ARCHER

ABN 64 123 993 233

ASX Announcement 30 January 2017

Second Quarter Activities Report

For the three months ending 31 December 2016

Major projects progressing with cobalt upside

- Mining Lease Application lodged for Campoona Shaft graphite deposit.
- Magnesite test work completed by CSIRO.
- Successful completion of magnesite processing bulk trial - dead burn and caustic calcine magnesia products currently being tested.
- $200,000 SA Government grant received for Leigh Creek Magnesite Project.
- Leigh Creek magnesite remains the key primary focus to produce near term cash flow following successful bulk trial.
- Additional cobalt tenements acquired and further work is being undertaken on existing cobalt assets within the exploration portfolio.
- Retirement of Tom Phillips AM as a non-executive director

Commenting on the second quarter activities Greg English, Executive Chairman of Archer Exploration, said, "The application for a Mining Lease (MLA) at Campoona Shaft was a very significant milestone for Archer and signals the Company's commitment to continue with the commercial development of the very high grade graphite at the Campoona Shaft deposit"

"Archer has actively engaged in a community consultation process and completed a series of comprehensive reports and studies that support the MLA. We are very proud of the quality of the work we have completed and of the lodgement of the MLA."

With respect to the Leigh Creek magnesite project Mr English said, "The 300 tonne magnesite bulk trial was also successfully completed in late November with the caustic calcined and dead burn magnesia products to be delivered to end users for product testing. The bulk trial proved that dead burn magnesia can be made at temperatures of about 1500^{o} Celsius in an established rotary kiln and was a key step forward in the commercialisation of the project".

Mr English also commented, "Over the past few months we have assessed historical drill and exploration data and have identified some high grade cobalt mineralisation on our existing tenements. We have also acquired some additional tenements that have cobalt potential."

"In early November Tom Phillips AM announced his retirement as a director. On behalf of the Board and all current and former staff, I would like to pay special tribute to Tom and thank him for his commitment to Archer over the past 10 years and we wish him well in his retirement". Mr English concluded.

Quarterly Activities to 31 December 2016

Archer Exploration Limited (ASX: AXE) (**Archer** or **Company**) is pleased to report on its activities for the three-month period ending 31 December 2016 (**Quarter**).

Eyre Peninsula Graphite Project

Archer's Eyre Peninsula Graphite Project is located near the township of Cleve which is approximately 120km south east of Whyalla, South Australia. The Eyre Peninsula Graphite Project tenement area covers more than 2,700 km^2.

<u>Campoona Mining Lease Proposal</u>

After three years of community consultation, studies and detailed work, Archer completed and lodged with Department of State Development:

- An application for a Mining Lease over the Campoona Shaft graphite project area; and

- Applications for Miscellaneous Purposes Licences (MPL) for the Sugarloaf Graphite Processing Facility and Pindari Borefield and Pipeline.

The decision to proceed with a Mining Lease Application follows the completion of a high level Scoping Study (refer to ASX announcement dated 19 September 2016) that supported Archer's future development of the broader Eyre Peninsula Graphite Project.

The Mining Lease Application (MLA) covers an area of approximately 68ha and includes the Campoona Shaft graphite deposit – one of several such advanced deposits within the Company's broader Eyre Peninsula graphite project. The MLA, Archer's first for this project, is accompanied with applications for miscellaneous purposes licences for associated graphite processing infrastructure at nearby Sugarloaf, including treatment plant, site office, power station, workshop, water supply and tailings storage facility.

Archer's proposed graphite mining and processing operations include:

- Small open pit mining operation at Campoona of up to 140,000tpa of ore. Mining will be mostly free dig for the first 70 metres with operations planned for day shift only.

- The graphite will be processed at the Sugarloaf Processing Facility (located approximately 15km west of the Campoona Mine) using a conventional flotation circuit. The graphite will be upgraded on site at the Company's Carbon Upgrade Facility.

- At Sugarloaf: saline process water to be sourced from the Pindari Borefield (approximately 10km north of the processing plant), potable water will be supplied by SA Water and electricity will be supplied via a new 4.75km powerline to the existing 11kV electricity line to the west of Sugarloaf.

The statutory public consultation period for the MLA and MPLs is expected to commence in February 2017 with Archer hopeful of having all licences and leases granted by mid-2017.

Figure 1: Location of Campoona MLA (green), Sugarloaf Graphite Processing Facility MPL (red) and Pindari Borefield and Pipeline MPL (orange)

<u>Sugarloaf</u>

Previous testing has shown Sugarloaf carbon when added to soils improves soil wettability and aids moisture retention. Archer has previously announced (refer to September 2016 Quarterly Report) that the company was expecting to undertake wettability test work for the Sugarloaf carbon sometime in 2017. At this stage, Archer does not intend to undertake any further Sugarloaf test work as the Company is currently focussed on:

- Development of the Leigh Creek Magnesite Project.
- Progressing the Campoona MLA and MPLs to grant.
- Exploration of the Company's high grade cobalt projects.

Graphene and graphite marketing

The Company continues to identify opportunities to engage with different industry participants regarding possible future graphene research and in particular the use of Archer graphite in graphene manufacture. Archer will continue to look for opportunities to work with industry participants to identify commercial applications for Archer graphite and graphene production.

Leigh Creek Magnesite Project

CSIRO test work

The Leigh Creek Magnesite resource is the world's largest cryptocrystalline deposit and contains characteristics that make it ideal for the manufacture of caustic calcined magnesia (CCM) and monolithic dead burn magnesia (MDBM).

The Leigh Creek Magnesite Project (Project) business plan is based on Archer toll processing magnesite in third part rotary kilns to make CCM and MDBM products for sale to domestic and international customers. The current configuration of these rotary kilns means that they operate at maximum temperatures of about 1,550 –1,650^{o} Celsius.

In the September quarter Archer engaged CSIRO to undertake the following testing and analysis of the Leigh Creek magnesite:

- Calcining of magnesite to make MDBM at different temperatures (1450^{o}, 1550^{o} and 1650^{o} Celsius).
- Compare the Leigh Creek MDBM product against commercially available MDBM products.

The CSIRO test work was completed during the Quarter (refer to ASX announcements dated 04/10/16 and 17/11/16). The magnesite was roasted in an air heated muffle furnace at the temperature ranges stated above. The furnace was held at these temperatures for one and two hour periods. This test work showed that MDBM could be made at each of the different temperatures.

Figure 2: Removing crucibles from the furnace

Figure 3: Heat 8, crucibles cooling

Additional hydration and density test work was undertaken by CSIRO and independent laboratories which showed that the Archer MDBM has certain advantages over the commercially available MDBM product, namely lower density and better hydration resistance.

In addition to the CSIRO test work a South Australian based rotary kiln operator undertook independent Leigh Creek magnesite test work. A 5kg magnesite sample was given to the kiln operator who then calcined the magnesite to make a caustic calcined magnesia product (CCM).

The positive results from the CSIRO test work gave Archer the confidence to proceed with a bulk calcining trial using an industrial kiln in South Australia. The results from the CSIRO test work were used to refine the parameters for the bulk trial.

Successful bulk trial

During the Quarter Archer completed a 300 tonne bulk trial at OneSteel's Whyalla Steelworks (refer to ASX announcements dated 08/11/16, 22/11/16 and 05/12/16). The purpose of the trial was to:

- Calcine the magnesite to make MDBM which Archer could give to prospective customers for testing.

- Manufacture of CCM for use by OneSteel in the steel making process.

Magnesite ore was mined at Leigh Creek and initially stockpiled in Adelaide in preparation for the trial. The magnesite ore was transported to Whyalla for crushing (6mm – 20mm) and then despatched to the Whyalla Steelworks for calcining.

Figure 4: Magnesite stockpile (Adelaide)

Figure 5: Loading of magnesite for transport

Archer completed the bulk trial during the period 28 – 30 November 2016 with visual inspection showing that MDBM was made during the calcining process.

Figure 6: Photos of Archer deadburn magnesia product made during bulk trial

Cobalt Projects

Archer Exploration Limited has previously announced the execution of a farmin and joint venture with Cobalt Bull Pty Ltd whereby Cobalt Bull could earn a 75% interest in certain tenements which are prospective for cobalt (refer to ASX announcement dated on 31 August 2016). This joint venture is progressing and remains subject to the final condition precedent being satisfied by 31 January 2017 (refer to ASX announcement dated 05/12/16).

Apart from Ketchowla, little significance had historically been placed on cobalt as an associated metal within these deposits and cobalt had not been analysed during drill testing at some prospects. As part of ongoing project development, a review of previous explorers' data has been undertaken. Sample sites including historical drilling have been identified for cobalt mineralisation that requires follow up.

Significant cobalt results reported by Archer include:

- , rock chip sampling at Ketchowla identified **cobalt up to 0.59%** and manganese up to 48% (ASX announcement 17/01/16).

- shallow significant cobalt was intercepted near surface from drilling completed by Archer at Ketchowla in 2010 with best results showing **11m** @ **0.11% Co** and 12%Mn from 6 to 17m; including **4m** @ **0.14% Co** and 15.6% Mn (ASX announcement 17/01/16).

- Cobalt was intersected by previous explorers during exploration at Cockabidnie, with best result to date of 8m @ 0.2% cobalt from 30m to 38m (ASX announcement 23 January 2017)

Since announcing the agreement with Cobalt Bull, Archer has received numerous enquiries regarding the cobalt potential of the Company's tenements and as a result Archer has applied for additional tenements which are highly prospective for cobalt (refer to ASX announcement dated 20 December 2016).

The newly acquired cobalt tenements are highly prospective for cobalt mineralisation, complimenting the existing Cobalt portfolio and greatly increase the size of the Cobalt Project footprint. Archer's Cobalt Project has several favourable characteristics for further exploration success including multiple cobalt drill intercepts at shallow depths.

Existing tenements within the larger Cobalt Project area host numerous cobalt prospective targets including Jamieson Tank, Polinga, Hodgins, Salt Creek as well as Ketchowla (under JV with Cobalt Bull Pty Ltd).

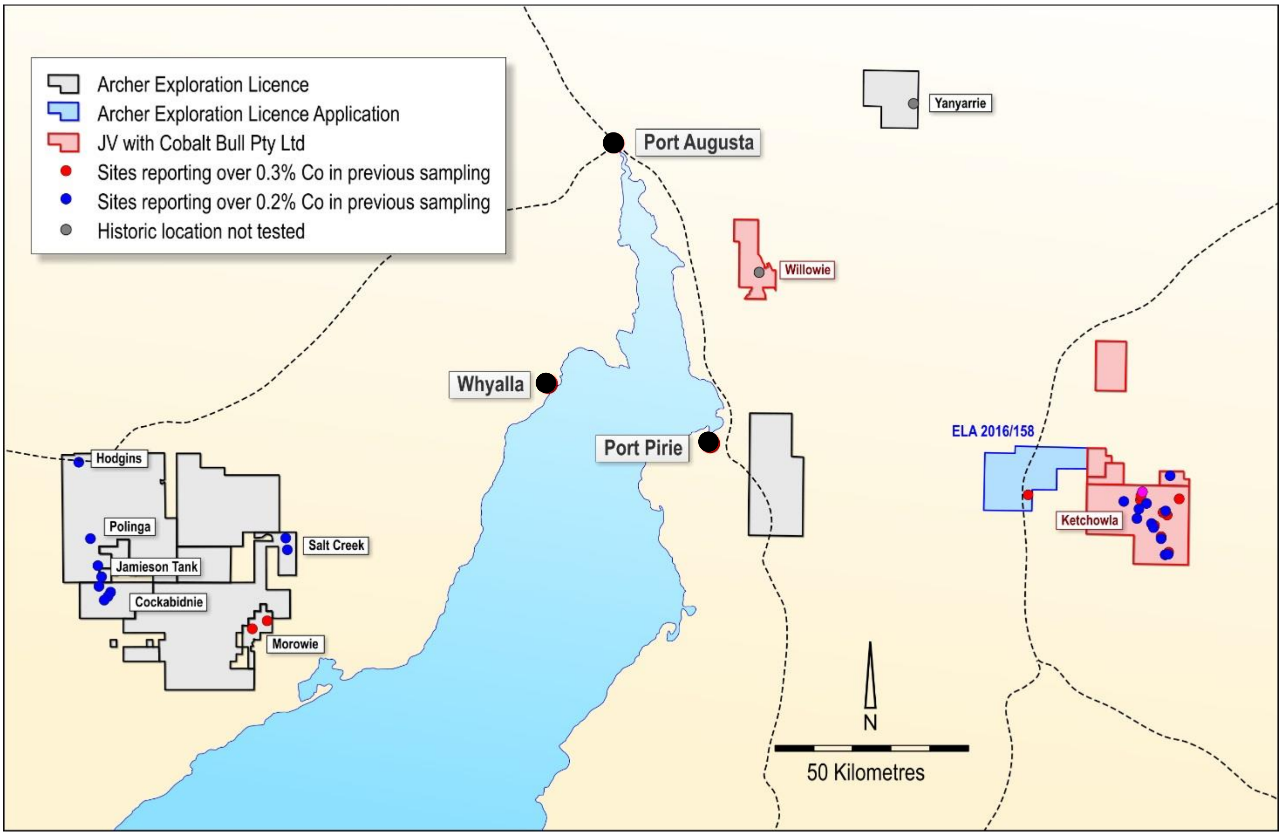

Figure 7: Location of Archer cobalt prospects

Corporate

Retirement of director – Tom Phillips AM

Tom Phillips AM announced his retirement from the Board of Archer on 1 November 2016 with the effective date of the retirement being 31 December 2016 (refer to ASX announcements dated 01/11/16 and 03/01/17). Tom retired from Archer for personal reasons.

Mr Phillips served as a Non-Executive Director of Archer for more than 10 years and was the Company's foundation Chairman. Tom oversaw the initial ASX listing of Archer and brought extensive business experience to the Board and provided both the Board and management with valuable guidance and assistance.

As of 01/01/17 the directors of Archer are Greg English (Executive Chairman), Alice McCleary (Non-Executive Director) and Paul Rix (Non-Executive Director).

Shareholder meetings

During the Quarter, Archer hosted presentations for Archer shareholders in Perth, Melbourne and Sydney. The events were well attended and are part of Archer's ongoing investor relations and shareholder engagement activities. Similar presentations are planned for 2017.

AGM approval to issue shares

At the Company's AGM held on 28 October 2016 shareholders approved the issue of up to 20,000,000 new Archer shares for the purpose of raising capital to fund future exploration and development activities. The approval is only valid for 3 months (until 28 January 2017). The Board does not intend to issue any new shares under this facility before expiry of the 3 month period but will rely on the ability to raise funds in the future by the issue new shares under Listing Rule 7.1 and 7.1A.

Issued Capital

Time	Shares on issue	Options on issue	Performance Rights on issue
Start of Quarter	110,194,306	22,177,944 (SPP Options) [(1)] 5,000,000 (Rix Options) [(2)]	Nil
End of Quarter	110,194,306	22,177,944 (SPP Options) 5,000,000 (Rix Options)	2,700,000 [(3)]
30 January 2017	110,194,306	22,177,944 (SPP Options) 5,000,000 (Rix Options)	2,700,000

Notes

(1) Unlisted options with an exercise price of $0.12 and expiry date of 30 June 2017.

(2) 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.

(3) Performance Rights issued to Archer directors and management subsequent to shareholder approval granted at 2016 AGM.

Cash balance

The Company's cash balance on 31 December 2016 was $612,000.

List of Archer tenements

Tenement	Location	Commodity
EL 4861	Carappee Hill	Graphite
EL 5804 (1)	Wildhorse Plains	Graphite
EL 5815	Waddikee	Graphite
EL 5383	Mt Messenger	Graphite
EL 4893	Cleve West	Graphite
EL 5791	Cockabidnie	Graphite
EL 5434	North Cowell	Graphite/Copper
EL 4729	Witchelina	Magnesite
EL 5730	Termination Hill	Magnesite
EL 5553	Collaby Hill	Magnesite
EL 5540 (2)	Spring Creek	Copper
EL 5433 (2)	Burra North	Manganese
EL 5794 (2)	Blue Hills	Gold & Copper
EL 5769	Napoleons Hat	Gold & Copper
EL 4869	Ediacara	Barite
PELA 567	Ediacara	Coal / gas
MC 4393	Campoona	Graphite
Tenements granted during, or after end, of Quarter		
EL 5870	Carpie Puntha	Graphite
EL 5909	Yanyarri	Cobalt

Notes

All tenements are located in South Australia and are 100% held by wholly owned subsidiaries of Archer, except for:

(1) EL 5084: Archer has the right to explore for all minerals except for uranium.

(2) EL 5540, 5433 and 5794: tenements are subject to the farmin joint venture agreement with Cobalt Bull Pty Ltd (CB) whereby CB can earn a 75% interest in the tenements. Current interests are Archer 100% and CB 0%.

For further information, please contact:

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Competent Person Statement

<u>Exploration Results</u>

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.

<u>Scoping Study</u>

Archer confirms that all material assumptions underpinning the production target and financial information set out in the ASX announcement entitled "*Positive results from SA Graphite Project scoping study*", lodged with ASX on 19 September 2016 (**Scoping Study**) continue to apply and have not materially changed.

The Company confirms it is not aware of any new information or data that materially affects the information included in the original market announcements referred to above and, in the case of estimates of Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.