

# SEPTEMBER 2017 QUARTERLY REPORT

#### **HIGHLIGHTS**

- 1) The Fosterville Mine, 60 km west of Nagambie and 100% owned by Kirkland Lake Gold (KLG), is fast becoming one of the world's great underground gold mines. Its new mineralisation style at depth of very-high-grade, antimony-arsenic-associated, visible-gold-insediments is set to bring about a gold renaissance in Victoria and is highly relevant for Nagambie Resources' future exploration. The Swan Zone, the deepest underground area at KLG's Fosterville Mine, at 30 June 2017 was reported as having a Mineral Reserve of 532,000 ounces of gold at an amazing average 58.8 g/t (1.9 ounces per tonne) cut grade and it is completely open at depth.
- 2) At KLG's Fosterville Mine, it appears that with increasing depth, temperature and pressure conditions at the time of gold deposition became more ideal for the formation of very-high-grade mineralisation. Fluid inclusion studies indicate that the gold mineralisation at Fosterville formed as deep as 5.7 km and at temperatures up to 385°C.
- 3) The gold mineralisation at Nagambie Resources' 100% owned Nagambie Mine was formed at the same geological time (around 377 million years ago) as at Fosterville and has the same characteristics at surface: low-grade, antimony-arsenic-associated, finely-disseminated-gold-in-sediments (silicified sandstones and siltstones). The Wandean gold mineralisation is the same.
- 4) Since discovering Wandean in 2014, Nagambie Resources has patiently and methodically increased the total area held under exploration licences in the Nagambie area to over 1,000 sq km, both as tenements were dropped by other explorers and as field reconnaissance by the Company identified additional east-west structures in the region.
- 5) Comprehensive Induced Polarisation (IP) geophysical surveys, looking over 400 metres in depth, are planned to be carried out at both the Nagambie Mine and Wandean in coming months. The hope is that sulphide-gold grades at the Nagambie Mine and Wandean increase with depth as they do at Fosterville. The IP results will hopefully indicate better mineralised splays as drill targets and indicate increasing sulphide mineralisation with depth.
- 6) Following the board's decision to conserve cash wherever possible, net cash outgoings for operations and administration (excluding exploration) for the September quarter were \$147,000, \$194,000 less than the equivalent \$341,000 in the June quarter.

#### **COMMENTARY**

Nagambie Resources' Chairman, Mike Trumbull said: "The KLG Fosterville gold story is truly remarkable and has geologists around Australia shaking their heads in amazement. The low-grade, finelydisseminated-gold-in-sediments surface deposits in central Victoria were considered to be the poor cousins of the Ballarat and Bendigo nuggettygold-in-quartz-veins deposits. Fosterville is turning all that on its head.

"The results of the IP programs at the Nagambie Mine and Wandean in coming months will be eagerly awaited."

# 31 OCTOBER 2017

#### NAGAMBIE RESOURCES

Underwater storage of sulphidic excavation material (PASS) in the two legacy gold pits at the Nagambie Mine represents an excellent environmental fit with the construction of major infrastructure projects for Melbourne such as Metro Rail, North-East Link and East-West Link.

The discovery and development of shallow, open-pit and heap-leachable oxide-gold deposits is being methodically advanced. Exploration for high grade sulphide-gold underground deposits has been commenced.

Recycling of the overburden and tailings dumps can produce aggregates for concrete, road base material and road gravel for local roads.

Quarrying, washing and screening of sand deposits at the mine to produce various sand and quartz aggregate products is planned.

The first landfill site is planned to take advantage of the 17 Ha of engineered black plastic under the mine tailings pad.

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#### Board

Mike Trumbull (Exec. Chairman) Geoff Turner (Exploration Dir.) Kevin Perrin (Finance Director) Alfonso Grillo (Company Sec.)

James Earle CEO

# **GOLD EXPLORATION**

Since discovering Wandean in 2014, Nagambie Resources has patiently and methodically increased the total area held under exploration licences in the Nagambie area to over 1,000 sq km, both as tenements were dropped by other explorers and as field reconnaissance by the Company identified additional east-west structures in the region.

# Gold Renaissance in Victoria to be led by Fosterville

Figure 1 was part of a presentation on the Fosterville Gold Mine by its 100% Canadian owner Kirkland Lake Gold (KLG) on 25 September 2017 at the Denver Gold Forum in the USA. The Fosterville Mine is fast becoming one of the world's great underground gold mines.



Figure 1 Longitudinal Projection of the Fosterville Gold Mine

KLG is listed on the Toronto and New York stock exchanges and is planning to list on the ASX in November 2017. The ASX listing will highlight to the Australian market the Fosterville Mine and its new, previously unheard of, mineralisation style: very-high-grade, antimony-arsenic-associated, visible-gold-in-sediments.

The Swan Zone (shown in Figure 1) at 30 June 2017 had a Mineral Reserve (Canadian guidelines) of 532,000 ounces of gold at an amazing average 58.8 g/t (1.9 ounces per tonne) cut grade and is completely open at depth. Gold reserves at Fosterville increased by over 500,000 ounces in the six months to 30 June 2017 and are expected to continue to increase dramatically in future years.

Figure 1 shows that the sulphide-gold mineralisation occurs in splays, plunging at relatively low angles. The figure also shows the increase in gold grade underground with increasing depth: from 1.5 g/t resource grade shells immediately beneath the oxide open pits; to greater than 3.0 g/t resource grade shells; leading to the high-grade mining stopes in Harrier South and Lower Phoenix / Swan Zone. It appears that with increasing depth, temperature and pressure conditions at the time of gold deposition became more ideal for the formation of very-high-grade mineralisation. Fluid inclusion studies indicate that the gold mineralisation at Fosterville formed as deep as 5.7 km and at temperatures up to 385°C.

#### Antimony-Arsenic-Associated, Gold-in-Sediments Deposits

Fosterville is 20 km east of Bendigo, 45 km south of Lockington and 60 km west of Nagambie (refer Figure 2). The Fosterville Mine, the Lockington Deposit and the Nagambie Mine are all antimony-arsenicassociated, gold-in-sediments (silicified sandstones and siltstones) deposits formed at the same geological time (around 376 to 377 million years ago). They are very different from the traditional Victorian nuggetty gold-in-quartz-veins deposits such as the Bendigo and Ballarat mines (formed around 420 to 440 million years ago). The Victorian Government intends to put the Lockington tenements (Gold Fields stopped exploration in 2011) out to tender in the future and, when they do, Nagambie Resources considers that there will be intense competition for them from the gold majors, including KLG.



Figure 2 Plan showing Fosterville, Lockington and Nagambie Project Tenements

## IP Surveys at the Nagambie Mine and Wandean

Nagambie Resources is expanding its exploration strategy to test for high grade sulphide-gold deposits beneath known oxide mineralisation. The Company has already established that ground IP (Induced Polarisation) geophysics can locate sulphide mineralisation both at Wandean and the Nagambie Mine. Comprehensive IP programs, looking over 400 metres in depth below the known surface oxide gold mineralisation, are planned to be carried out at both the Nagambie Mine and Wandean in coming months.

The Nagambie Mine has been drill tested to only 150 metres below the pit floors and the Wandean Prospect has been drilled to only 60 metres below surface. As the gold is known to be associated with sulphides such as stibnite (antimony), arsenopyrite (arsenic) and pyrite (iron), defining anomalous sulphides at depth with IP will target mineralised splays for drilling. Both surveys have been designed to 'see' to depths exceeding 400 metres.

Better sulphide-gold intersections obtained from the relatively shallow drilling carried out at the Nagambie Mine during the 2006/2007 year included: 26.7 metres at 5.0 g/t gold from 110 metres downhole in hole NRP02; 15m at 2.1 g/t from 80m in NRP11; 12m at 3.6 g/t from 110m in NRP18; and 10m at 2.7 g/t from 139m in NRP20. Without any geophysics to guide the design of that program, the drilling was effectively

carried out 'flying blind'. In the light of that, the better drill intersections obtained are considered very encouraging.

The hope is that sulphide-gold grades at the Nagambie Mine (and Wandean) increase with depth as they do at the Fosterville Mine. The IP results will hopefully indicate better mineralised splays as drill targets and indicate increasing sulphide mineralisation with depth.

#### Miepoll Exploration Licence

Exploration Licence EL 6352, Miepoll, of 456 sq km is to the north east of Wandean and the Nagambie Mine.

Within the north-east portion of EL 6352 (refer Figure 3), modern explorers carried out preliminary soil sampling some 30 years ago at Tubbs Road and Shire Dam Road. Tubbs Road had been mined historically with recorded gold production of 50 ounces, which is encouraging as the "old timers" must have been able to see the fine gold in a pan – something they were apparently unable to do at the Nagambie Mine and Wandean.



# Figure 3 North-east portion of Miepoll EL 6352

Recent structural geology mapping by Nagambie Resources has identified the approximate locations of anticlinal fold axes and one related East-West thrust (refer Photo 2) in the vicinity of the Tubbs Road and Shire Dam Road occurrences.

It is planned to carry out detailed proprietary soil sampling in the area. An Aeromagnetic survey over EL 6352 will also be carried out in the future to test for additional East-West structures and complete the surveying of all the company's tenements in the Nagambie region, which now total over 1,000 sq km.

## **GOLD TENEMENT CHANGES**

Nagambie Resources group tenements as at 30 September 2017 are shown in Appendix 1 (plan and table).

EL6508 (Tabilk) of 84.0 sq km was granted during the quarter.



Photo 2 An East-West Thrust (red lines), looking east, in new Miepoll Exploration Licence

The black lines show major breaks in the sandstones and siltstones. The blue arrows indicate movement is left side (north) over the right side (south).

# PASS PROJECT

PASS stands for **P**otential **A**cid **S**ulphate **S**oil (or silt or rock). PASS occurs naturally in an anaerobic state below the water table. It is soil, silt or rock containing sulphidic material, principally pyrite (iron sulphide). It is free of any anthropogenic (human made) contamination. PASS is not contaminated soil, nor is it toxic. PASS only becomes a problem when it is excavated from below the water table and exposed to the air for a significant period of time. If excavated PASS is stored above the water table and not thoroughly mixed with sufficient lime, the pyrite will oxidise over time into sulphuric acid and sulphates, resulting in acid drainage.

Underwater storage is the most preferred solution for Melbourne PASS as it prevents the oxidation of the pyrite in the material. The water in the two Nagambie Mine open pits is naturally saline and alkaline, making it ideal for PASS management. Total PASS storage capacity at the site is approximately 6.0 million tonnes, of which 2.5 million tonnes in the West Pit is already fully developed.

Actual developed PASS storage at alternative sites in Melbourne appears to be small by comparison.

Nagambie Resources has continued to receive feedback on its updated Work Plan, incorporating recycling of the tailings and overburden dumps and the backfilling of the West Pit with PASS material, from Earth Resources Regulation (ERR) (a Section of the Victorian Department of Economic Development, Jobs, Transport and Resources). The Company is continuing to prepare its final submission to ERR. No outstanding issues are envisaged.

## Future PASS Tenders

Nagambie Resources remains very confident of being awarded large tonnages of PASS management in the tenders to come for major infrastructure projects in Melbourne. Continuously-operated tunnel boring machines (TBMs) are typically used for major infrastructure projects and the PASS generated by them requires uninterrupted handling, transport and management.

The major infrastructure projects that will be of particular interest to Nagambie Resources for PASS Management will be the main Melbourne Metro Rail Project (MMRP) starting in CY2018, the North East Link Project (NELP) starting in CY2019 and the East West Link Project (EWLP) (which is recommended by both Infrastructure Australia and Infrastructure Victoria).

The Environmental Effects Statement for the MMRP indicates that total PASS to be managed will be around 1.4 million tonnes. The extent of tunnelling for the NELP will be announced at the end of CY2017 when the preferred route is announced by the State Government. The timing and extent of tunnelling for the EWLP is unknown at this stage but the original project involved over 2 million tonnes of PASS material.

## QUARRYING

## Expired Contractor Agreement

The three-year agency agreement between the Company and a contractor expired on 24 December 2016.

As previously reported, Nagambie Resources had been subjected to a litigation claim by the contractor in relation to matters regarding the non-renewal of the agency agreement.

The Company always remained of the view that the contractor's claim was without merit and, during the quarter, the Court ordered that the proceedings be struck out and that the contractor pay Nagambie Resources' costs of defending the proceedings.

#### Dry Screening of Mine Tailings to Produce Aggregates for Concrete

Following consultation with relevant industry participants, the Company is planning to dry screen tailings on the historic heap leach pad at the Nagambie Mine to separate the aggregates from the fine material. Four sizes of aggregates (7mm, 10mm, 14mm and 20mm) will be produced for sale to concrete manufacturers in regional Victoria and Melbourne. The market for concrete aggregates of consistent quality and reliable long term supply is strong because of the accelerated infrastructure work being carried out in the CBD and outer reaches of Melbourne.

Mobile, track-mounted, diesel-hydraulic, multiple-frequency screening units have recently become available in Australia (refer Photo 1). They can be operated on their own or in series, allowing great flexibility in operations. Nagambie Resources has decided on the unit that it wishes to purchase.

The fine material from the screening process will be stockpiled and regularly sampled and assayed for gold content. Nagambie Resources considers that the fines may well have been over-represented in impermeable zones that formed on the pad during the 1990s heap leaching, and thus be higher in gold content. The fines would only need to be re-agglomerated before being heap leached again to recover residual gold.



## Photo 1 Type of Mobile Tracked Screening Unit now available in Australia

## Supply of Mine Tailings "as is" as Compaction Base Material

The Company is continuing to supply heap leach material "as is" as high-compaction gravel for road base and for use under concrete slabs. Sales have increased significantly since the winter rains.

#### Supply of Clay to a Neighbouring Shire

The Company tendered for the supply of significant quantities of clay to a neighbouring Shire during the March 2017 quarter but the project as planned was abandoned during the September 2017 quarter. It is understood that Nagambie Resources was one of only a few remaining shortlisted tenderers.

# CORPORATE

# Cash

At 30 September 2017, total cash held by the group was \$680,000 with \$750,000 remaining undrawn under the two-year \$1.0 Million Unsecured Loan Facility.

Following the board's decision to conserve cash wherever possible, cash outgoings for operations and administration (excluding exploration) for the September 2017 quarter totalled \$284,000, \$247,000 less than the equivalent \$531,000 incurred in the June 2017 quarter.

Cash received for the September 2017 quarter totalled \$137,000, \$53,000 less than the \$190,000 received in the June 2017 quarter. The reduction related to the expected drop off in gravel sales during the winter months.

As a result, net cash outgoings for operations and administration (excluding exploration) for the September 2017 quarter were \$147,000, \$194,000 less than the equivalent \$341,000 in the June 2017 quarter.

James Earle Chief Executive Officer

#### STATEMENT AS TO COMPETENCY

The Exploration Results in this report have been compiled by Mr Geoff Turner, who is a Fellow of the Australian Institute of Geoscientists, has more than ten years in the estimation, assessment, and evaluation of mineral resources and ore reserves, and has more than 20 years in exploration for the relevant style of mineralisation that is being reported. In these regards, Geoff Turner qualifies as a Competent Person as defined in the 2012 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Geoff Turner is a Director of Nagambie Resources Limited and consents to the inclusion in this report of these matters based on the information in the form and context in which it appears.

## FORWARD-LOOKING STATEMENTS

This report contains "forward-looking statements" within the meaning of securities laws of applicable jurisdictions. Forward-looking statements can generally be identified by the use of forward-looking words such as "may", "will", "expect", "target", "intend", "plan", "estimate", "anticipate", "believe", "continue", "objectives", "outlook", "guidance" or other similar words, and include statements regarding certain plans, strategies and objectives of management and expected financial performance. These forward-looking statements involve known and unknown risks, uncertainties and other factors, many of which are outside the control of Nagambie Mining and any of its officers, employees, agents or associates. Actual results, performance or achievements may vary materially from any projections and forward-looking statements and the assumptions on which those statements are based. Exploration potential is conceptual in nature, there has been insufficient exploration to define a Mineral Resource and it is uncertain if further exploration will result in the determination of a Mineral Resource. Readers are cautioned not to place undue reliance on forward-looking statements and Nagambie Resources assumes no obligation to update such information.

# APPENDIX 1



# APPENDIX 1 (Continued)

Tenement Number	Tenement Name	sq.km
MIN 5412	Nagambie Mining Licence	3.6
EL 5430	Bunganail Exploration Licence	182.0
EL 5511	Nagambie Exploration Licence	27.9
EL 5536	Wandean North Exploration Licence	48.0
EL 6212	Reedy Lake North Exploration Licence	41.0
EL 6158	Rushworth Exploration Licence	56.0
RL 2019	Doctors Gully Retention Licence	4.0
EL 6352	Miepoll Exploration Licence	455.8
EL 6421	Pranjip Exploration Licence	138.7
EL 6508	Tabilk Exploration Licence	84.0
		1,037.4
EL 6163	Clonbinane South Exploration Licence	78.2
RL 6040	Clonbinane Retention Licence	3.0
EL 5546	Redcastle Exploration Licence	53.7
		1,175.9

# Nagambie Resources Group Tenements as at 30 September 2017