

ASX Announcement (ASX:AXE)

16 April 2018

Third Quarter Activities Report

For the three months ending 31 March 2018

All major projects progressing

- Draft Community Consultation Plan lodged for Eyre Peninsula Graphite Project.
 - The collaboration agreement with the University of Adelaide for the ARC Graphene Hub has been redefined to focus on carbon-based biosensors.
 - Biosensor research will seek to develop graphene-based materials for complex biosensing, potentially generating technologies and patents that have commercial applications in human health.
 - New clients pre-qualified for Carbon Allotropes' online graphene marketplace.
 - Metallurgical recoveries of >90% for cobalt, copper, manganese and nickel from Ketchowla drill samples.
 - Ketchowla test samples were extracted from K1, which is part of a larger mineralised +20km structure.
 - Blue Hills Airborne Electro-Magnetic (AEM) survey defined large high-quality copper targets, including two additional prospects (Legolas & Ygritte) which are under cover.
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Commenting on the third quarter activities Greg English, Executive Chairman of Archer Exploration, said, "The appointment of Dr Choucair as CEO, the grant of the Campoona Mining Lease and the acquisition of Carbon Allotropes has allowed us to develop our advanced materials business which forms a complementary part of our copper, cobalt and manganese exploration projects and has Archer well positioned for growth in the minerals and materials economy".

"The revised agreement with The University of Adelaide to target a high value, high growth market for innovative carbon-based technologies is the first step in our strategy to capture niche segments of the carbon-based material's market where we have potential competitive advantages as a vertically integrated participant" said Mr English.

"Overall the Blue Hills Copper AEM survey has been successful in identifying multiple large copper targets. The results of this survey when combined with the RC drill results and large soil anomaly gives Archer the confidence to proceed with drilling at Blue Hills. In addition, the results from the Ketchowla metallurgical test work are encouraging. To be able to achieve cobalt recoveries of up to 98.66% and manage recoveries of close to 100% greatly enhances the potential of Ketchowla" said Mr English

"Archer is well positioned to deliver on its advanced materials strategy and to continue to grow the copper, cobalt and manganese projects through active exploration" concluded Mr English.

Quarterly Activities to 31 March 2018

Archer Exploration Limited (ASX: AXE) (**Archer** or **Company**) is pleased to report on its activities for the three-month period ending 31 March 2018 (**Quarter**).

Advanced materials

Internationally recognised graphene and advanced materials expert, Dr Mohammad Choucair, commenced as Archer CEO in December 2017 and since his appointment Dr Choucair and the Archer team have been developing the Company's graphite, graphene and advanced materials business.

The Eyre Peninsula Graphite Project is a valuable asset that gives the Company access to a high-grade graphite resource that is capable of making high quality graphene. Following the grant of the Mining Lease by the South Australian Government last December, the environmental approvals process is now ongoing, with the Company recently lodging its draft Community Consultation Plan with the South Australian Government for review and approval.

Archer's vision is to build a long term and viable mineral and materials development business focussing on the key areas related to reliable energy, human health and quantum technologies. These three themes were targeted as they have associated industries with exponential growth opportunities. Archer's in-house expertise provides an opportunity for it to quickly develop and integrate materials-centric solutions with the potential for positive global impact.

Graphene-based materials development

During the Quarter, the collaboration agreement between Archer and The University of Adelaide for the Australian Research Council Research Hub for Graphene Enabled Industry Transformation was varied. The new collaboration project will seek to develop and implement graphene and carbon-based materials for use in complex biosensing targeting applications in human health.

The research will have the aim of producing technological advances utilising Archer's graphite and graphene materials and the R&D capability of The University of Adelaide. The research directly aligns with Archer's vision of developing and integrating advanced materials, specifically in the focus area of human health.

The primary focus of the collaboration is on developing generic biosensors capable of addressing the largest market segment being medical testing, for the detection of cholesterol, blood glucose, blood gases, pregnancy, infectious diseases and drugs.

Biosensors have targeted applications servicing various market segments including:

- Medical testing
- Food toxicity
- Industrial processes
- Environmental and agricultural testing

Archer's participation in the development of materials for use in carbon-based biosensors will provide future opportunities and new markets to underpin further development of Archer's substantial graphite resources.

Eyre Peninsula Graphite Project

On 8 December 2017, Archer announced that the South Australian Government had granted to Pirie Resources Pty Ltd (Pirie), a wholly owned subsidiary of Archer, a mining lease and two associated miscellaneous purposes licences for the Eyre Peninsula Graphite Project (EPGP). The mining lease allows, subject to the grant of all remaining environmental approvals, the mining of approximately 10,000 tonnes per annum (tpa) of ultra-high-quality graphite and up to 100 tpa of graphene.

The next stage in the development of the EPGP is for Archer to complete a program for environment protection and rehabilitation (PEPR) and gain all other outstanding approvals before mining activities can commence. As part of this process, Archer has lodged a draft Community Consultation Plan with the South Australian Government.

Carbon Allotropes

Following the appointment of Dr Choucair, Archer has been rapidly developing a reputation in the advanced materials and graphene market for excellence and has been attracting a growing number of unsolicited approaches for participation in joint development projects.

Over the last three months Archer has progressed agreements with large institutions that are nearing finalisation, and the team has been working in parallel to address value addition and creation with our substantial graphite and graphene resources, for example:

- Over 150 new customers have been pre-qualified for graphene sales and collaborations on the Carbon Allotropes marketplace, and
- Archer has been fielding inquiries from prospective business partners from Australia and Europe.

Through the online presence and activity of the Carbon Allotropes marketplace, Archer has improved its positioning in the greater materials economy, and as a result the advanced materials business is taking shape and is poised for growth.

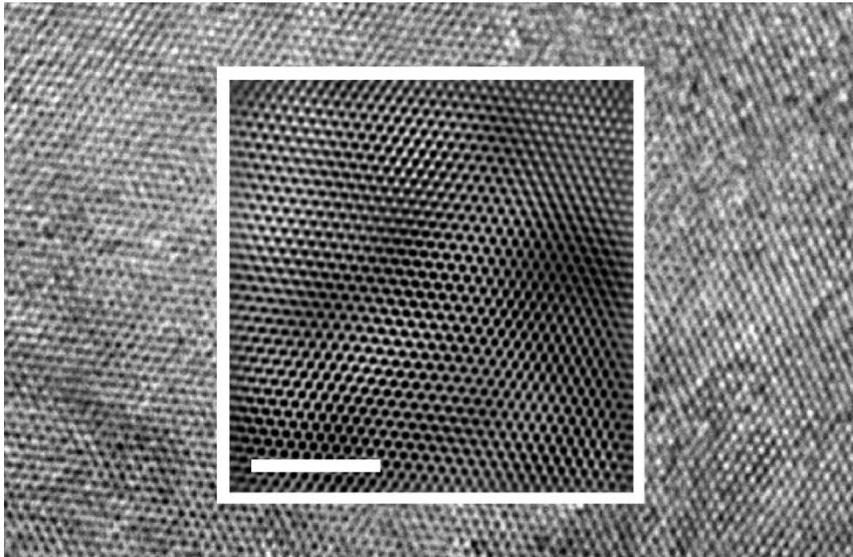


Figure 1. An enhanced high-resolution image of Archer's Campoona graphite taken using a JEOL3000F transmission electron microscope showing a highly defined, intricate and periodic honeycomb structure constituting the graphite material. Scale bar represents 2 nm.

Exploration

Blue Hills Copper

The Blue Hills Copper Prospect is a large copper anomaly covering an area of 25km², located approximately 40km north of Burra, South Australia. During the Quarter, Archer completed a 373-line km airborne electro-magnetic survey (AEM) at Blue Hills to identify drill targets.

On 15 February 2018, Archer reported the results from the initial interpretation of the AEM data which highlighted a number of basement conductors that are considered prospective for intrusion related sedimentary hosted copper-gold mineralisation. Some of these are co-incident with previously reported soil anomalies (Hood, Hawkeye and Katniss). Additionally, a number of large, conductive targets (Legolas & Ygritte) were identified by the new AEM survey within the Blue Hills area. These are located to the east of the soil anomalies and are under cover.



Figures 2 and 3: Geosolutions TDEM survey equipment at Blue Hills.

The results from the final processing of the AEM data were released on 9 March 2018 and confirmed the presence of four high priority targets for follow up by Archer (Figure 4).

High Priority Target 1

This target is located on the northern extension of the Hood prospect and is 600m long. The target is classified as a strong deep conductor near an area of high copper in soil concentration.

High Priority Target 2

This target is also located proximal to the Hood prospect and extends over a distance of 900m. The target area represents a broad, strong conductive region close to a magnetic high. This is classified as a strong and deep conductor consistent with an intrusive style deposit.

High Priority Target 3

The target area is located between Hood and Hawkeye prospects and close to the 2017 RC drilling that led to the discovery of copper at Blue Hills. Whilst this conductor is weaker than High Priority Targets 1 and 2, the location of High Priority Target 3 is encouraging as the results of the AEM survey confirm the earlier RC drill results. This conductor may be located on the boundary of different geological units with elevated copper concentrations.

High Priority Target 4

High priority target 4 is located on the southern extension of the Hawkeye Prospect and with a length of 1.2km, is the largest of the four High Priority Targets. The conductor modelled is coincident with high copper in soil concentrations and is associated with an early-late EM response. This target, similar to High Priority Target 3, appears to be located at a possible interface between different geological units.

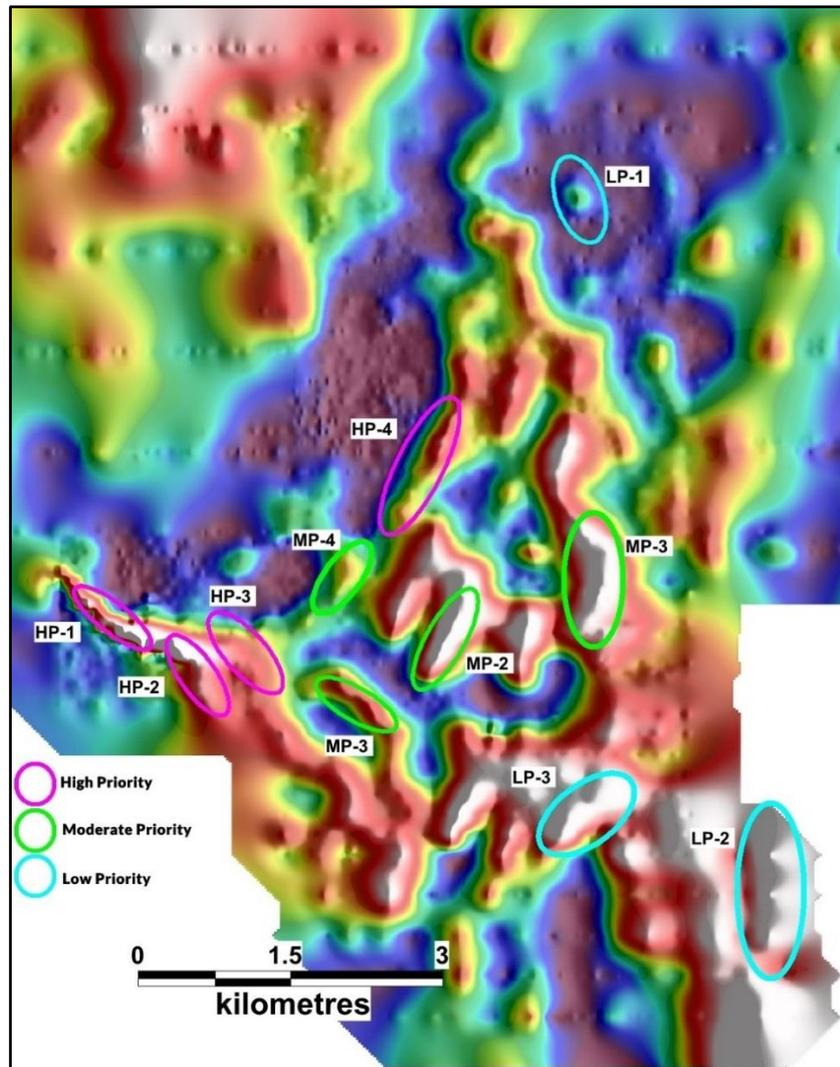


Figure 4: AEM depth slice (100m) showing location of priority targets.

Other targets

In addition to the four High Priority Targets, a new target was modelled on the western extent of the Katniss soil anomaly. Also, a large area of conductivity was modelled to the north west of the main project area. This new area has been explored for diamonds by previous explorers, given the presence of kimberlites. This area will be reviewed at a later date as a number of conductive targets that are not associated with magnetic highs (kimberlites) are present and could be possible sulphide targets.

The newly discovered Ygritte and Legolas Prospects and parts of the four High Priority Targets are under shallow transported cover. In the coming weeks Archer will use rotary air blast drilling (RAB) to test the level of copper mineralisation below the shallow soils. The results of this drilling will be used to identify future drill targets.

North Broken Hill Cobalt Project

Background

The North Broken Hill Project (Figure 5) is located approximately 20km north of Broken Hill, New South Wales and is situated along strike from Cobalt Blue Ltd's (ASX:COB) Thackaringa Cobalt Project. The North Broken Hill tenements collectively cover a large area of approximately 450km² and early exploration work has focussed on visiting previously identified cobalt outcrops and the discovery of new regional cobalt, copper and gold targets.

Exploration to date at North Broken Hill has been highly successful with Archer identifying four large targets areas at Purnamoota, Himalaya, Yancowinna and Golden King West (Figure 5).

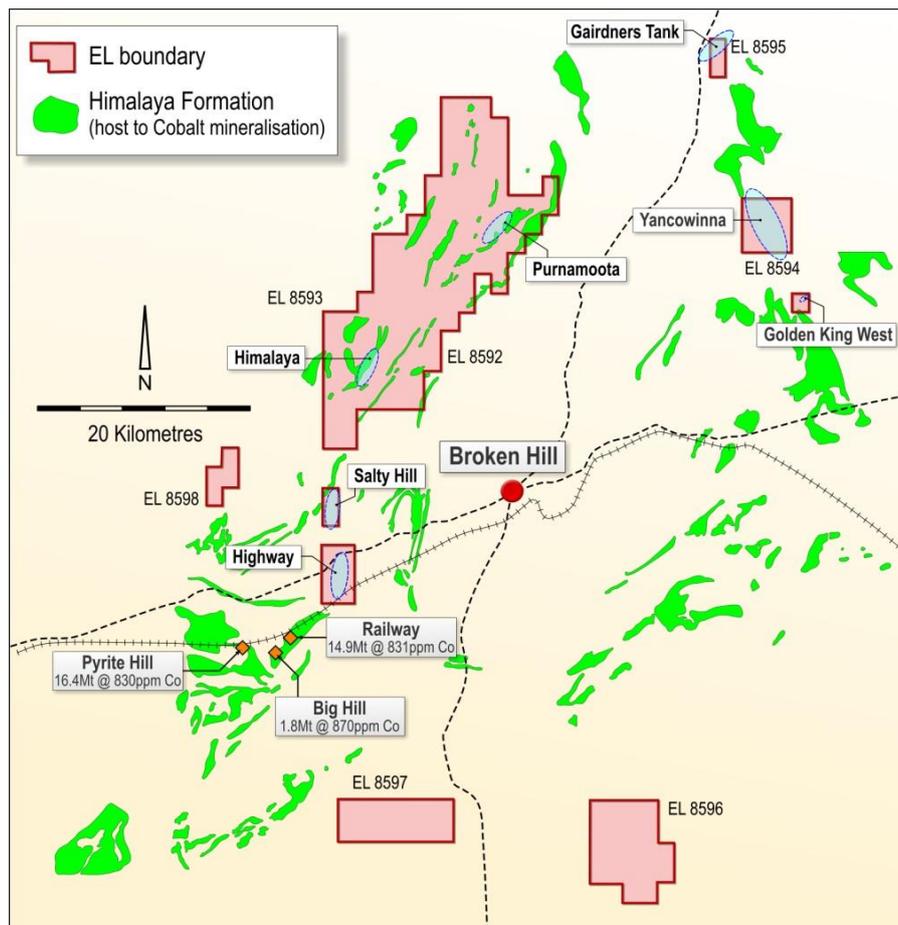


Figure 5: Location of reconnaissance targets within the Broken Hill tenements.

In late 2017, Archer engaged a consultant geologist to review the North Broken Hill project tenements. Site visits were completed just before the end of December with the final report received in February 2018. The report summarised the prospectivity of the area and will form the basis of Archer's future exploration efforts.

Archer's primary focus has been on developing the Blue Hills Copper Project and preparing the area for drilling. As a result, no on ground exploration was undertaken at North Broken Hill during the Quarter however, the Company intends to actively explore the area in the coming months. Archer still believes in the strong potential of the North Broken Hill Project and intends to undertake on ground exploration activities once the drilling at Blue Hills is completed.

Yarcowie Cobalt Project

The Yarcowie Project is located approximately 20km east of the Tesla 100MW battery array at Jamestown, South Australia. The Yarcowie tenement area crosses the Barrier Highway and is within close proximity to existing rail, power, gas and other significant infrastructure.

Yarcowie, like North Broken Hill, was also the subject of a review by the consultant geologist with the final report also delivered in February 2018. No exploration was undertaken on this tenement during the Quarter, due to the focus on future drilling at Blue Hills.

Ketchowla Manganese Project

The Ketchowla Cobalt Manganese Project is located approximately 45km north of Burra, South Australia. Ketchowla is an outcropping fold structure that has been mapped over 20km and comprises the K1 to K9 prospects. Drilling by Archer in 2017 at K1 intersected near surface copper, cobalt and manganese mineralisation.

During the Quarter Archer submitted manganese samples from each of Jamieson Tank (Eyre Peninsula) and Ketchowla for metallurgical test work to determine the ability to be able to extract manganese, cobalt other minerals from the samples.

In mid-2017 Archer completed a successful RC drill program at K1 and K2. A 3m composite from K1 (hole K1RC1700, 8m to 11m) was submitted for metallurgical testing to determine whether or not the manganese, cobalt, copper and other metals could be recovered. The test work was undertaken in two stages:

- Stage 1: desliming (removal of clays) and gravity separation to make a concentrate that could then be leached. Initial testing was performed by hand panning the sample to displace slimes and to separate the minerals. The repeated panning process, with intermediate milling, resulted in a 25% - 35% increase in the manganese and base metal grades at a recovery of 60 - 70%.
- Stage 2: leaching of the concentrate, using sulphuric acid and sulphur dioxide (to control the pH), to recover the cobalt, manganese and other metals.

The introduction of sulphur dioxide and the lowering of the pH led to a significant levels of metal recovery, up to 99.39% Mn (Ket#3) and 98.66% Co (Ket#3), when compared to baseline tests.

Test #	Operating conditions						Leaching efficiency				
	Particle size (µm)	Target pH	Temp (°C)	Reducing agent (g)	Acid Consum (t/t ore)	SO ₂ Consum (t/t ore)	Mn (%)	Fe (%)	Co (%)	Cu (%)	Ni (%)
Ket#1	150	n/a	20	n/a	0.21	0.00	1.30	2.23	2.02	4.59	2.59
Ket#2	150	2	20	SO ₂	0.16	0.63	92.30	15.12	75.67	71.37	64.05
Ket#3	150	1	40	SO ₂	0.27	0.47	99.39	17.86	98.66	87.92	92.26
Ket#4	150	3	40	SO ₂	0.05	0.68	96.58	11.80	93.50	4.74	80.14
Ket#5	403	3	40	SO ₂	0.08	0.45	74.58	7.80	56.10	32.40	42.18
Ket#6	403	1	40	SO ₂	0.40	0.24	98.28	36.63	98.58	91.27	96.77

Table 1. Results of various leaching tests undertaken on Ketchowla material.

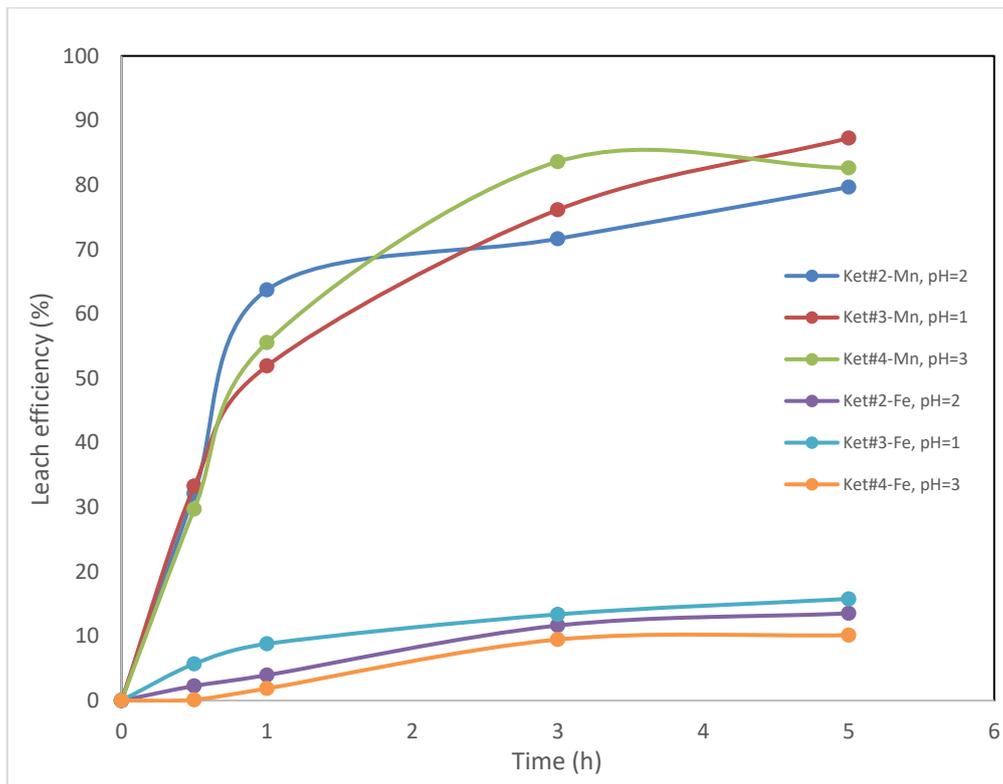


Figure 6: Effect of pH on the Extraction of Metals for Sample Ket (Ket#2, Ket#3 and Ket#4)

The leaching of the manganese and base metals takes place over a short period of time which makes the leach process more efficient. The graph below shows the leaching performance from pH 1 to pH 3 using 0.2M H₂SO₄.

The exceptional test results of the metallurgical test work demonstrate the potential for a simple acid leaching process to extract manganese, cobalt, nickel and copper. The manganese extractions achieved close to 100%, and at pH 1, more than 96% of cobalt and nickel were extracted, along with 91% of the copper.

Leigh Creek Magnesite Project

Archer's Leigh Creek Magnesite Project (Magnesia Project) hosts the world's largest cryptocrystalline magnesite deposits. World magnesite prices have been increasing and there has been increased interest in the Magnesite Project.

Archer is continuing discussions with potential toll processors and is also reviewing all options for the commercialisation of the Magnesite Project. Options being considered include: toll processing of magnesite and divestment of some or all of the project.

Other Projects

No work was undertaken during the Quarter at Beltana, Yanyarrie or on Archer's other project areas not mentioned in this report.

Corporate

Cash balance

The Company's cash balance at the end of the Quarter was \$2,930,000.

General meetings

The Company held a General Meeting of shareholders at 10:00am (Adelaide time) on Wednesday, 24 January 2018 for the purpose of ratifying the issue of the SPP Options. This resolution was approved by shareholders.

Share Purchase Plan

In late 2017, Archer completed a Share Purchase Plan (SPP) whereby eligible shareholders were offered the opportunity to apply for new shares at a price of \$0.075 per new shares. Shareholders who were allotted shares under the SPP were also eligible to apply for free options (SPP Options) for every two shares allotted under the SPP. The SPP Options have an exercise price of \$0.075 and expiry date of 28 February 2019.

The SPP Options offer was closed on 12 January 2018, with Archer receiving applications for 18,639,125 SPP Options which were then allotted to shareholders on 22 January 2018.

Issued Capital

Time	Shares on issue	Options on issue	Performance Rights on issue
Start of Quarter	177,194,682	5,000,000 ⁽¹⁾ (Rix Options)	4,500,000
New issues during Quarter	2,625,143 ⁽²⁾	18,639,125 ⁽³⁾ (SPP Options)	Nil
Exercised/cancelled during the Quarter	Nil	(2,625,143) ⁽²⁾	Nil
End of Quarter	179,819,825	5,000,000 (Rix Options) 16,013,982 (SPP Options)	4,500,000
On issue at 16 April 2018	180,448,184	5,000,000 (Rix Options) 15,385,623 (SPP Options)	4,500,000

Notes

- (1) Options issued to Paul Rix, a director, exercise price of \$0.15, expiry date of 31 January 2019 and subject to satisfaction of certain vesting conditions.
- (2) Ordinary shares issued upon the exercise of 2,625,143 SPP Options.
- (3) SPP Options were allotted on 22/01/18.

For further information, please contact:

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Competent Person Statement

The exploration results reported herein, insofar as they relate to mineralisation, are based on information compiled by Mr. Wade Bollenhagen, Exploration Manager who is an employee of Archer Exploration Limited.

Mr. Bollenhagen is a Member of the Australasian Institute of Mining and Metallurgy who has more than twenty years' experience in the field of activity being reported. Mr Bollenhagen has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity that he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" relating to the reporting of Exploration Results. Mr. Bollenhagen consents to the inclusion in the report of matters based on his information in the form and context in which it appears.

List of Archer tenements

Tenement	Location	Commodity
South Australia		
EL 5920	Carappee Hill	Graphite
EL 5804 ⁽¹⁾	Wildhorse Plains	Graphite
EL 5815	Waddikee	Graphite
EL 5383	Mt Messenger	Graphite
EL 5791	Cockabidnie	Graphite
EL 5434	North Cowell	Graphite
EL 6019	Witchelina	Magnesite
EL 5730	Termination Hill	Magnesite
EL 5433	Burra North	Base Metals
EL 5794	Blue Hills	Copper / Gold
EL 5769	Napoleons Hat	Copper / Gold
EL 4869	Beltana	Barite
PELA 567	Beltana	Petroleum
EL 5870	Carpie Puntha	Graphite
EL 5909	Yanyarrie	Barite
EL 5935	Whyte Yarcowie	Cobalt / Copper
EL 6000	Pine Creek	Copper / Gold
EL 6029	Altimeter	Copper / Gold
ML 6470	Campoona Shaft	Graphite mining
MPL 150	Sugarloaf	Graphite and graphene processing
MPL 151	Pindari	Process water for Sugarloaf
New South Wales		
EL 8592	Morris's Blow	Cobalt / Copper
EL 8593	Broken Hill	Cobalt / Copper
EL 8594	Broken Hill	Cobalt / Copper
EL 8595	Broken Hill	Cobalt / Copper
EL 8596	Kanbarra	Cobalt / Copper
EL 8597	Kanbarra	Cobalt / Copper
EL 8598	Kanbarra	Cobalt / Copper
Tenements relinquished during, or after end, of Quarter		
EL 5540	Spring Creek	Copper

- (1) All tenements are 100% held by wholly owned subsidiaries of Archer, except for EL 5804 where Archer has the right to explore for all minerals except for uranium.