ASX Announcement (**ASX:AXE**) 12 February 2018

Exceptional cobalt, manganese and copper recovery at Ketchowla

Highlights

- Metallurgical recoveries of > 90% for cobalt, copper, manganese and nickel from Ketchowla drill samples, including recoveries of:
    - up to 98.66% cobalt
    - up to 99.39% manganese
    - up to 91.27% copper
- Sulphuric acid test work was successful in recovering cobalt, manganese, copper and other metals.
- Sulphuric acid leaching at atmospheric pressure and ambient temperature appears to have considerable potential at Ketchowla.
- Samples tested were extracted from K1, which is part of a larger mineralised +20km structure at Ketchowla.

Archer Exploration Limited (ASX: AXE) is pleased to announce outstanding results from recent metallurgical test work conducted on drill sample sourced the Company's 100% owned Ketchowla Cobalt Manganese Project (located near Burra, South Australia). The latest positive metallurgical test and the results from Archer's earlier drilling, confirm the potential for Ketchowla to host a significant cobalt and manganese deposit.

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.
- Stage 2: leaching of the concentrate, using sulphuric acid and sulphur dioxide (to control the pH), to recover the cobalt, manganese and other metals.

Archer's Executive Chairman, Greg English said "the results from the Ketchowla metallurgical test work are encouraging. To be able to achieve cobalt recoveries of up to

98.66% and manages recoveries of close to 100% greatly enhances the potential of Ketchowla."

"The leaching was undertaken using standard mineral processing techniques without the need for Archer to develop new processes. The ability to use "off the shelf" technology significantly de-risks the project" said Mr English.

<u>Stage 1 test work</u>

The aim of this laboratory test work was to determine if the sample collected from drilling at K1 in mid-2017 could be upgraded using desliming (removal of clays) and gravity separation as an initial approach.

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%.

The manganese enrichment process results reported strong geochemical associations between base metals copper, zinc, nickel and cobalt suggesting that these base metals are associated with the manganese.

It is also interesting to note that the tailings displayed a strong geochemical association between aluminium and scandium. It appears that scandium levels were relatively high in the tailings, but no work was undertaken to explore this further.

Figure 1: Ketchowla upgraded sample prior to leaching at Kemetco

<u>Stage 2 test work</u>

An upgraded concentrate sample from the panning work completed in Stage 1 was sent to Kemetco (Vancouver, BC) for further testing, using acid leaching to liberate the manganese, cobalt and other base metals.

The Ketchowla sample was wet-ground in the laboratory rod mill to a size of 83% passing 150 microns. The sample was then split into six separate sub-samples (Ket#1 to Ket#6). A systematic leach program was then carried to determine the impact of various factors, such as acid concentration, leach time, pH and particle size (refer to Table 1 below). The initial baseline test was conducted with sulfuric acid alone and showed low levels of recovery.

The introduction of sulphur dioxide as a reducing agent significantly improved the recovery, particularly in relation to Manganese and Cobalt, as shown in the table below:

	Operating conditions						**Leaching efficiency**				
Test #	**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.

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.

The leaching results also seems to indicate that temperature may have an impact on Co and Ni extractions, but the impact of temperature on metal extraction was not included in the current test program. Initial test work, however, does show potential for the extraction process to be undertaken at atmospheric pressures and ambient temperatures.

The results also displayed a relationship with particle size. At higher pH levels, increasing the particle size resulted in a sharp decrease in Co and Ni extractions to 56% and 42%, respectively (Ket#5). T

he Mn extraction also decreased significantly from 96.58% at a P80 of 150 µm (Ket#4) to 74.58% at a P80 of 403 µm (Ket#5). Significantly, the Ket#6 sample had a larger particle size, and yet the results from Ket#6 were consistent with the results from Ket#3 and Ket#4.

The bulk leach test (Ket #6) was conducted at pH 1, which suggests that if these more acidic conditions are applied, the extractions may still be highly productive without the need to grind as fine in the future.

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 H_2SO_4.

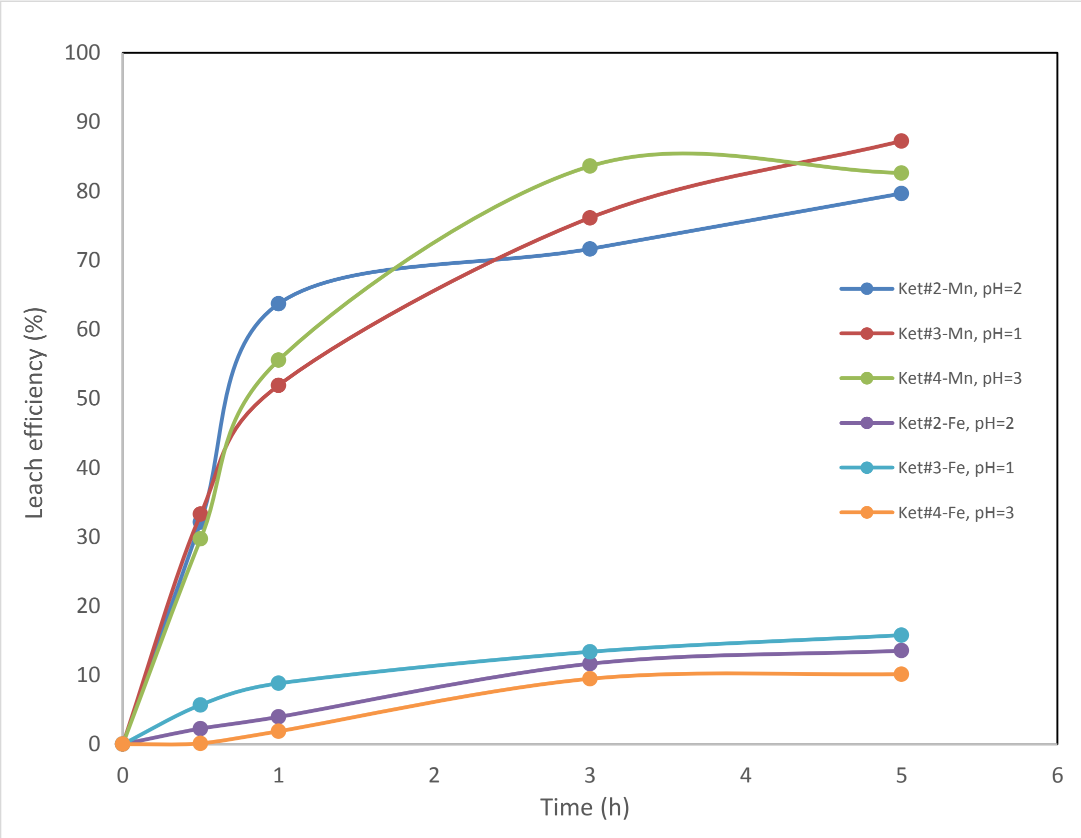

Figure 2: Effect of pH on the Extraction of Metals for Sample Ket (Ket#2, Ket#3 and Ket#4)

Summary and Next Steps

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.

Previous exploration by Archer had identified extensive outcropping cobalt and manganese throughput parts of the larger Ketchowla project area (K1 to K9 structures). Archer still has multiple additional targets identified for follow up across the larger Ketchowla Cobalt Manganese Project area from a combination of drilling, geophysics and geological fieldwork.

For further information, please contact:

Mr Greg English
Chairman
Archer Exploration Limited
Tel: (08) 8272 3288

Mr Cary Helenius
Investor Relations
Market Eye
Tel: 03 9591 8906

Competent Person Statement

The information in this report that relates to Exploration Results is based on information compiled by Mr Wade Bollenhagen, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy and is a full-time employee of Archer Exploration Limited. Mr Bollenhagen has sufficient experience that is relevant to the style of mineralisation and type 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”. Mr. Bollenhagen consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

About the Ketchowla Cobalt Manganese Project

The Ketchowla Cobalt Manganese Project comprises the K1 – K9 Prospects with the current drilling focussed on drilling at K1 and K2 (Figure 3).

As previously announced, historic drilling and other exploration by Archer at Ketchowla has identified high grade cobalt and manganese mineralisation.

K1 is centred around a small historic manganese open pit mine and located on the eastern limp of the main fold structure. K1 is part of a large-scale cobalt and manganese mineralised system which Archer has mapped and sampled over a 5km strike length.

The K2 Prospect is offset 6km to the east of K1. K2 is on the eastern limb of a shallow dipping syncline with discontinuous manganese outcrops mapped by Archer over 1.3km. Previous drilling by Archer at K2 intersected cobalt and manganese mineralisation within 1 – 5 metres of surface.

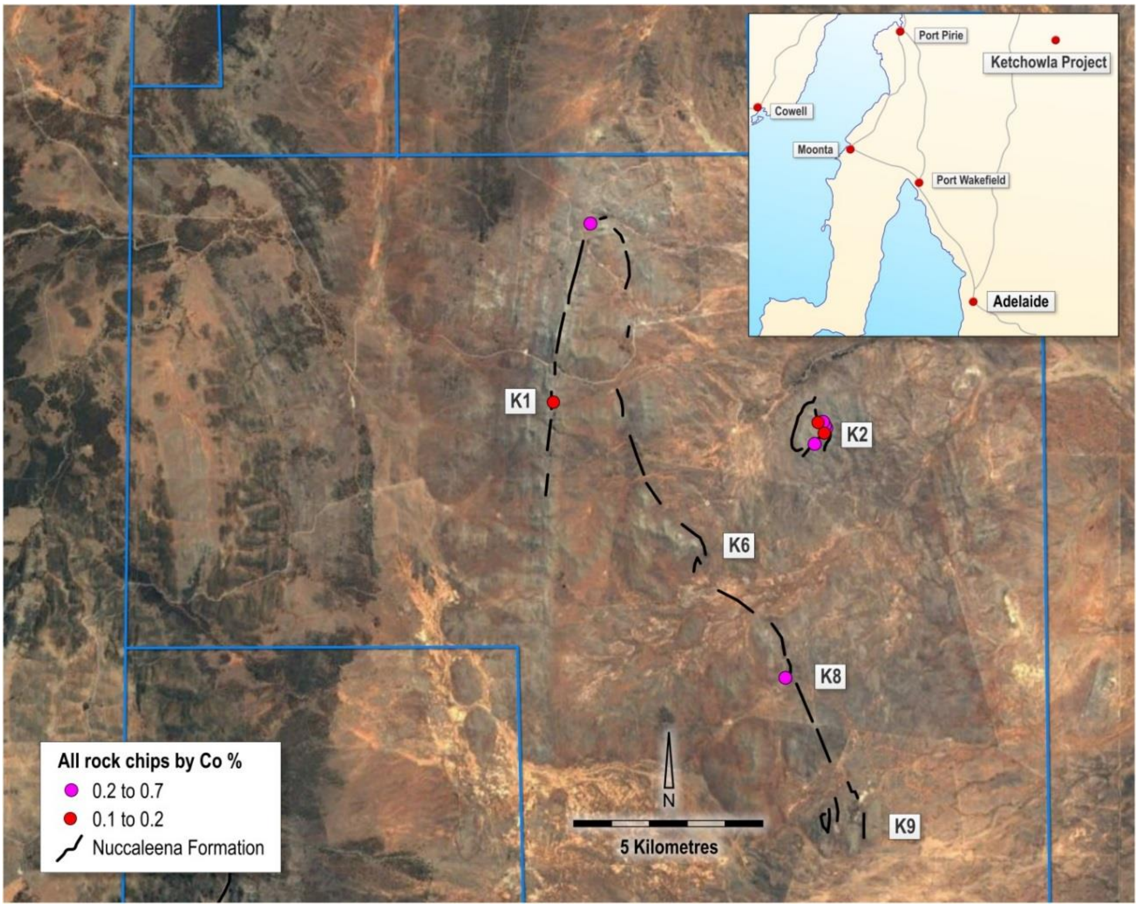

Figure 3: Location of prospects at Ketchowla Project with recent significant Co rock chips samples

JORC Code, 2012 Edition – Table 1

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code Explanation	Commentary
Sampling Techniques	• Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as downhole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling. • Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. • Aspects of the determination of mineralisation that are Material to the Public Report. • In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.	• No exploration drilling results being reported.
Drilling Techniques	• Drill type (e.g. core, reverse circulation, open hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).	• No exploration drilling results being reported.

Criteria	JORC Code Explanation	Commentary
Drill Sample Recovery	• Method of recording and assessing core and chip sample recoveries and results assessed. • Measures taken to maximise sample recovery and ensure representative nature of the samples. • Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	• No exploration drilling results being reported. •
Logging	• Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. • Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography. • The total length and percentage of the relevant intersections logged.	• No exploration drilling results being reported. •
Sub-Sampling Techniques and Sample Preparation	• If core, whether cut or sawn and whether quarter, half or all core taken. • If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry. • For all sample types, the nature, quality and appropriateness of the sample preparation technique. • Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. • Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/second-half sampling. • Whether sample sizes are appropriate to the grain size of the material being sampled.	• No exploration drilling results being reported.

Criteria	JORC Code Explanation	Commentary
Quality of Assay Data and Laboratory Tests	• The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. • For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc. • Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	• Certified standards were not used in the assessment of the analyses. • Analyses was by ALS Perth using their ME-MS61 technique for multi-elements. • The laboratory uses their own certified standards during analyses.
Verification of Sampling and Assaying	• The verification of significant intersections by either independent or alternative company personnel. • The use of twinned holes. • Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. • Discuss any adjustment to assay data.	• No exploration drilling results being reported.
Location of Data Points	• Accuracy and quality of surveys used to locate drillholes (collar and downhole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. • Specification of the grid system used. • Quality and adequacy of topographic control.	• No exploration drilling results being reported.
Data Spacing and Distribution	• Data spacing for reporting of Exploration Results. • Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. • Whether sample compositing has been applied.	• No exploration drilling results being reported.

Criteria	JORC Code Explanation	Commentary
Orientation of Data in Relation to Geological Structure	• Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. • If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	• No exploration drilling results being reported.
Sample Security	• The measures taken to ensure sample security.	• It is assumed that best practices were undertaken at the time • All residual sample material (pulps) are stored securely.
Audits or Reviews	• The results of any audits or reviews of sampling techniques and data.	• None undertaken.

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code Explanation	Commentary
Mineral Tenement and Land Tenure Status	• Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings. • The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	• Tenement status confirmed on SARIG. • All work being reported is from EL 5433 (owned by SA Exploration Pty Ltd, a subsidiary of AXE). • The tenement is in good standing with no known impediments.
Exploration Done by Other Parties	• Acknowledgment and appraisal of exploration by other parties.	• The most significant exploration was undertaken by Aberfoyle in the early 1980's focussing on Cu-Mo mineralisation associated with granite intrusive. • A large program of 1-5m deep holes were completed with little success. • As a part of follow up to Mn exploration, in 2012 Archer flew EM over selected parts of the tenement and successfully identified buried anomalies that are not associated with the conductive Tapley Hill Formation.
Geology	• Deposit type, geological setting and style of mineralisation.	• The mineralisation was initially interpreted to be strataform, however field evidence indicates that it was emplaced by fluids (e.g. an intrusive source). • The orientation of the mineralisation at the K1 is North South and strikes nearly 8km, at the K2 the strike length is considerably shorter (around 1.6km).

Criteria	JORC Code Explanation	Commentary
Drillhole Information	• A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: – Easting and northing of the drill hole collar – Elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar – Dip and azimuth of the hole – Downhole length and interception depth – Hole length • If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	• No exploration drilling results being reported.
Data Aggregation Methods	• In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated. • Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail. • The assumptions used for any reporting of metal equivalent values should be clearly stated.	• No exploration drilling results being reported.
Relationship Between Mineralisation Widths and Intercept Lengths	• These relationships are particularly important in the reporting of Exploration Results. • If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. • If it is not known and only the downhole lengths are reported, there should be a clear statement to this effect (e.g. 'downhole length, true width not known').	• No exploration drilling results being reported.
Diagrams	• Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	• See main body of report.

Criteria	JORC Code Explanation	Commentary
Balanced Reporting	• Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	• The reporting is considered to be balanced.
Other Substantive Exploration Data	• Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	• The mineralisation is restricted to within the Nuccaleena Formation which has been mapped by the SA govt geologists and reports up to 17m wide in locations. The unit is mappable over 10's of kilometres • A composite 5kg sample was created from the drill sample interval 8m to 11m in hole K1RC17_05. This was sent to Fremantle Metallurgy for test work to determine if the Mn ore can be upgraded to an economical product. • The products of this upgrade work were then sent to Kemetco (based in Vancouver, BC) for leach test work, the results of this are discussed in this release.
Further Work	• The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling). • Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	• Further drilling is required along strike as well as testing for mineralisation under cover. • Figures in the body of this report highlight the gaps in the data.