

12 January 2018

## **YAMARNA GOLD PROJECT UPDATE**

- **Multi-element interrogation and analysis completed, building on the initial structural review completed in July 2017**
- **Multi-element geochemical data confirms priority targets for follow-up testing including walk-up drill targets**
- **Mineralisation within the project area has a magmatic or intrusion related signature**
- **Project area reviewed covers an area equivalent to the entire area of other known major greenstone belts**
- **Interrogation and review conducted by tier 1 consultants CSA Global and industry leading geoscientists Scott Halley, Marcus Willson and Carl Brauhart**
- **Drill program being prepared in light of the targeting implications of this significant new analysis**

Australian Potash Limited (ASX: APC) is pleased to provide an update on the Yamarna Gold Project, 130kms north-east of Laverton in Western Australia's Eastern Goldfields.

### **Structural Review**

In 2017, the Company commissioned industry leading geological consultants CSA Global to conduct a structural review of its tenure at the northern end of the Yamarna Greenstone Belt in the Eastern Goldfields Province of Western Australia. The results of this initial review and targetting exercise were discussed in an announcement released to the market on 27 July 2017<sup>i</sup>, and identified that the Yamarna Gold project area was conducive to Archaean Lode/orogenic gold type mineralisation, with a structural analogy to the southern Abitibi/Timmins in Canada (see Figure 2).

The initial review concluded that an additional lithological and geochemical interpretation would provide further insight into the identified targets. The findings of this follow-up review and multi-element interrogation are discussed here, including further confirmation of the priority drill targets (see Figure 1).

### **Multi-element Geochemical and Lithological Review**

Large mineral systems have large alteration halos and these halos can be detected by a range of means. Where an exploration target is under the cover of sediments one of the most effective exploration methods is geochemical analysis and pathfinder mapping to detect alteration halos and direct further exploration to higher probability drill targets. With over 500 drill holes reaching basement rocks within the project area geochemical analysis and alteration mapping has proven to be an effective tool to refine targets generated in the structural study and lead to high quality, early stage drill targets (see Figure 1).

Significantly the analysis identified that mineralisation within the project area has a magmatic association and presents intrusion related mineralisation targets.



The Lake Wells area considered in the reviews comprises over 1,400km<sup>2</sup> of granted and pending tenure across 16 exploration licenses, encompassing the majority of the northern third of the Yamarna Greenstone Belt.

The project area commences c.60 kilometres north-west of the 6-million-ounce Gruyere mine development (see Figure 3).

### ***Pathfinder Analysis & Litho geochemistry***

Principal Component analyses (PCA) is the method CSA Global used to define a number of element associations and correlations with mineralisation. The review concluded that of the 4 associations identified through PCA, 3 were significant, or potentially significant, with respect to gold mineralisation. Significantly the analysis identified that mineralisation within the project area is intrusion related. A local example of this style of mineralisation is Kanowna Belle (~7Moz).

The analysis produced a geochemically defined lithological classification, and suggests that the project area comprises 2 distinct geological Domains, being the northern extent of the Yamarna Shear and, to the west, the Lateral Ramp Thrust. Rock types defined in the litho geochemical analysis are consistent with those associated with other greenstone related gold mineral systems and deposits.

**APC Executive Chairman Matt Shackleton said,** “The Yamarna Gold project represents a significant opportunity for our shareholders, as the work conducted by Scott Halley, Marcus Willson and Carl Brauhart shows. Their experience of Archaean greenstone structural settings is widely acknowledged, and in Dr Halley’s case, his expertise in geochemical alteration analysis is recognised globally.

“The results of the multi-element analysis and lithological/alteration mapping further strengthen the targets identified in the previous structural review, and cannot be ignored. Our exploration team is now finalising plans for drill programs on the priority target areas, commencing with target area 1 (see Figure 1).

“With a positive outlook for gold in 2018, the high-grade results returned by Gold Road Resources from tenure contiguous to the highest priority targets<sup>ii</sup>, and the truly regional nature of the Yamarna Gold project, we believe this to be an auspicious time to be considering this value adding work. This work has the potential to generate significant value for shareholders as APC moves forward in 2018.”

### **Technical Summary**

The basis for the study discussed here is low detection level multi-element analysis conducted on 527 bottom of hole samples. While over 1000 drill holes are known to have been completed within the project area, many of these did not reach basement rocks, and so have been excluded. Coverage of the material sampled and analysed as part of the study can be considered to provide a reasonable indication over a significant portion of the Project, however is by no means complete.

Two high quality multi-element geochemical data sets were combined for the study. The first dataset being that acquired through tenement acquisition, the second being analysis of bottom of hole samples derived from previous APC/Goldphyre drilling. All samples were analysed by Intertek using four-acid digest and ICP-MS/OES in combination for 60 elements in most cases.

Data was reviewed in loGas software, a leading geochemical analysis software package, with several outputs:

- all samples were classified to determine primary lithology or protolith;

- all samples were classified in respect to alteration style and strength, using shortwave infrared mineral analysis (SWIR) to directly measure alteration related mineralogy, and;
- all samples were reviewed to assess single and multi-element associations using principal component analysis (PCA), with gold occurrences.

Outputs from the loGas analysis were then layered in a GIS environment with the previously completed structural review to better define and prioritise gold targets with the project area.

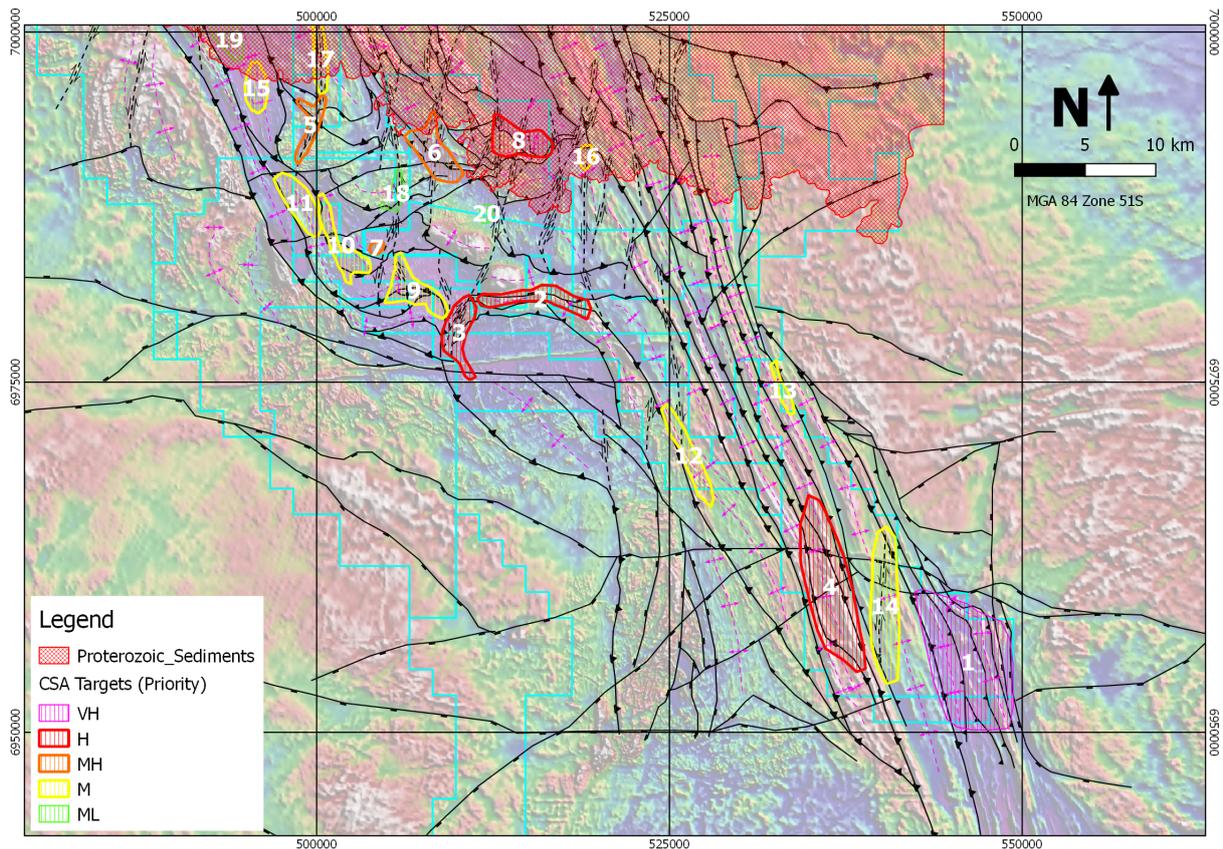


Figure 1: Yamarna Gold project area showing targets numbered based on considered order of priority. Drill planning at target area 1, circa 2.2kms north-west of Gold Road Resources' Ibanez/Corkwood prospect is being finalised.

### **Principal Component Analysis**

Within loGas, data was analysed using the Principal Component Analysis (PCA) model. The aim of the PCA process is to define elemental associations that indicate specific geological circumstances, such as lithology and mineralisation relationships.

loGas determined four PCA from which geological information can be inferred, of these PCA4 and the negative Bi-(W-Au-Mo) association is considered the strongest pathfinder association for the identification of potentially mineralised areas.

Another positive association is PCA3 (Cs-Sr-Tl-Rb-P-Eu-Ba-K) indicating white mica (sericite) +/- carbonate alteration. This dataset correlates very strongly with areas in which alteration classification, using SWIR, has identified sericite alteration of varying degrees providing confidence in both interpretations.

### **Pathfinder Distribution**

Where gold occurrences are limited or generally lower level, then the use of additional elements and their relationship to crustal abundance can aid in the delineation of targets for further work. Elements identified in PCA4, and generally accepted as being indicative of intrusion related fluids

include Mo, W, Bi, and Te. Bi and W both show significant distribution and are considered highly elevated relative to crustal abundance, in general both are showing reasonable visual correlation with the location of and hanging-wall to major thrusts. Te appears to have a similar distribution to Bi and W, though as more discrete point highs. Mo anomalism occurs as much more discrete point highs and correlates with samples identified as intrusives in the lithochemistry.

### ***Lithochemistry***

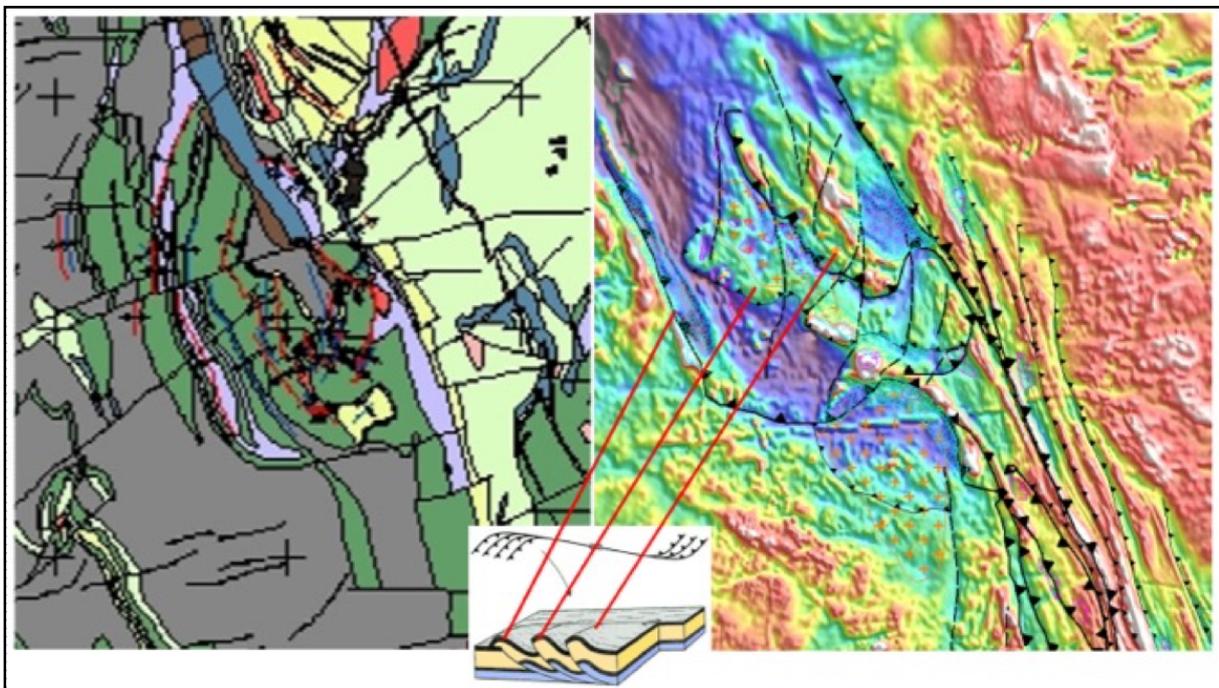
One means of classifying rocks is by their elemental compositions. Using the detailed chemical dataset generated for this project allowed compositional rock types to be accurately delineated and plotted. While this classification does can define rock types with certain limitations (intrusive and extrusive rocks will have the same composition, but be very different type), it does help segregate rocks and build on the information gained from the other analyses and interpretation. This improves understanding of the geological setting in respect to potential mineralisation.

### ***Geochemical Classification of Alteration***

Using knowledge of mobile elements and the changes in elemental concentrations in rock types, it is possible to calculate type and intensity of alteration. CSA Global have used molar ratio plots to classify alteration and intensity within the dataset, and produce corresponding maps. These alteration plots in combination with the other pathfinder elements and structural analysis provide a direct targeting tool by defining areas in which hydrothermal activity can be understood to occur.

### ***Additional Samples***

When looking at the preliminary target areas generated by the CSA Global report it was noted that several fresh water bores were drilled as part of the Lake Wells Sulphate of Potash project fell within areas of interest for gold mineralisation. To compliment and expand the existing dataset these holes were visited and sampled prior to rehabilitation. These samples were recently dispatched, and once results are received they will be incorporated into further analysis and target refining.



*Figure 2: Subset of the Abitibi geology map, rotated 90°, (left hand side) showing the Timmins gold mining camp as a comparative structural setting to APC's Yamarna Gold Project (simplified reproduction of full CSA Global interpretation, right hand side)*

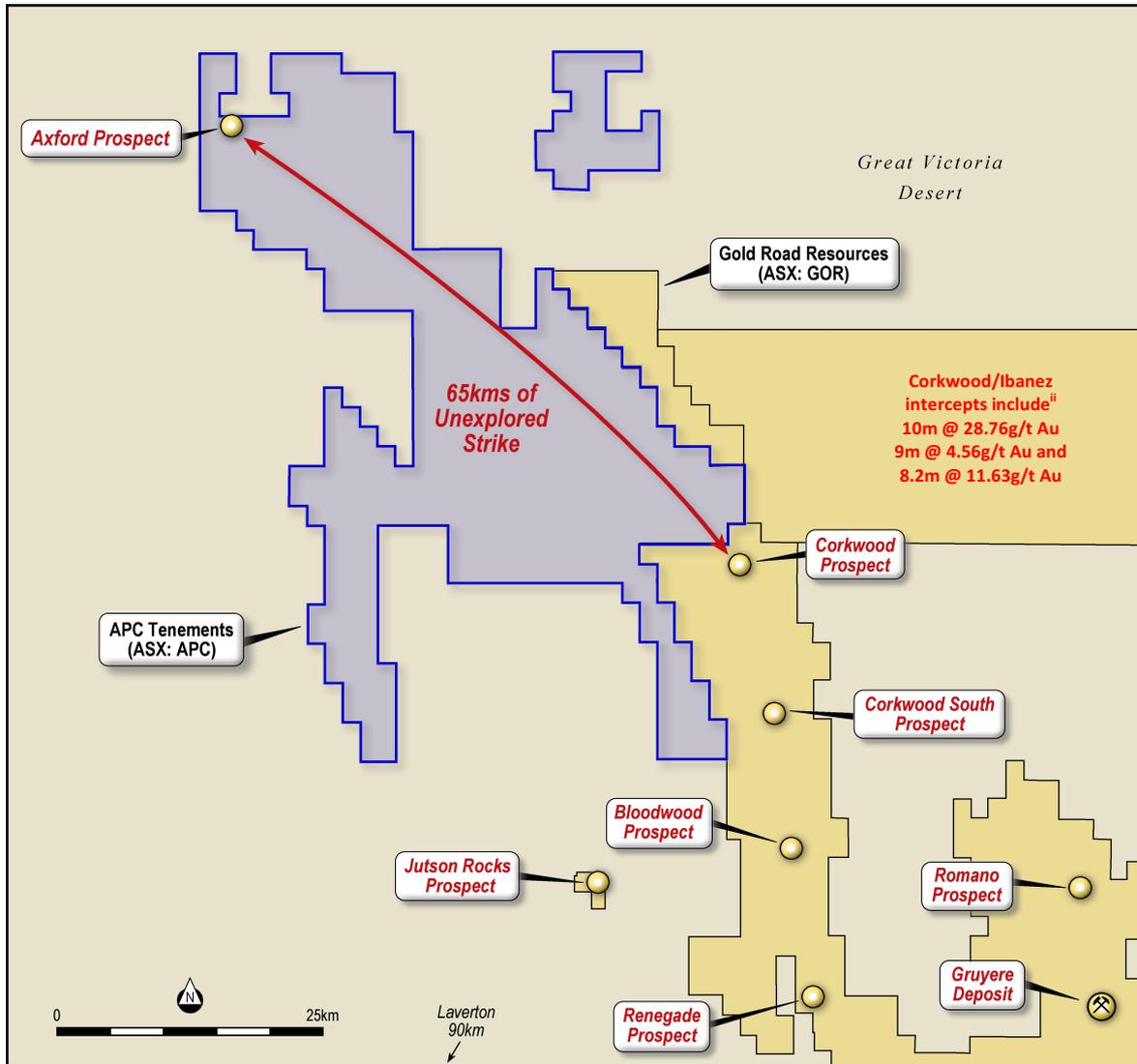


Figure 3: APC's Yamarna Gold Project is located in the Eastern Goldfields region of Western Australia

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**Forward looking statements disclaimer**

This announcement contains forward-looking statements that involve a number of risks and uncertainties. These forward-looking statements are expressed in good faith and believed to have a reasonable basis. These statements reflect current expectations, intentions or strategies regarding the future and assumptions based on currently available information. Should one or more of the risks or uncertainties materialise, or should underlying assumptions prove incorrect, actual results may vary from the expectations, intentions and strategies described in this announcement. No obligation is assumed to update forward looking statements if these beliefs, opinions and estimates should change or to reflect other future developments.



### **Competent persons statement**

The information presented here that relates to the gold portion only of this 'Exploration Program on Yamarna Gold Project' release is based on information compiled by Mr Marcus Willson of CSA Global Pty Ltd. Mr Willson takes overall responsibility for information relating to the gold related strategic review. Data was provided for the review by Australian Potash Limited. Mr Willson is a Member and Registered Professional Geoscientist (Exploration) with the Australian Institute of Geoscientists and has sufficient experience which is relevant to this style of mineralisation under consideration and to the activity that has been 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 2012)'. The Competent Person consents to the inclusion in this release of the matters based on the information in the form and context in which it appears.

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<sup>i</sup> Refer to ASX announcement 27 July 2017 'Yamarna Gold Assets Review and Exploration Plans'. That announcement contains the relevant statements, data and consents referred to in this announcement. Apart from that which is disclosed in this document, Australian Potash Limited, its directors, officers and agents: 1. Are not aware of any new information that materially affects the information contained in the 27 July 2017 announcement, and 2. State that the material assumptions and technical parameters underpinning the estimates in the 27 July 2017 announcement continue to apply and have not materially changed.

<sup>ii</sup> Gold Road Resources Limited, ASX announcement 27 June 2017, 'Yamarna Exploration Update: Significant Intersections Returned Across Tenement Package'.

