



31 July 2018

QUARTERLY REPORT

For Quarter ended 30 June 2018

(ARK: code AHK)

OPERATIONAL HIGHLIGHTS FOR THE QUARTER

- **AHK undertook a strategical review of its operation over the quarter, resulting in a directional change whereby AHK will concentrate on the near term gold production from Old Pirate in the Tanami Northern Territory and sell its Mt Porter and Frances Creek projects.**
- **AHK entered into a letter agreement with Prodigy Gold NL (formerly ABM Resources) to operate the Old Pirate project and secured an exclusive option to acquire the Old Pirate and Buccaneer projects. Both gold mining projects are situated in the Northern Territory's Tanami region.**
- **AHK completed the final Environmental work at the Union Extended project, as required for preparing and submitting a mining management plan, for the establishment and operation of a gold processing plant.**
- **Subsequent to the last quarter, AHK has entered into a binding term sheet with Territory Iron Pty Ltd to sell Mt. Porter (ML23839 and ELR116), Frances Creek (EL23237) and gold rights over various mining leases and exploration tenements held by Territory and associated companies.**
- **AHK has maintained a very tight capital structure of less than 50M ordinary shares, which has intrinsic value to shareholders particularly when earnings are generated.**

Change of Direction

During the quarter, AHK's board undertook a strategic review of the options to move the company into production. While the company had made significant steps readying its Pine Creek assets for gold production, including a robust mine plan for Mt Porter, there was no near-term, economically viable solution to treating its gold ore in the Pine Creek area. AHK was informed by Kirkland Lake Gold that they had no near-term capacity to treat Mt. Porter ore at their Union Reef CIL gold plant. Expecting that Union Reefs was not a viable option, AHK had been working towards permitting a gold plant at Union Extended, a mining lease it has under option and located nearby to AHK tenements in Pine Creek. However, based on, the delay in environmental studies to the summer rain event, the understanding of the substantial lead times required in permitting other mining operations are having in the Northern Territory and the inability to close funding for the project, the directors felt it



necessary to consider all options and investigated parties potentially interested in purchasing AHK's Pine Creek tenements. Concurrently, it was decided to focus on the Old Pirate project and take Buccaneer under option, as AHK had been evaluating these projects for some time, and the board felt a permitted project with full mining infrastructure in place would provide greater opportunity for funding and better value for the AHK's shareholders moving forward. Old Pirate is permitted to mine and process gold, has a gravitational gold plant in place, as well as mine camp, airstrip and walk up gold feed.

The sale of Mt Porter and Frances Creek provided AHK the opportunity to improve its financial position by extinguishing the debt to Chan Investments Limited (**Chan**). Further, the arrangements with Chan will permit AHK some working capital and the ability to acquire other projects without being subject to current security arrangements with Chan.

As announced on 23 July 2018, AHK had secured a commitment that would have repaid Chan in full and provided all initial funding to bring the Old Pirate project into production (*refer AHK announcement 17/04/2018*). Unfortunately, the commitment AHK procured was withdrawn, due to the funder's own internal issues. Further, AHK encountered resistance from other potential funders that were precluded from or not prepared to contribute funds to paying out or reducing the Chan debt. AHK is now solely focused on funding the Old Pirate and Buccaneer projects. The payment of the Chan debt will now provide a more compelling and attractive proposal for potential funders for Old Pirate and Buccaneer.

While the sale of Mt Porter and Frances Creek has reduced AHK's gold resources in the Pine Creek region the company still retains the permitted Glencoe mining lease and the option over Union Extended.

Key points of the sale of Mt Porter and Frances Creek

- On 20 July 2018 Ark entered into a binding term sheet with Territory Iron Pty Ltd to sell Mt. Porter (ML23839 and ELR116), Frances Creek (EL23237) and the gold rights over various mining leases and exploration tenements held by Territory and associated companies in the Pine Creek region.
- The sale price for the Pine Creek Assets is \$4M cash plus GST, if any is payable.
- Territory has agreed to pay a \$500,000.00 non-refundable deposit.
- Sale terms have been agreed with Chan Investments Limited (**Chan**), which provided AHK a gold loan facility (*refer AHK announcement 05/08/2016*), secured by charges over AHK property including the Pine Creek Assets. Under this facility AHK drew down US\$2.6M.
- \$3.75M from the Sale will repay Chan in full and upon completion of the relevant sales Chan will fully release AHK from any and all claims.

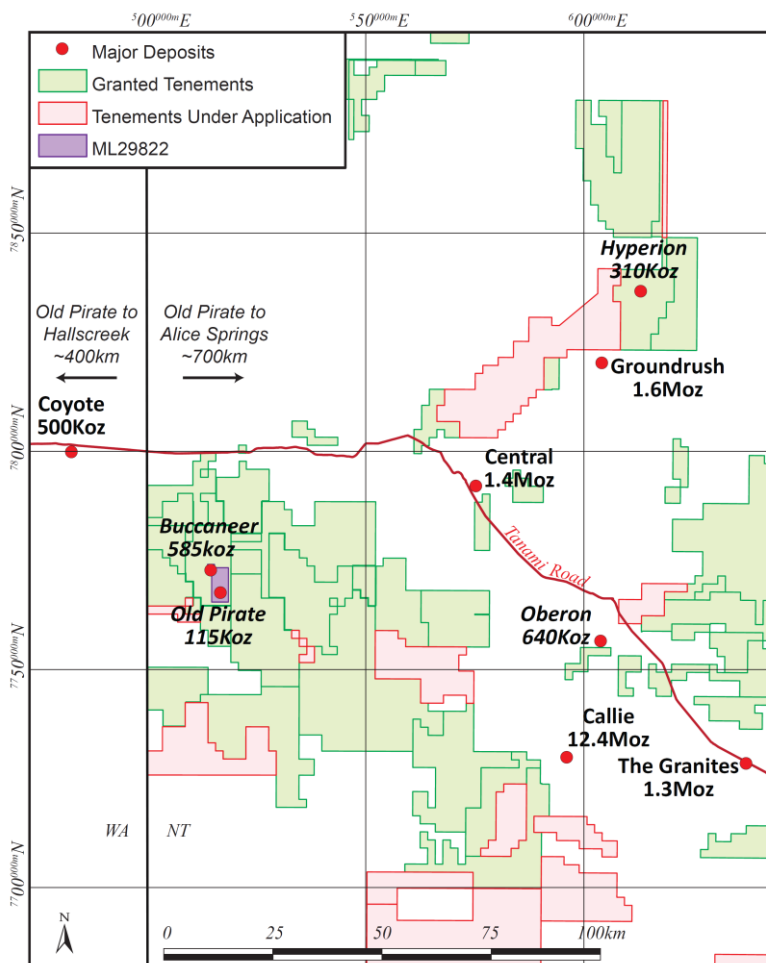
Old Pirate and Buccaneer

AHK and Prodigy Gold (formerly ABM Resources NL) entered into a letter agreement (**Agreement**) pursuant to which the parties agreed to negotiate an operating agreement (**Operating Agreement**) for the Old Pirate project pursuant to which AHK shall be entitled to explore and mine the Old Pirate project area. Negotiation is ongoing.

The Agreement also grants AHK two options, namely an option to:

- purchase the Old Pirate project area, the processing plant, camp infrastructure and tailings dam and be assigned leases to the western bore field, airstrip and access road. This option may be exercised at any time during the term of the Operating Agreement provided AHK has made required payments to Prodigy; and
- negotiate purchase of the Buccaneer project. This option provides AHK a window of 60 business days to conclude purchase terms.

The Old Pirate project is situated on ML29822 which is located in the highly prospective Tanami region of the Northern Territory, approximately 75km from Newmont Mining's "Callie" gold mine.



Project highlights include:

- good access from the Tanami Highway;
- Serviced by Alice Springs;
- a 20t/p/h processing plant;
- fully operational camp infrastructure;
- tailings dam;
- quality water supply from a series of bores;
- licensed airstrip nearby;
- full and comprehensive EIS previously completed;
- permitted for open-cut gold mining and presently on care and maintenance;
- low entry cost; and
- prompt start-up to gold production.

Ahk plans to recommence open-cut gold mining soon after the Operating Agreement is concluded and the revised MMP is granted and then following the surface mining will progress to underground mining.

The Old Pirate deposit hosts an indicated and inferred Mineral Resource Estimate of **760,000t grading 4.7g/t for 114,900oz** of contained gold using a 1g/t lower cut-off grade. The MRE was prepared by CSA Global in August 2016 following completion of trial mining.



Figure 1 Visible gold in Old Pirate vein



2m wide vein running along pit base and up into the wall of pit



Figure 2 Auriferous Veins run into the walls of the existing pit walls

Old Pirate Geology

The Old Pirate high-grade gold deposit (the deposit) is located near the centre of the Granite-Tanami Orogen (GTO). The GTO (Bagas, et al., 2013) includes the Tanami Supergroup, Ware Group and associated intrusive rocks. Younger Meso- to Neoproterozoic cover sediments overlie the GTO. Archean basement to the GTO does not occur in the Twin Bonanza area.

The Tanami Supergroup is divided into the Dead Bullock Group and the Killi Killi Formation. The Dead Bullock Group is a shale-dominated turbidite succession, occasionally iron-rich with minor chert beds (Bagas, et al., 2013; Crispe and Scrimgeour, 2007). The Dead Bullock Group exceeds 1 km thickness. The upper Dead Bullock Group becomes sandier as it transitions into the Killi Killi Formation. The transition is likely to be a result of changing provenance rather than depositional environment. The ~4 km Killi Killi Formation is a sand-dominated turbidite succession with thinly- to thickly-bedded, interbedded sandstones, siltstones and claystones (shale-topped sands (STS)). Some thicker siltstones/claystones (mega-shales) and amalgamated coarse channel sands, averaging 15 m respectively, punctuate the STS. Dolerite sills and dykes commonly intrude the Upper Dead Bullock Group and Killi Killi Formations.

The Pargee Sandstone is a thick succession of interbedded fluvial conglomerate, pebbly sandstone, quartz arenite and minor siltstone. The Pargee Sandstone has a maximum depositional age of 1,768+/-14 Ma (Cross and Crispe, 2007).



The Gardiner Sandstone is a cover succession of marginal marine sandstones containing herringbone cross stratification, ripple marks, intraformational conglomerates and halite pseudomorphs. Younger flat-lying Cambrian Basalts are also preserved as platform cover in areas protected from erosional stripping. Tertiary palaeochannels reach 10 km wide and are greater than 100 m deep.

Gold mineralisation in the GTO is commonly associated with anticlinal structures. Old Pirate and Coyote occur within Killi Killi Formation sandy turbidites in anticlines. Callie occurs within Dead Bullock Group shaley turbidites in an anticline. Groundrush and Hyperion occur in shear zones in dolerite and granite respectively. The notable exception is the Central Tanami mines that are fault-hosted deposits in interbedded basalts and sandy turbidites of the Mount Charles Formation, more recently considered part of the upper Dead Bullock Group (Bagas, et al., 2013).

The Old Pirate deposit is a coarse gold system that is hosted within both bedding-parallel and discordant quartz veins located in two, southerly plunging anticlines. Recent pit investigations and detailed mapping have helped gain further understanding of the constraints on the mineralisation within the system. The deposit has been divided into five geological domains as follows:

- Western Limb;
- East Side (which includes Old Pirate South);
- Central;
- Old Glory; and
- Golden Hind.

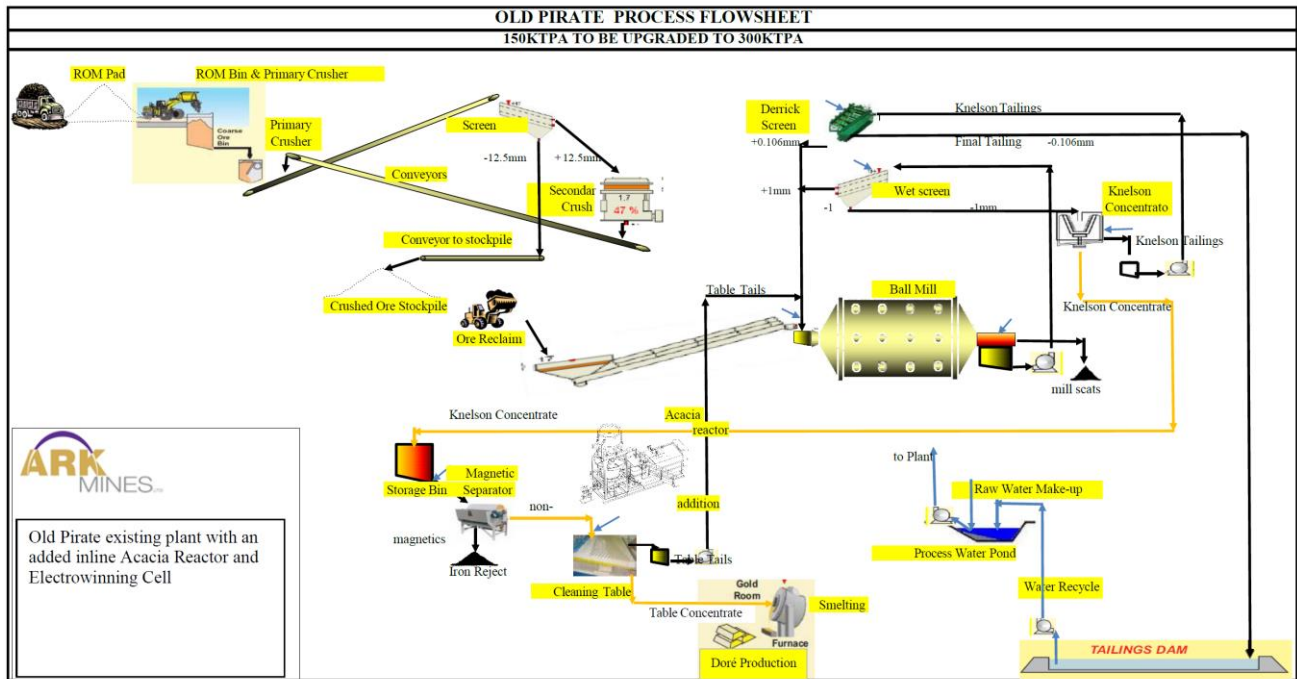
Boucher (2011) noted two principal deformation events associated with the generally anticlinal structural setting that has been defined for the Old Pirate deposit. The first of these events does not produce a foliation (Boucher, 2011). While this is not well explained by Boucher (2011) in the context of fold patterns observed, Lambeck et al. (2009) provide a potential mechanism for this. In their paper they have proposed “Inversion” during the Tanami Event C 1,830 Ma, based on various constraints including geochronology and geochemical characterisation of the various sedimentary and doleritic units in the Tanami of Basin. Inversion, or early extension basin formation followed by compressional inversion, can create initial early extension slide related folding (e.g. Coward and Potts, 1983). As there is no compression during the early extensional event, no foliation is expected to be formed, except perhaps locally due to areas of anomalous compression. Boucher (2012, November (b)), in assessing the regional framework of the Twin Bonanza area, recognised inversion as a significant process in this area, providing a better mechanism than his earlier “toe thrust” model (Boucher, 2011). The subsequent “inversion” of the extensional architecture tightens (and probably overtightens) the anticline, and is responsible for the noted “single, dominant north-south cleavage” (Boucher, 2011).

Old Pirate Metallurgy

- 92% of OP gold in the oxide zone has been shown to fall into the +75µm size fraction.



- Gravity only recovery at $P_{80} = 75\mu\text{m}$ is 98% and at $P_{50} = 75\mu\text{m}$ $P_{50} = 106\mu\text{m}$ recovery is 97%.
 - This is confirmed by low efficiency Wilfley table yields.
 - This is further confirmed by trial mining and gravity only recovery in the OP gravity plant.
- Recovery during full mining at the Coyote CIP plant remained high at an average 98.8% as mining progressed towards and into the transition zone with increasing sulphides of increased species diversity.
- Petrography shows coarse gold remains present at depths of 250m, 100m below the transition to fully fresh rock.
- Petrography shows that secondary upgrading in gold fineness and potentially in grain size is attributable to metamorphic processes and is not weathering dependent.
- CSIRO SEM and EDS studies show that secondary gold grains have 1% silver or less, and primary gold grains which are unaltered from deposition have silver content above 4%.
- Perth Mint out-turns show that even in the trial mining of the oxidised zone, the silver content averaged 7.2% and thus the majority of gold is primary and unaltered from its initial deposition in the Old Pirate mineralisation.
- Even low grade 1.0 to 2.5 g/t tails are amenable to gravity recovery and yield a concentrate of grade sufficient for viable Acacia recovery.
- The coarse native gold mineralisation style and grain size distribution of the Old Pirate resource appears to be a hypogene feature of its TAG mesothermal petrogenesis with supergene metamorphic mesothermal process that upgrade fineness having little overall effect on the nature of the mineralisation. The grainsize distribution is the major contributor to the exceptional gravity recovery of the deposit. However, given this grain size distribution, even should fresh sulphides at depth encapsulate a significant percentage of gold grains, it is highly unlikely that the mineralisation would behave in a refractory manner since at a standard $P_{80} 75\mu\text{m}$ grind, the majority of individual grains would be effectively exposed to a cyanide leachate.



Infrastructure

- The project is connected to the Tanami Highway by a formed road.
- A licenced airstrip facilitates charter flights to various centres in WA and the NT.
- A fully operational camp services exploration activities and has been previously expanded to support mining operations.
- There is a gold treatment plant on site with a nominal throughput rate of 20t/p/h.
- Good quality water is available from a series of fully equipped bores.



Figure 3 Old Pirate Gravitational gold Plant



Buccaneer

The Buccaneer project is also situated on ML29822 and located to the north of Old Pirate.

- Current published Indicated and Inferred resources have been estimated for Buccaneer at two different cut-off grades:
- 22.7 Mt at 1.2 g/t containing 875,000 oz of gold using a 0.5 g/t cut-off grade (Optiro 2017)
- 10 Mt at 1.82 g/t containing 585koz of gold using a 1.0 g/t cut-off grade (Optiro 2017)

Subject to further due diligence and negotiation of satisfactory purchase terms, AHK considers that Buccaneer would be an excellent acquisition for AHK and has the capacity to deliver significant gold production over many years.

Union Extended & Glencoe

AHK is now engaged in discussions with companies interested to invest in the Pine Creek area and is hopeful of entering into documented arrangements in the near future.

Potential arrangements concern the possible combination of certain Pine Creek projects with:

- Union Extended (over which AHK holds an option to purchase that was recently extended to 10 November 2018); and
- the Glencoe mining lease for which MMP approval for open pit mining has been secured and remains in place (*refer AHK announcement 13/10/2015*).

Completion of Union Extended Environmental studies for the Mine Management Plan

During the quarter AHK completed the final environmental work at the Union Extended project, as required for mining management plan approval, for the proposed gold processing plant.

The work, undertaken by Northern Resource Consultants Group, was delayed due to unprecedented rain and included:

- groundwater study;
- soils study;
- flora study; and
- fauna study.

These studies along with previous work including

- groundwater modelling of the union Extended Gold Processing project;
- tailings management;
- calibration of the site water balance;
- water monitoring program;
- gold Plant design;
- tailings characterisation;



- tailings dam design; and
- Infrastructure design.

Glencoe

Access to the Glencoe is from Darwin, Northern Territory.

The Stuart Highway, the area's major thoroughfare, and the Adelaide-to-Darwin transcontinental railway line bisect Australia in a north-south sense and provide access to the Burnside Gold Projects. The mining areas and Union Reefs plant sites are easily accessed via good all-weather roads and there is excellent road, rail, water and electric power infrastructure.

The Burnside Project lies between the towns of Pine Creek and Adelaide River to the southeast of the Northern Territory's capital city of Darwin. Access is gained to the Burnside Project from Darwin by travelling for some 160km along the sealed Stuart Highway, thence turning north-easterly along the sealed Fountain Head Road for some 12km.

Mineralization at the Glencoe deposit is reported as being located in three mineralized zones, the largest of which is around 700m in strike length, 100m down dip and up to 15m in width. The majority of mineralization at Glencoe occurs in quartz veining as either gold interstitial to pyrite- arsenopyrite aggregates or inclusions in quartz. Higher grades are observed where late stage chlorite alteration with associated shearing and brecciation overprints mineralized quartz veins. Gold is mostly fine grained, but there is great variation with reports of visible gold in core. Gangue minerals include chlorite, quartz, tourmaline and carbonaceous matter (Milligan, 1988). Oxidized sulphides in the weathered zone have been replaced by goethite and limonite as fracture coatings and box works.

The mineralization at Glencoe is considered structurally complex; it is hosted by a number of sub-vertical fractures, roughly parallel to the axial plane of the major anticline and is of varying thicknesses (ranging 2- 10m) with strike lengths up to 100m; this is where the majority of gold mineralization occurs. Minor gold is also associated with cross structures and late intermediate dykes. Gold bearing sub-vertical, lenticular fractures also occur in subsidiary flexures up to 200m from the main anticline axial plane, as is the case in the North Central Pit.

The complexity of mineralization and resultant variability in grade became apparent in a close spaced (2.5m) vertical drilling program conducted in 1988.

Moderate variability in gold grades, indicates the presence of coarse grained gold in the ore.

Gravity separation and subsequent cyanidation time leach test-work was carried out on a



representative sub- sample of the Glencoe composite at a grind size of P80 :75 μm .

The test-work was conducted to determine a baseline gold extraction level

Summary of results

- Gravity recoverable gold comprised 45.84% of total gold content.
- Overall gold extraction after 36 hours was relatively high at 95.85% of total gold content.
- Reagent consumption levels were relatively low.

Comp Identity	Test No.	Grind Size P ₈₀ (μm)	% Au Extraction @ hours								Consumption (kg/t)	
			Gravity	1	2	4	6	12	24	36	Lime	NaCN
Glencoe Comp	DM2016 DM2017	75	45.84	70.04	78.43	85.25	88.09	93.26	94.43	95.85	1.01	0.77