a joint venture between Legend (70%) and Creasy Group (30%), with Legend operator and manager of the joint venture. The remaining 262.5km<sup>2</sup> is 100% owned by Legend and includes five granted exploration licences.

Exploration activities during the December 2018 Quarter focussed on Area D and the southern portion of the Rockford Project, including the Shackleton prospect. Activities included innovative MLTEM surveying at Area D and Shackleton, 57 regional aircore drillholes and geochemical sampling (see Figure 1). A detailed discussion of these activities is provided in the body of this report.



Figure 1: Rockford Project with December 2018 Quarter Activity Locations

Exploration activities completed during the December 2018 Quarter included:

- Innovative MLTEM survey over Area D; 38 lines, 77.9km, 832 stations
- Innovative MLTEM survey over Shackleton; 11 lines, 26.6km, 278 stations

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- Aircore drilling of 57 holes (RKAC468-524) for 2,227m
- Geochemical results for 775 samples from aircore drillholes RKAC390-524.

### Area D

During the December 2018 Quarter an innovative MLTEM survey was completed over Area D comprising 38 lines for 77.9km with 832 stations and covering an area of 23km<sup>2</sup>. The survey was designed to test for massive sulphide mineralisation associated with four zones of coherent anomalous Ni-Cu-Co geochemistry defined in aircore drilling, as well as the wider Area D region where numerous mafic/ultramafic intrusions have been identified.

The survey was successful in delineating nine new bedrock conductors (D9-D17) as well as providing better definition on previously identified D3 and D5 conductors (see Figure 2 & Table 1).



Figure 2: Area D MLTEM Conductor Plates and Anomalous Aircore Drillholes on Aeromagnetics

Table 1: Area D MLTEM Modelled Parameters									
Conductor	Conductance	Dimensions	Depth to Top	Plate Orientation					
D3*	~8,000-12,000S+	~1,000m x 700m	200-250m	55-65º NW dip					
D5*	~1,500-2,500S	~1,000m x 1,500m	125-175m	~80 <sup>0</sup> ESE dip					
D9	~1,500-2,500S	~1,000m x 1,500m	125-175m	75-80º SE dip					
D10	~1,500-2,500S	~1,200m x 1,400m	125-175m	~80-90 <sup>0</sup> SSE dip					
D11	~2,000-3,000S	~1,200m x 1,500m	125-175m	~75 <sup>0</sup> SSE dip					
D12	~3,000-6,000S	~600m x 1,000m	150-200m	60-70 <sup>0</sup> NW dip					
D13	~2,000-3,000S	~300 x 800m	125-150m	~80-90 <sup>0</sup> NNW dip					
D14	~7,000-12,000S+	~200m x 50-75m	100-150m	60-70º N dip					
D15	~9,000-12,000S+	~250m x 500m	275-350m	70-80º N dip					
D16	~5,000-6,000S	~900m x 1,000m	125-175m	75-85º SE dip					
D17	400-750S	~700m x 800m+	150-200m	~60º WNW dip					

\* Conductors D3 and D5 originally identified in the November 2015 survey have been remodelled with infill data from the November 2018 survey.

A total of 17 conductors with varying parameters/character have now been identified at Area D by the original MLTEM survey in November 2015, a FLTEM survey in April 2016 and the November 2018 MLTEM survey. A summary of the conductors identified in the recent MLTEM survey and their significance is given below.

#### Conductor D5

D5 is a high priority conductor given its close proximity to aircore drillhole RKAC183, which intersected disseminated pyrrhotite-pentlandite-chalcopyrite in a gabbronorite host rock (see Figure 2). RKAC183 previously returned the significant assay result of 14m @ 0.37% Ni, 0.43% Cu, 0.03% Co from 72m to end of hole, including 2m @ 0.46% Ni, 1.44% Cu, 0.04% Co from 77m (ASX announcement 9 April 2018).

The D5 conductor has been remodelled incorporating recent infill data and defined a large (1,000m x 1,500m) feature with moderate conductance of 1,500-2,500S and a depth to top of conductor of 125-175m. Significantly, the modelled top of the conductor lies 200m to the west of aircore drillhole RKAC183 with the ~80<sup>o</sup> ESE dip indicating the conductor extends below RKAC183.

#### Conductors D3, D9-D12, D16

These six conductors have similar parameters and together define an oval shaped structure in the centre of Area D (see Figure 2). The orientation and dip of this group of conductors outlines a large synformal structure, which importantly is the same architectural setting as the Nova deposit.

Previously identified and drilled MLTEM conductors D1 and D2 are related to this group and intersected barren sulphide±graphite units within a broader metasedimentary package. Despite this association with barren sulphide±graphite the presence of gabbronorite intrusions in close proximity to the conductors increases the prospectivity of the central synform. Given the moderate to very high conductances of these conductors, there is also a possibility that any massive sulphide mineralisation immediately adjacent or beneath the conductors may be masked and "invisible" to the MLTEM.

### Conductors D13-D15

D13 is a moderate conductor (~2,000-3,000S) and shows similarities to the conductors associated with the synformal structure mentioned above. However, it is a relatively discrete feature and appears related to a linear magnetic unit some 200m to the north.

D14 and D15 differ to many/most of the Area D conductors in that they are discrete features with high conductances (7,000-12,000S). They are also directly associated with a coincident localised magnetic high and gravity high/ridge in the far northeast of Area D (see Figure 2). Further infill MLTEM or FLTEM may be required to better define the orientation and parameters of the features.

#### Conductor D17

D17 is a mid-size, low conductance (400-750S) feature located on the eastern margin of a 1.5km circular magnetic feature with a central high (see Figure 2). Aircore drilling over the central high of the magnetic feature intersected gabbro/gabbronorite and metasediment/granulite. This feature requires further evaluation.

#### Area D Future Programmes

- An IP survey over the conductors in the central synform, also covering aircore drillhole RKAC183 which contained disseminated pyrrhotite-pentlandite-chalcopyrite sulphides and conductor D5.
- Aircore drilling aimed at providing geological information/context for identified conductors to assist with target prioritisation.
- Infill/detailed FLTEM/MLTEM surveys to better define parameters and orientation of D13-D15 conductors.

### Shackleton Prospect

#### Aircore Drilling

A total of 32 holes (RKAC409-434, 453-458) for 1,139m were completed over three drill traverses at the Shackleton prospect (see Figure 3). The drilling was focussed on a magnetically distinct stratigraphic package, considered prospective for VMS deposits similar to IGO's recently discovered Andromeda Cu-Zn prospect some 7km to the SW.

Assay results from the aircore drilling returned indications of VMS style mineralisation (see Table 2) on Line 1 and two broad zones with elevated gold values (see Table 3) on Line 2 (see Figure 3).

The Line 1 traverse intersected a thick package of felsic to mafic metasediment/granulite and importantly, a weathered pyritic black shale (possible exhalite horizon) in drillhole RKAC417. This black shale returned an intersection of 8m @ 2.21% S from 36m in RKAC417, with this sulphur-rich zone extending 400m to the north in drillholes RKAC418-419. Drillholes RKAC417-418 both ended in mafic metasediment/granulite bedrock with elevated zinc intervals to bottom of hole: 10m @ 0.06% Zn from 68m and 7m @ 0.06% Zn from 68m respectively (see Table 2).

The presence of a pyritic black shale unit associated with elevated Zn and Ag±S±Mo±Bi±Sn±In±TI is considered very encouraging as this association may represent a marker/ore horizon typical of the VMS environment.



Figure 3: Shackleton Aircore Drillhole Location with Anomalous Results

Table 2: Shackleton Prospect – Anomalous Zinc/Sulphur Aircore Results								
Drillhole From To Interval Zn % S % Au g/t Lithology								
RKAC417	36	44	8	0.01	2.21	-0.01	Saprolite and pyritic black shale	
RKAC417	68	78 EOH	10	0.06	0.09	0.01	Mafic metased/granulite	
RKAC418	36	44	8	0.02	1.99	-0.01	Saprolite over mafic metased/granulite	
RKAC418	68	75 EOH	7	0.06	0.09	0.13	Mafic metased/granulite	
Incl.	68	72	4	0.06	0.09	0.22	Mafic metased/granulite	
RKAC419	36	40	4	0.01	1.99	0.07	Saprolite over mafic metased/granulite	

The Line 2 traverse also intersected a thick package of felsic to mafic metasediment/granulite along with minor quartz veining and strong calcrete development in the central part of the traverse. Gold results ranging from 0.08 to 0.58g/t Au, which are highly anomalous relative to background (0.01g/t Au), were returned from six of the 15 holes on the traverse and occur in saprolite, saprock and basement (see Table 3 & Figure 3). The gold intervals on this traverse are coincident with low levels of S±Mo±Sn±Sc interpreted as a subtle VMS signature.

Table 3: Shackleton Prospect – Anomalous Gold Aircore Results									
Drillhole From To Interval Au g/t Lithology									
RKAC418	68	72	4	0.22	Mafic metased/granulite				
RKAC420	12	16	4	0.58	Fe-saprolite over felsic metased/gneiss				
RKAC421	36	40	4	0.26	Fe-saprolite over felsic metased/granulite				
RKAC427	22	23 EOH	1	0.11	Mafic metased/granulite + qtz veins				
RKAC428	16	20	4	0.22	Saprock over mafic metased/granulite + qtz veins				
RKAC429	4	8	4	0.23	Mafic metased/granulite				
RKAC431	12	16	4	0.08	Saprolite over mafic metased/granulite + qtz veins				

#### **MLTEM Survey**

MLTEM surveys over the Shackleton prospect identified two significant bedrock conductors, Shackleton 1 and 2 (see Figure 4 & Table 4). These surveys were undertaken over two separate priority target areas and cover only 30% of the 24km magnetic trend considered prospective for VMS mineralisation. Further MLTEM surveying over this trend is planned for 2019.



Figure 4: Shackleton Prospect MLTEM Conductor Location

Table 4: Shackleton Prospect MLTEM Modelled Parameters							
Conductor Conductance Dimensions Depth to Top Plate Orientation							
Shackleton 1	~150-200S	500m x 1,000m	~50m	80-85º ESE dip			
Shackleton 2	~100-150S	>1,000m x 1,000m	60-90m	~10-15º WNW dip			

The two conductors have differing dimensions and orientation (see Table 4), as well as their location with respect to the magnetic stratigraphic package and are discussed further below.

#### Shackleton 1 Conductor

Eight MLTEM lines were completed in the southern part of Shackleton targeting a strong magnetic feature, a ENE trending cross-cutting structure and elevated geochemistry in previous aircore drilling. The survey identified the Shackleton 1 conductor which has a weak to moderate conductance of ~150-200S and moderate size, but importantly coincides with the western margin of the strong magnetic feature (see Figure 4 & Table 4). The conductor is also closely associated with the geochemically anomalous pyritic black shale (interpreted exhalite horizon) intersected in drillholes RKAC417-419 as discussed above (see Table 2).

The relatively low conductance of Shackleton 1 is interpreted to be due to a more pyrite-dominant source rather than a pyrrhotite-dominant source where a much higher conductance would be expected. This interpretation is supported by the presence of the pyritic black shale in the aircore drilling, while the lower conductance is considered consistent with pyrite-dominant VMS style mineralisation.

#### Shackleton 2 Conductor

Only two and half MLTEM lines were completed over the northern target area before bad weather and atmospheric interference caused the termination of surveying. However, the limited surveying identified the Shackleton 2 conductor located west of the main magnetic stratigraphic package in a region with low magnetics (see Figure 4).

Shackleton 2 is a broad, relatively flat lying (10-15<sup>°</sup> dip) low conductivity feature. Further MLTEM surveying is required to the south of Shackleton 2 to define the extent of the feature and determine whether the conductance and character of the conductor changes along strike.

#### Shackleton Future Programmes

- RC/diamond drill test Shackleton 1 conductor.
- Extend aircore and MLTEM coverage over 24km VMS prospective stratigraphic package.

### **Rockford South**

Aircore drilling during the December 2018 Quarter comprised 57 holes (RKAC468-524) for 2,227m and focussed on the Rockford South area (see Figure 1) targeting interpreted mafic/ultramafic intrusions.

This drilling completed the 2018 Regional Aircore Drilling Programme, which formed part of Legend's systematic exploration approach across the entire Rockford Project, and involved 344 holes for 22,897m testing 27 separate targets.

Assay results from this drilling returned anomalous geochemistry in holes RKAC520 and RKAC505 (see Figure 5). Two different styles of mineralisation are represented by these anomalous results with RKAC520 considered a magmatic Ni-Cu intrusive related style, while RKAC505 displays characteristics of a Cu-Zn-Ag VMS system. Both are discussed in more detail below.



Figure 5: Anomalous Aircore Drillholes with S1 Conductor on Aeromagnetic Image

# RKAC520 – Mafic/ultramafic related magmatic Ni-Cu

An eight hole traverse including drillhole RKAC520 was designed to test a coincident aeromagnetic low and gravity high interpreted as a possible mafic/ultramafic (see Figure 5). RKAC520 intersected a medium grained mafic/ultramafic intrusive with strong silica/goethite alteration and returned an intersection of: 11m @ 0.42% Ni, 0.01% Cu, 0.03% Co from 32m to end of hole (see Table 5). This intersection along with the maximum value of 3m @ 0.71% Ni in a favourable intrusive host rock further demonstrates the prospectivity for Nova style Ni-Cu mineralisation in the Rockford South region.

Table 5: Anomalous Results from Aircore Drillhole RKAC520								
Hole From To Int Ni % Cu % Co % Cr % Description								
RKAC520	32	36	4	0.15	0.02	0.01	0.27	Saprolite over mafic/ultramafic
RKAC520	36	40	4	0.47	0.01	0.05	0.60	Saprock over mafic/ultramafic
RKAC520 40 43 EOH 3 0.71 0.01 0.04 1.14 Si/Fe altered mafic/ultramafic								
Note: Co-orc	ote: Co-ordinates GDA94 MGA Zone 51 RKAC520 - 580.600E / 6.550.597N							

Holes RKAC519 and RKAC521 drilled 400m east and west of RKAC520 respectively, both intersected banded to massive granulite/metasediment with no anomalous results returned. Infill aircore drilling adjacent to RKAC520 is required to define the extent of the anomalous geochemistry and favourable intrusive host rock.

#### RKAC505 – Cu-Zn-Aa VMS

A five hole traverse including drillhole RKAC505 was designed to provide bedrock lithological and geochemical information over the S1 conductor at Area S (see Figure 5). The S1 conductor was previously defined by MLTEM surveying (ASX announcement 12 September 2017) with modelled parameters shown in Table 6.

Table 6: Area S MLTEM Modelled Parameters					
Conductor	Conductance	Dimensions	Depth to Top	Plate Orientation	
S1	300-500S	1,000m X 1,000m	150-200m	45-55 <sup>0</sup> ESE dip	

Drillhole RKAC505 intersected a profile containing 49m of ferruginous saprolite/saprock before ending at 97m in banded mafic granulite with elevated Cu-Zn-Ag and trace amounts of pyrite. RKAC505 returned an intersection of 9m @ 0.09% Cu, 0.06% Zn, 1.47 g/t Ag from 88m to end of Importantly the anomalous assay results and increased depth of hole (see Table 7). weathering/alteration potentially due to the presence of sulphides in RKAC505 coincides with the up dip projection of the S1 conductor plate (see Figure 5) making Area S a priority RC/diamond drilling target for 2019.

Table 7: Anomalous Results from Aircore Drillhole RKAC505									
Hole	Hole From To Int Cu % Zn % Fe % S % Ag g/t Description								Description
RKAC505	88	92	4	0.12	0.08	30.56	3.02	1.89	Mafic granulite
RKAC505	92	97 EOH	5	0.06	0.05	16.85	0.66	1.13	Mafic granulite, trace pyrite
Note: Co-ordir	ote: Co-ordinates GDA94 MGA Zone 51 _ RKAC505 - 587 102E / 6 556 615N								

Co-ordinates GDA94 MGA Zone 51 RKAC505 - 587,102E / 6,556,615N

Holes RKAC485 and RKAC506 drilled 400m east and west of RKAC505 respectively, both intersected banded to massive mafic granulite/metasediment with no anomalous results returned. Infill aircore drilling adjacent to RKAC505 is required to define the extent of the anomalous geochemistry followed by RC/diamond drilling of the S1 conductor.

#### **Rockford South Future Programmes**

- Detailed 50m line spaced aeromagnetic survey over 124km<sup>2</sup> of tenements E28/1718 and E28/2404 (coverage over RKAC520 and RKAC505) to assist future target selection.
- Infill aircore drilling adjacent to drillholes RKAC520 and RKAC505 to define extent of anomalous geochemistry.
- RC/diamond drill test Area S conductor.
- Ongoing assessment of exploration results and target selection.

# 2. CORPORATE

#### **Research and Development Cash Refund**

Legend lodged its FY2018 tax return in November 2018 and received a R&D cash refund from the Australian Taxation Office of \$1,282,355 on 7 December 2018.

#### Jindal \$3M Receivable

Legend received the December 2018 interest payment of \$30,000 from Jindal Steel and Power on 20 December 2018.

#### **Competent Person Statement**

The information in this report that relates to Exploration Results is based on information compiled by Mr Derek Waterfield, a Member of the Australian Institute of Geoscientists and a full time employee of Legend Mining Limited. Mr Waterfield has sufficient experience that is relevant to the styles of mineralisation and types of deposit under consideration, and to the activity being undertaken, 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" (JORC Code). Mr Waterfield consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this report that relates to Legend's Exploration Results is a compilation of previously released to ASX by Legend Mining (12 September 2017, 9 April 2108, 23 October 2018, 19 November 2018, 5 and 21 December 2018) and Mr Derek Waterfield consents to the inclusion of these Results in this report. Mr Waterfield has advised that this consent remains in place for subsequent releases by Legend of the same information in the same form and context, until the consent is withdrawn or replaced by a subsequent report and accompanying consent. Legend 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 in the market announcements continue to apply and have not materially changed. Legend confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcements.

Visit <u>www.legendmining.com.au</u> for further information and announcements.

#### For more information:

Mr Mark Wilson Managing Director Ph: (08) 9212 0600 Mr Derek Waterfield Executive Director - Technical Ph: (08) 9212 0600

# Appendix 1: Tenement Schedule as at 31 December 2018

#### **Mining Tenements**

Tenement	Location	Interest at	Acquired /	Interest at	Comments
Reference		beginning	Withdrawn	end of	
		of Quarter		Quarter	
E28/1718	Fraser Range, Western Australia	70%	N/A	70%	70:30 JV
E28/1727	Fraser Range, Western Australia	70%	N/A	70%	70:30 JV
E28/2188	Fraser Range, Western Australia	70%	N/A	70%	70:30 JV
E28/2189	Fraser Range, Western Australia	70%	N/A	70%	70:30 JV
E28/2190	Fraser Range, Western Australia	70%	N/A	70%	70:30 JV
E28/2191	Fraser Range, Western Australia	70%	N/A	70%	70:30 JV
E28/2192	Fraser Range, Western Australia	70%	N/A	70%	70:30 JV
E28/2404	Fraser Range, Western Australia	100%	N/A	100%	
E28/2405	Fraser Range, Western Australia	100%	N/A	100%	
E28/2675	Fraser Range, Western Australia	100%	N/A	100%	
E28/2676	Fraser Range, Western Australia	100%	N/A	100%	
E28/2677	Fraser Range, Western Australia	100%	N/A	100%	

#### Farm-In or Farm-Out Arrangements

Tenement Reference	Location	Interest at beginning of Quarter	Acquired / Withdrawn	Interest at end of Quarter	Comments
None	N/A	N/A	N/A	N/A	N/A