

**ASX:LEG** 

**ASX Announcement** 

# Sulphides Intersected in First Diamond Drilling at Rockford Project

- Pyrrhotite and minor chalcopyrite/pentlandite identified in cumulate gabbro
- Strong pyrrhotite development in metasediment adjacent to mafic/ultramafic units (see Photo 1 below)
- Potential of Area D significantly increased by diamond drilling programme

Legend Mining Limited ("Legend") is pleased to announce the completion of a two hole diamond drilling programme at Area D at its Rockford Project in the Fraser Range. The drillholes were targeting three conductors (D6, D7 and D8) identified previously by high powered moving and fixed loop electromagnetic surveys ("MLTEM" and "FLTEM"). Downhole electromagnetic surveying ("DHTEM") was also completed on both holes confirming that the drilling had intersected the source of all three conductors.

Legend Managing Director Mark Wilson said, "The fact that we have encountered several similarities to a Nova-Bollinger style system in our first diamond drill programme speaks volumes for the prospectivity of our entire Rockford Project. It is particularly satisfying that our strategic approach of using the aeromagnetic and gravity datasets to identify potential intrusive bodies, followed up with ground EM and drilling, has produced this result."



Photo 1: RKDD001-566.8m: Pyrrhotite in mafic granulite (NQ2 core)



# **Technical Discussion**

Legend has completed a diamond drilling programme comprising two holes (RKDD001-002) totalling 1,301.7m at Area D at its Rockford Project in the Fraser Range. The drillholes were targeting three conductors (D6, D7 and D8) identified previously by MLTEM and FLTEM surveys, see ASX announcements 11 December 2015 and 2 May 2016.

DHTEM surveys were also completed in both drillholes enabling direct correlation of geological logging/observations and the inhole EM response. The results of the DHTEM clearly indicate that all three conductors were intersected in the drilling.

A summary of drilling details is provided below in Table 1, while the drillholes are located on Figure 1.

Table 1: Diamond Drillhole Summary							
Hole	Easting	Northing	Conductor	RL	Dip	Azimuth	<b>Final Depth</b>
RKDD001	639852	6598275	D6	203	-60 <sup>0</sup>	130 <sup>0</sup>	584
RKDD002	638125	6598750	D7 & D8	203	-70 <sup>0</sup>	090 <sup>0</sup>	717.7
Total							1,301.7

Co-ordinates GDA94 MGA Zone 51

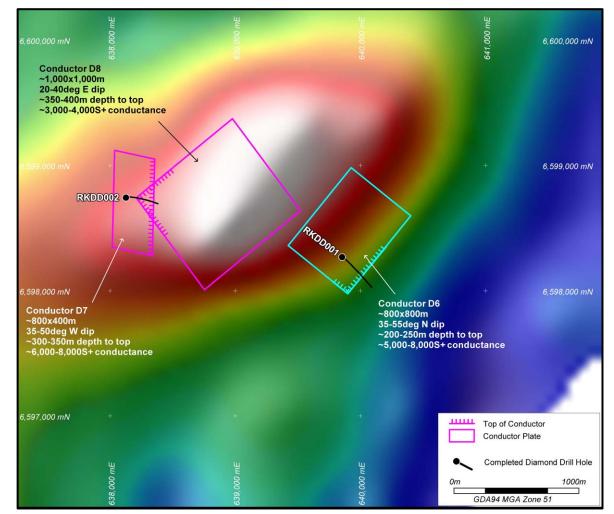


Figure 1: Drillhole Location with FLTEM Conductor Plates on Residual Gravity



## Conductor D6 – Diamond Drillhole RKDD001

RKDD001 was drilled to test D6, a strong FLTEM conductor with the following parameters; ~5,000-8,000S+ conductance, ~800x800m areal size, a moderate northerly dip ~35-55<sup>0</sup>, and estimated depth to top of source of ~200-250m, see Figure 1.

The hole was drilled to 584m intersecting a sequence comprising; gabbro, ultramafic, mafic to felsic granulite and metasediment, and is summarised in Table 2 below.

A strongly foliated felsic quartz-biotite-garnet granulite with up to 3% pyrrhotite and ~5% graphite was intersected between 291.9-314.5m, coinciding fairly closely with the modelled target depth of 325m. However, this unit was not considered large enough or strong enough to explain the D6 feature and that the source of D6 was deeper in the hole.

Two further units containing approximately 3-5% pyrrhotite and +5% graphite between 448.9-464.6m and 526.6-572.6m hosted within the mafic-felsic granulite/metasediment sequence were also intersected, see Photo 1. A DHTEM survey of RKDD001 clearly defined these two pyrrhotite/graphite rich intervals as inhole conductors and fully explains the D6 conductor.



Photo 1: RKDD001-566.8m: Pyrrhotite in mafic granulite (NQ2 core)

Table 2 : RKDD001 – Drill Log Summary			
Interval	Description		
0 - 91.0m	Transported Cover		
91.0 - 166.9m	Gabbro/(Mafic Granulite) with minor Ultramafic		
166.9 - 584.0m	Mafic-Felsic Granulite with Metasediment		
166.9 - 176.8m	Graphite/carbonate rich interval		
291.9 - 314.5m	Pyrrhotite (1-3%) & graphite (~5%)		
448.9 - 464.6m	Pyrrhotite (3-5%) & graphite (+5%)		
526.6 - 572.6m	Intervals with pyrrhotite (3-5%) and graphite (+5%)		



### Conductors D7 & D8 – Diamond Drillhole RKDD002

RKDD002 was drilled to a depth of 717.7m with the aim of testing Conductors D7 and D8, see Figure 1. D7 has a conductance of ~6,000-8,000S+, dimensions of ~800m x 400m and an estimated depth to top of source of ~300-350m, while D8 has a lower conductance of ~3,000-4,000S+, is larger in size ~1,000m x 1,000m with an estimated depth to top of source of ~350-400m.

The drillhole intersected a sequence including; an upper and lower gabbro, mafic to felsic granulite and metasediment with several intervals containing significant sulphides (see Photo 2). A summary of the geological log is provided below in Table 3.



Photo 2: RKDD002-508.5m: Pentlandite (silver), pyrrhotite (brown) in mafic granulite (NQ2)

The occurrence of minor disseminated pyrrhotite/chalcopyrite/pentlandite (FeS, CuS, NiS) in two intervals between 626.3-626.8m and 661.0-661.35m is considered highly significant. Whilst the tenor is low, the sulphides are hosted in a cumulate textured gabbro (see Photo 3), which is a favourable host for nickel-copper mineralisation. Further evaluation of this gabbro unit is required to test for potential larger accumulations of sulphide.

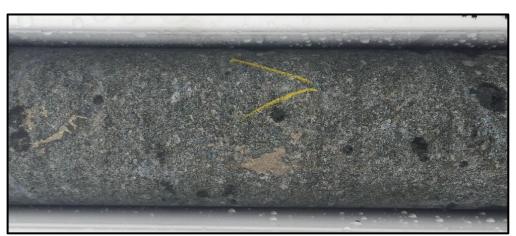


Photo 3: RKDD002-626.5m: Pyrrhotite (brown), trace pentlandite/chalcopyrite in cumulate textured gabbro (NQ2 core)



A DHTEM survey of RKDD002 clearly identified strong inhole and offhole anomalism centred at 450-475m and 550-600m downhole. The combination of these two conductive features is considered sufficient to explain the targeted D7 and D8 conductors.

It is also highly significant that the high power DHTEM was firstly able to detect the upper disseminated sulphide zone (626.3-626.8m) in early/mid channels and secondly to do so given the presence of strong conductors higher in the hole. The signature of this sulphide zone is consistent with a stringer-like unit with limited areal extent (<15x15m) of moderate conductance (<2,000S) and persists to ~20msec delay times.

Table 3 : RKDD002 – Drill Log Summary			
Interval	Description		
0 – 80.6m	Transported Cover		
80.6 – 207.0m	Gabbro with minor Mafic Granulite and Ultramafic		
207.0 – 603.5m	Mafic-Felsic Granulite with Metasediment		
459.3-472.9m	Pyrrhotite (2-3%) & graphite (+5%)		
503.0-514.4m	Pyrrhotite (3-5%), trace pentlandite (0.1%) & graphite (+5%)		
526.4-583.9m	Pyrrhotite (3-5%), trace chalcopyrite (0.1%) & graphite (+5%)		
592.9-597.7m	Graphite (5%)		
603.5 – 690.6m	Gabbro		
626.3-626.8m	Disseminated pyrrhotite/chalcopyrite/pentlandite ~2%		
661.0-661.35m	Disseminated pyrrhotite/chalcopyrite/pentlandite ~2%		
690.6 – 717.7m	Mafic Granulite		

# High Power EM System

The use of the high power EM method in all MLTEM, FLTEM and DHTEM surveying commissioned by Legend has been completed using industry leading technology (~150-200A, single turn) and greatly enhances the chances of detection and resolution of deeper bedrock conductors. From a surface EM perspective the high power method has clearly demonstrated the ability to detect/delineate conductors of moderate to large areal size at >500m depth, as evidenced by the drilling of Conductors D7 and D8 in RKDD002. There is little doubt that well planned and optimised high power EM surveys over prospective target areas are a primary exploration tool for the detection of significant sulphide ore bodies.



# Background - Area D

Figure 2 below shows the location of Area D within the Rockford Project overlain on an image of the regional gravity.

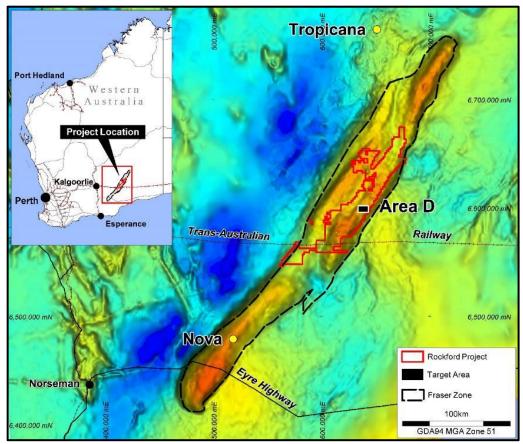


Figure 2: Area D within the Rockford Project on Regional Gravity

MLTEM surveying over a discrete gravity high at Area D in December 2015 identified five strong to moderate bedrock conductors D1-D5. Conductors D1, D2 and D4 were RC drill tested in February 2016. D1 was explained by 22m of graphite schist, D2 intersected a shallow graphitic unit but required further definition, and D4 was explained by a broad 44m zone of disseminated sulphide with up to 5% pyrrhotite/pyrite.

Follow-up FLTEM over D2 identified a second deeper strong feature (Conductor D6) with the following parameters; ~5,000-8,000S+ conductance, ~800x800m areal size, a moderate northerly dip ~35-55<sup>0</sup>, and estimated depth to top of source of ~200-250m. FLTEM over D5 was also completed resulting in the definition of Conductors D7 and D8. A summary of the modelled FLTEM conductors is provided in Table 4, while their locations are shown on Figure 1.

Table 4: Area D FLTEM Conductor Description				
Conductor	Conductance	Dimensions	Depth to Top	Plate Orientation
D6	~5,000-8,000S+	~800m x 800m	~200-250m	35-55 <sup>0</sup> N dip
D7	~6,000-8,000S+	~800m x 400m	~300-350m	35-50° W dip
D8	~3,000-4,000S+	~1,000m x 1,000m	~350-400m	20-40º E dip



### Next Phase of Work for Area D

- Select drill core intervals for assay/geochemical analysis.
- Select drill core samples for petrological analysis.
- Comprehensive review of all exploration results, including inversion modelling of the prospect, incorporating drilling, EM, detailed gravity (100m x 100m) and aeromagnetic data.

### Future Programmes

- Area D as above
- Infill gravity survey over the eastern portion of Rockford to assist with target selection.
- MLTEM surveying over selected magnetic/gravity features.
- Aircore drilling programme over same features as MLTEM surveys

### LEG ASX Announcement Clarification

On 14 June 2016 Legend released to the ASX an announcement entitled "Diamond Drilling Commences at Rockford Project, Fraser Range", without a Competent Person Statement. The Competent Person Statement for the 14 June 2016 release is the same as this announcement and is included below.

#### **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.

Visit www.legendmining.com.au for further information and announcements.

#### For more information:

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### Appendix 1: Legend Mining Limited - Rockford Project JORC Code Edition 2012: Table 1

#### Section 1: Sampling Techniques and Data

Criteria	Commentary
Sampling techniques	No drill core has been sampled to date.
	• It is envisaged that selected half core samples will be submitted
	for geochemical and petrological analysis, along with appropriate
	QAQC reference samples and duplicates.
	<ul> <li>It is envisaged that samples will be submitted to an independent commercial assay laboratory and analysed for; Au by fire assay</li> </ul>
	and a multi-element suite including Ag, Al, As, Ba, Be, Bi, Ca,
	Cd, Co, Cr, Cs, Cu, Fe, Ga, Ge, Hf, In, K, Li, Mg, Mn, Mo, Na,
	Nb, Ni, P, Pb, Rb, Re, S, Sb, Sc, Se, Sn, Sr, Ta, Te, Th, Ti, Tl, U,
	V, W, Y, Zn, Zr by ICP-OES/MS.
Drilling techniques	• Pre-collars to the top of saprock/fresh rock using the mud rotary
	technique were employed, followed by limited HQ diamond
	coring. The remainder of the hole was drilled with NQ2 diamond
	coring.
Drill sample recovery	No samples were recovered from the mud rotary drilling.
	<ul> <li>Drill core sample recoveries for the HQ and NQ2 core were</li> </ul>
Logging	recorded in drill log sheets.
Logging	<ul> <li>Geological logging of all drillholes included; lithology, grainsize, texture, deformation, mineralisation, alteration, veining, colour,</li> </ul>
	weathering. Drill core orientation was recorded when possible.
	<ul> <li>Logging is qualitative and based on drill core retained in core</li> </ul>
	trays.
	All drillholes were logged in their entirety.
Sub-sampling	Diamond drill core has been marked in preparation for possible
techniques and sample	sampling at a future date.
preparation	• It is envisaged that selected half core samples will be submitted
	for geochemical and petrological analysis, along with appropriate
	QAQC reference samples and duplicates.
	The size of the sample is considered appropriate for the minoralization style sought and an appropriate analytical
	mineralisation style sought and an appropriate analytical technique will been used.
Quality of assay data	<ul> <li>No samples have been submitted to date.</li> </ul>
and laboratory tests	
-	• Primary data was collected in the field using a set of standard
and assaying	logging templates and entered into a laptop computer. The data
	was forwarded to Legend's database manager for validation and
	loading into the company's drilling database.
	• No adjustments or calibrations have been made, as no samples
Leasting of data mainta	have been submitted for analysis.
Location of data points	<ul> <li>Diamond drillhole collars are surveyed with a handheld GPS unit with an accuracy of LEm which is considered sufficiently accurate</li> </ul>
	with an accuracy of ±5m which is considered sufficiently accurate for the purpose of the drillhole.
	<ul> <li>All co-ordinates are expressed in GDA94 datum, Zone 51.</li> <li>Regional topographic control has an accuracy of ±2m based on</li> </ul>
	detailed DTM data.
Data spacing and	• Drillhole spacing is not regular or grid based, with the location of
Data spacing and distribution	• Drillhole spacing is not regular or grid based, with the location of individual drillholes governed by targeting the position of



Criteria	Commentary		
	<ul> <li>No samples have been submitted to date.</li> </ul>		
Orientation of data in	Drillholes were planned to intersect modelled EM conductor		
relation to geological	plates perpendicular to strike.		
structure			
Sample security	<ul> <li>All diamond drill core has been removed from site and will be</li> </ul>		
	stored in an appropriate facility in Perth.		
	<ul> <li>No samples have been submitted to date.</li> </ul>		
Audits or reviews	<ul> <li>Internal audits/reviews of procedures are ongoing, however no</li> </ul>		
	external reviews have been undertaken.		

#### Section 2: Reporting of Exploration Results

Criteria	Commentary	
<i>Mineral tenement and land tenure status</i>	<ul> <li>The Rockford Project comprises seven granted tenements; E28/2188-2192 (70% Legend, 30% Rockford Minerals Pty Ltd JV), E28/1718 &amp; E28/1727 (70% Legend, 30% Ponton Minerals Pty Ltd JV).</li> <li>The Project is located 280km east of Kalgoorlie mostly on vacant crown land with the eastern portion on Kanandah Pastoral Station.</li> <li>There are no Native Title Claims over tenements E28/2188-2192. Tenements E28/1718 &amp; E28/1727 are covered 90% and 20% respectively by the Ngadju Native Title Claim.</li> </ul>	
Exploration done by other parties	<ul> <li>Not applicable, not referred to.</li> </ul>	
Geology	<ul> <li>The primary target is Nova style nickel-copper mineralisation hosted in high grade mafic granulites within the Fraser Complex.</li> <li>A secondary target is Tropicana style structurally controlled gold mineralisation.</li> </ul>	
Drill hole Information	Refer to table of collars in body of report.	
Data aggregation methods	<ul> <li>No samples have been submitted to date.</li> </ul>	
Relationship between mineralisation widths and intercept lengths Diagrams	<ul> <li>The diamond drill core has been oriented to enable future evaluation of true thicknesses of any mineralised intervals.</li> <li>All drillhole intervals are downhole lengths measured in metres.</li> <li>Project location and drillhole location maps have been included</li> </ul>	
	in the body of the report.	
Balanced reporting Other substantive exploration data	<ul> <li>All significant results are reported.</li> <li>Highpower EM Geophysical Services Pty Ltd completed high powered downhole electromagnetic (DHTEM) and fixed loop electromagnetic (FLTEM) surveying over the Rockford Project. DHTEM Details</li> <li>Loop Sizes: 350 x 400m and 500 x 500m, single turn</li> <li>Station Spacings: 5-20m primarily with limited 1-2m station detailing over target zones</li> <li>Transmitter: ORE HPTX (150-200 amps, single turn)</li> <li>Receiver: Crone PEM</li> <li>Sensor: Crone PEM Z and XY dB/dt DH probes</li> <li>Time base/freq.: 0.833Hz (300msec time base), ~1msec ramp FLTEM Details</li> <li>Loop Sizes: 600 x 575m and 450 x 400m, single turn</li> <li>Line/Station Spacing: 125m spaced lines with 75m stations</li> <li>Transmitter: ORE HPTX (150-200 amps - single turn)</li> </ul>	



Criteria	Commentary		
	Receiver: EMIT SMARTem24		
	<ul> <li>Sensor: EMIT SMARTfluxgate 3 component B field sensor</li> </ul>		
	• Time base/freq.: 0.5Hz (500msec time base), ~1.15msec ramp		
Further work	<ul> <li>Full evaluation of the diamond drilling programme and submission of selected drill core samples for geochemical and</li> </ul>		
	petrological analysis is planned.		