

## Quarterly Report September 2022

### HIGHLIGHTS

- **NAD008 intersection of C1 vein at the 100%-owned Nagambie Mine: 0.8m estimated horizontal thickness (EHT) @ 3.41 g/t gold (Au), 5.13% antimony (Sb) and 15.52 g/t gold equivalent (AuEq) within 1.2m EHT @ 2.29 g/t Au, 3.46% Sb and 10.45 g/t AuEq.**
- **Very-high-grade Sb in various samples for drill holes NAD009-011 has resulted in assay delays as an alternative laboratory technique for the very-high-grade Sb assays is now being applied.**
- **More Sb mineralisation intersected in NAD012, 200m west of the C1/C2 vein system and also striking N-NNW. This mineralisation further confirms the expanded structural model for high-grade, antimony-gold, cross-fault mineralisation at the Nagambie Mine, and points to significant cross faulting potentially occurring to the SW of the West Pit**
- **First ever visible gold at the Nagambie Mine intersected at 150m vertical depth in NAD013 – points to gold grades potentially increasing with depth, as they do at both the Costerfield and Fosterville Mines.**
- **Significant new funding totalling \$2.5M, after the redemption of \$1.8M of convertible notes, raised to accelerate the diamond drilling of the high-grade antimony-gold veins at the Nagambie Mine and to add to working capital.**
- **Warwick Grigor appointed as a Director of Nagambie Resources. Warwick has over 40 years' experience in the investment and gold mining sectors and is currently the Chairman of Far East Capital, an AFSL accredited private investment bank that specialises in the mining sector, providing independent research, corporate advice and capital raising services.**

### COMMENTARY

**Nagambie Resources' Executive Chairman, Mike Trumbull**, commented: *"We have been anticipating some impressive assays from the NAD009-011 intersections of the C1/C2 antimony-gold vein system. It is bittersweet therefore that the results have been delayed because some of the antimony numbers are extremely high in terms of what the exploration laboratory is accustomed to. The highest antimony assay in the NAD008 intersection was 16.9% Sb, so the awaited assays could be considerably higher than that. The highest antimony assay in the 2006 NRP02 intersection of 60.2% Sb came from a different laboratory that no longer operates.*

*"The Company is very pleased that Warwick Grigor has joined the Board. He is widely regarded in the industry as one of the most capable analysts and investment bankers with a broad range of experience and skills that is unparalleled in Australia. Warwick adds considerable depth and strategic acumen to the Board at a particularly exciting juncture in the development of Nagambie's resources."*

533 Zanelli Road  
Nagambie Vic 3608  
Australia

ASX : NAG  
[www.nagambieresources.com.au](http://www.nagambieresources.com.au)  
T : +61 (03) 5794 1750  
E : [info@nagambiemining.com.au](mailto:info@nagambiemining.com.au)

**Executive Chairman**  
Michael Trumbull

**CEO**  
James Earle

**Non-Executive Directors**  
Alfonso Grillo  
Bill Colvin  
Warwick Grigor

For Enquiries:

James Earle (CEO):  
[james@nagambieresources.com.au](mailto:james@nagambieresources.com.au)

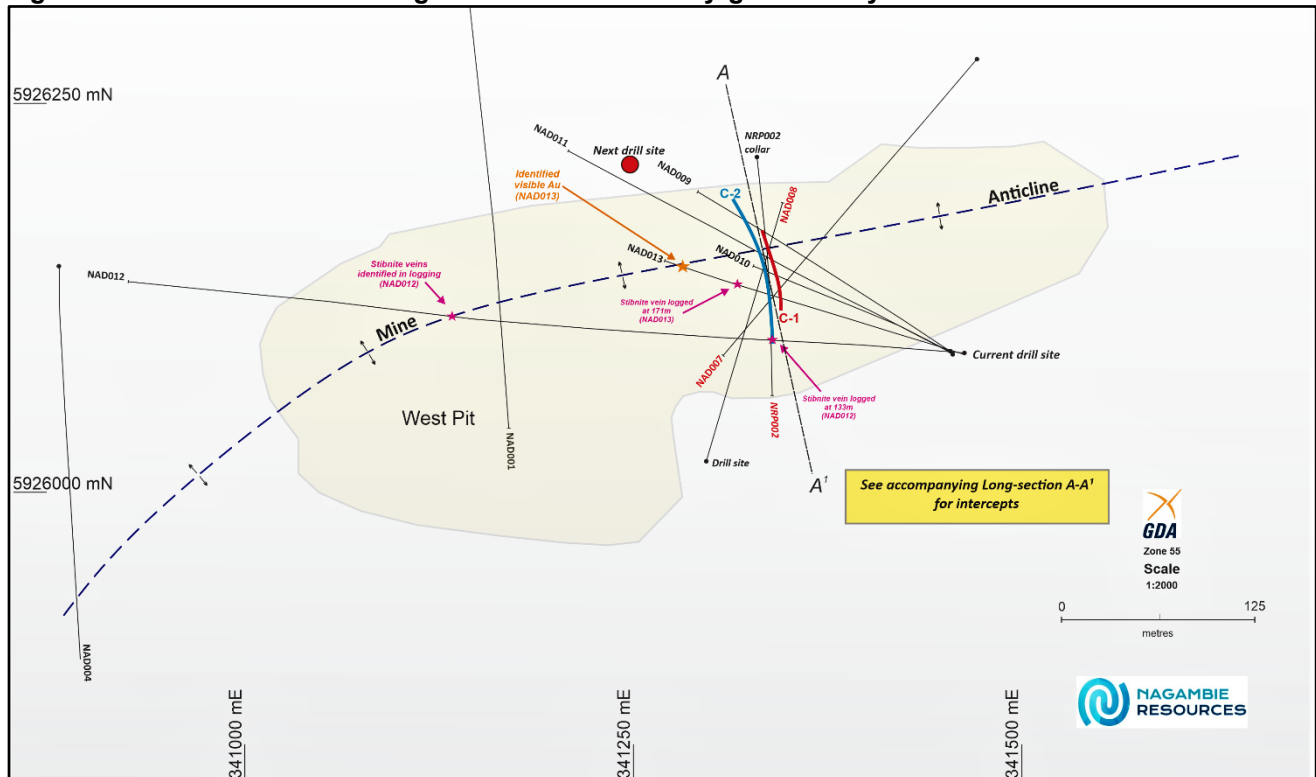
Sam Jacobs:  
[sam.jacobs@sdir.com.au](mailto:sam.jacobs@sdir.com.au)

## GOLD EXPLORATION

### Costerfield-Mine-Style, Antimony-Gold Veins at Nagambie Mine

Assay results are still awaited for diamond holes NAD009-011 in the C-Veins 2022 program (refer Figures 1 and 2).

**Figure 1 Plan: Diamond drilling of the C1/C2 antimony-gold vein system**



### Antimony-Gold Vein Intersections to Date

All intersections of the C1/C2 vein system to date that average mineable cut-off grade (MCOG, 3.0 g/t AuEq) or greater, have an EHT of 1.2m or greater (after waste dilution is added if required), and that have an Sb grade of 1.0% or greater (indicating significant antimony-gold veining) are summarised in Table 1.

**Table 1 C1/C2 Veins: All Intersections => 1.2m EHT, => MCOG, and => 1.0% Sb**

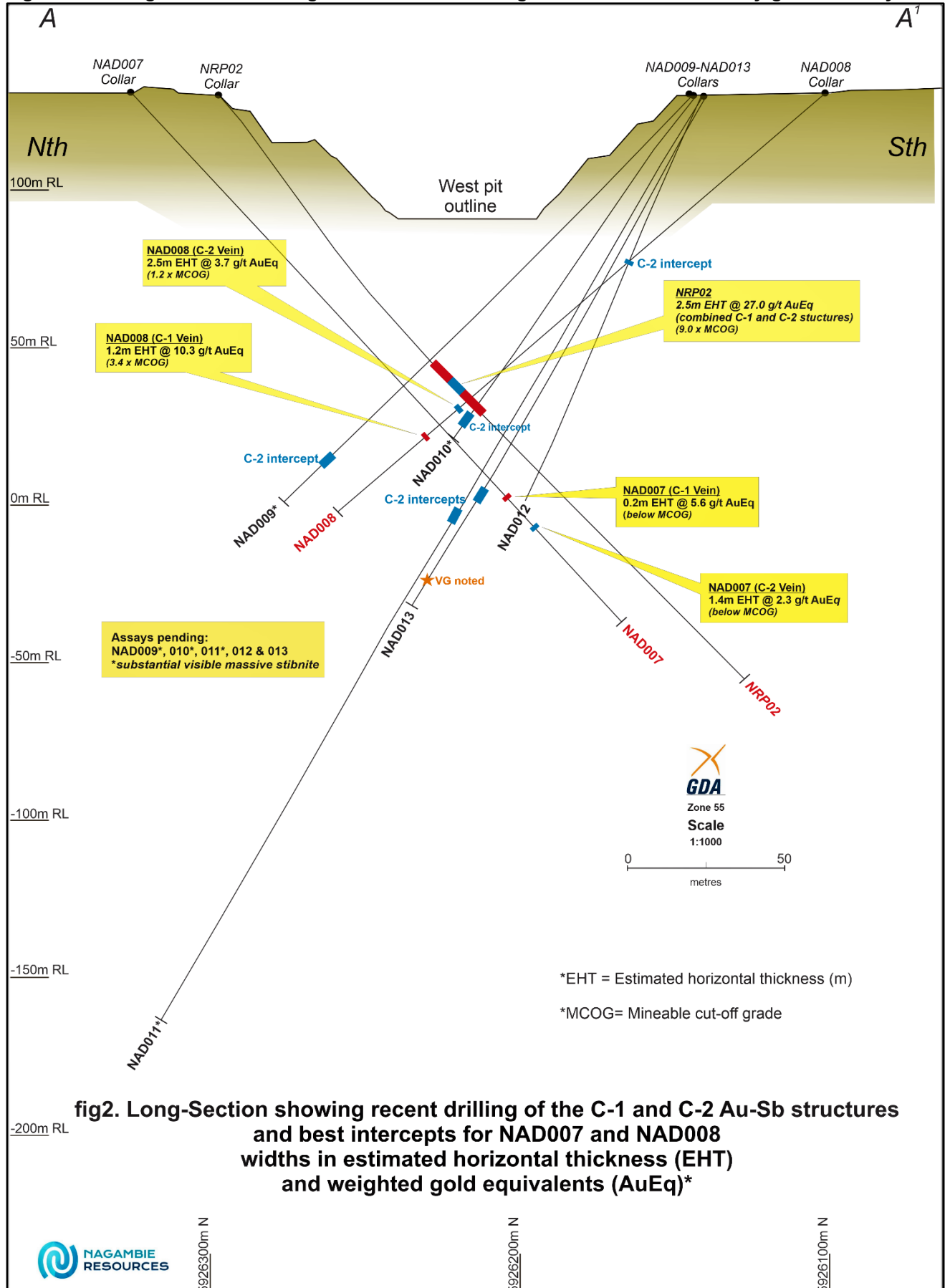
Intersection	BD of unmineralised waste: 2.74 BD of pure Stibnite: 4.56				EHT and BD Weighting					Times MCOG
	EHT (m)	Au Assay (g/t)	Sb Assay (Sb %)	AuEq (g/t)	BD based on Sb%	EHT & BD Weighted Au	EHT & BD Weighted Sb	EHT & BD Weighted AuEq		
NRP02 C1+C2	2.50	4.84	7.51	22.55	2.89	5.42	9.15	27.01	9.0	
NAD008 C1	1.20	2.24	3.23	9.85	2.79	2.29	3.46	10.45	3.5	
Average To Date	1.85				2.86	4.43	7.35	21.77	7.3	

### Early Trends

The C-style cross-fault veins are associated with the E-W-striking Nagambie Mine Central Anticline and the various E-W-striking thrust faults, all of which dip to the north (due to the N to S compression event at the time of first mineralisation, circa 375 Ma) and are known to continue regionally to kilometres in depth.

The most northern intersection to date, NAD009 – C2 (refer Figure 2), contains solid massive stibnite, indicating that the vein system is open to the north. The NAD011 – C2 intersection (refer Figure 2) is the deepest significant intersection to date, based on the visual logging of massive stibnite veins within it. The NAD012 – C2

**Figure 2 Long Section looking E: Diamond drilling of the C1/C2 antimony-gold vein system**



**fig2. Long-Section showing recent drilling of the C-1 and C-2 Au-Sb structures and best intercepts for NAD007 and NAD008 widths in estimated horizontal thickness (EHT) and weighted gold equivalents (AuEq)\***

intersection (refer Figure 2) is the shallowest stibnite intersection to date, occurring just below the base of oxidation at around 50m vertical depth.

Based on the above intersections, the strike length and vertical depth of the C1/C2 vein system could be around 60m and 80m respectively but are expected to increase substantially, particularly at depth, with further drilling.

### **Mining-Method Considerations and Developed Assay-Reporting Criteria**

During the quarter, Mining Plus, a global mining services provider, reviewed the assay-reporting criteria developed by Nagambie Resources for the antimony-gold veins drilling program at the Nagambie Mine and agreed that the criteria were appropriate and meaningful in terms of reporting to the ASX. The developed criteria draw heavily on the publicly-available information for the antimony-gold Costerfield Mine, 45 km to the west of the Nagambie Mine.

- 1) The C-veins (Costerfield-Mine-style veins) at the Nagambie Mine are generally striking N to NNW and dipping vertically or sub-vertically to the W (similar to the Costerfield Mine).
- 2) The C-veins could be mineable from ~50m vertical depth from surface, the depth of the oxidised zone, away from the West Pit and deeper under the West Pit. An appropriate vertical geotechnical pillar under the West Pit would be determined in due course but could be of the order of 10m.
- 3) The mining method could be up-hole-drill stoping with ore drill drives 10m vertically apart (as for the Costerfield Mine). Cemented rock fill (using underground development waste) would allow for future stopes above, below and besides each filled stope (also as for the Costerfield mine).
- 4) Minimum stoping width could be 1.2m estimated horizontal thickness (EHT) (similar to the Costerfield Mine).
- 5) For stopes side by side, the waste between them should be at least 1.5m EHT to cover the additional costs of strike driving, stoping, backfilling and potential dilution for multiple stopes.
- 6) All individual sample assays to be weighted by both EHT and sample bulk density (BD) – using the Costerfield Mine BD formula based on Sb% (see below).
- 7) Gold equivalent grade (g/t AuEq) to be calculated for each sample by multiplying the Sb% by the AuEq factor and adding to that the g/t Au. For the relevant formula, see below.
- 8) All intersection grades (Au, Sb, AuEq) to be reported for the EHT of the vein and, where the vein EHT is less than 1.2m, for the minimum mineable EHT of 1.2m by adding appropriate waste dilution (similar to the Costerfield Mine).
- 9) Mineable cut-off grade (MCOG) of 3.0 g/t AuEq over 1.2m EHT or greater (similar to the Costerfield Mine).

### **Bulk Density Calculation**

BD is calculated for each intercept using the formula that the Costerfield Mine uses for the Augusta, Cuffley and Brunswick orebodies - refer page 191 of the 2022 Technical Report for the Costerfield Mine:

( [www.mandalayresources.com/operations/overview/costerfield-mine/mnd\\_costerfield\\_ni-43\\_101\\_technical](http://www.mandalayresources.com/operations/overview/costerfield-mine/mnd_costerfield_ni-43_101_technical) )

Formula:

$$BD = ((1.3951 * Sb\%) + (100 - (1.3951 * Sb\%))) / (((1.3951 * Sb\%) / 4.56) + ((100 - (1.3951 * Sb\%)) / 2.74))$$

for which:

- Empirical formula of stibnite: Sb<sub>2</sub>S<sub>3</sub>
- Sb%: Antimony assay as a percentage by mass
- Molecular weight of Antimony (Sb): 121.757
- Molecular weight of Sulphur: (S): 32.066
- 1.3951 is a constant calculated by 339.712/243.514 where 339.712 is the molar mass of Sb<sub>2</sub>S<sub>3</sub>, and 243.514 is the molar mass of antimony contained in one mole of pure stibnite
- BD of pure stibnite: 4.56
- BD of unmineralised waste (predominantly sandstones, siltstones, mudstones): 2.74

In time, when a sufficiently representative range of diamond core material is available, Nagambie will need to calculate the BD of the unmineralised waste (predominantly sandstones, siltstones and mudstones) at the Nagambie Mine. However, Nagambie does not consider that it will vary significantly from 2.74.

Nagambie considers that the above bulk density formula, while being appropriate, is a little conservative in that, for both the Costerfield Mine and the Nagambie Mine, the stibnite (Sb<sub>2</sub>S<sub>3</sub>) is known to contain variable amounts of the gold-antimony mineral, aurostibite (AuSb<sub>2</sub>). While pure stibnite has a BD of 4.56, aurostibite has a BD of 9.98, reflective of its very high gold content – meaning that otherwise pure stibnite containing aurostibite will have a BD greater than 4.56.

### **Gold Equivalent Factor**

Nagambie considers that both gold and antimony will be economically recoverable at the Nagambie Mine, as they are at the Costerfield Mine which is 45 km to the west of the Nagambie Mine.

The gold-antimony Costerfield Mine currently calculates its gold equivalent (AuEq) factor, the relative value of 1.0% antimony (Sb) in the mine to 1.0 gram / tonne gold (Au) in the mine as:

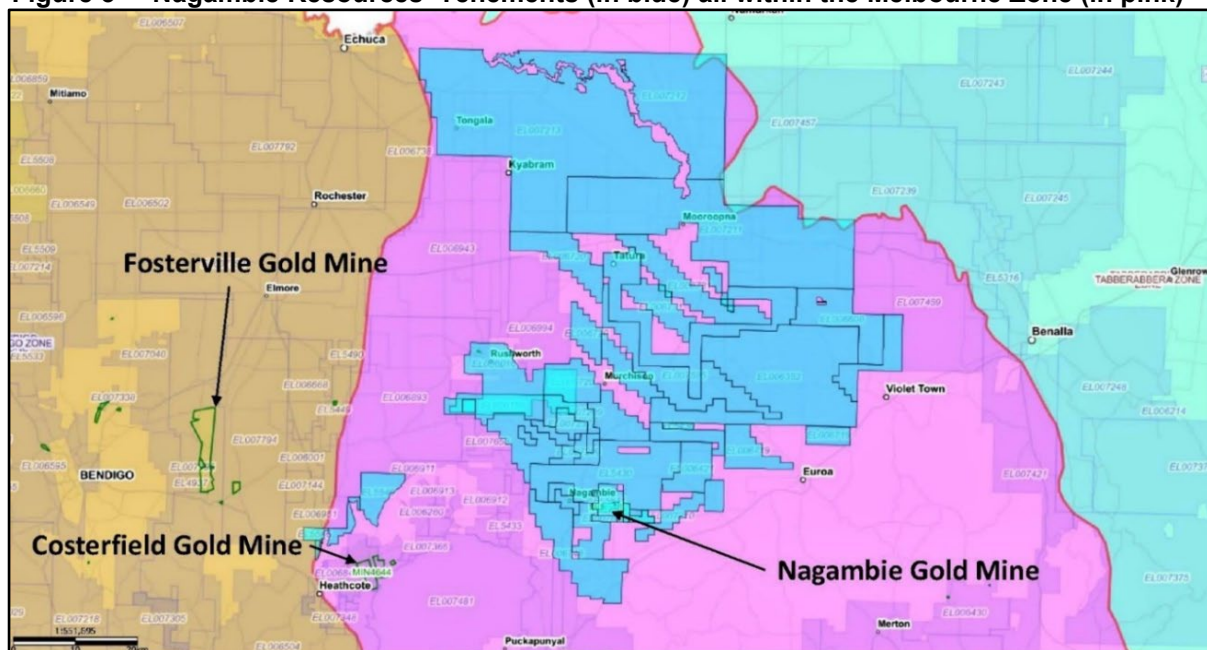
$$\text{AuEq factor} = \frac{[\text{US\$/tonne antimony price} \times 0.01 \times 0.95 \text{ antimony recovery}]}{[\text{US\$/ounce gold price} / 31.10348 \text{ grams per ounce} \times 0.93 \text{ gold recovery}]}$$

The Costerfield Mine is 100% owned by Mandalay Resources Corporation and the latest projections for CY2022 on the [Mandalay website](#) adopt average CY2022 prices for gold and antimony of US\$1,750/ounce gold and US\$13,000/tonne antimony (refer Graph 2). For these prices, the AuEq factor using the above equation is **2.36**.

### **Gold Tenements**

The Company's tenements as at 30 September 2022, totalling 3,336.5 sq km, are listed in Table 2 and their general location in central Victoria is shown in Figure 3.

**Figure 3 Nagambie Resources' Tenements (in blue) all within the Melbourne Zone (in pink)**



### **Redcastle and Whroo Joint Ventures with Southern Cross Gold (ASX: SXG)**

Southern Cross currently manages gold exploration within the Redcastle and Whroo JV Properties of 75 sq km and 179 sq km respectively.

**Whroo JV Property** (NAG currently 100%, SXG has the right to earn up to 60% or 70% at Nagambie Resources' option)

No material activity during the quarter.

**Redcastle JV Property** (SXG currently 70%, NAG 30%)

No material activity during the quarter.

**Table 2 Nagambie Resources Tenements as at 30 September 2022**

Tenement Number	Tenement Name	sq km
MIN 5412	<b>Nagambie Mining Licence</b>	<b>3.5</b>
EL 5430	Bunganail Exploration Licence	160.0
EL 5511	<b>Nagambie Central Exploration Licence</b>	21.0
EL 6352	Miepoll Exploration Licence	342.0
EL 6508	Tabilk Exploration Licence	33.0
EL 6606	Gowangardie Exploration Licence	88.0
EL 6719	Euroa Exploration Licence	81.0
EL 6720	Tatura Exploration Licence	145.0
EL 6731	Arcadia Exploration Licence	218.0
EL 6748	Waranga Exploration Licence	102.0
EL 6937	<b>Nagambie East Exploration Licence</b>	2.0
EL 6877	<b>Nagambie Exploration Licence</b>	8.0
EL 7207	Arcadia Exploration Licence	156.0
EL 7208	Cullens Road Exploration Licence	29.0
EL 7210	Locksley Exploration Licence	26.0
EL 7211	Shepparton Exploration Licence	444.0
EL 7212	Shepparton North Exploration Licence	321.0
ELA 7213	Pederick Exploration Licence Application	683.0
EL 7264	Resource Recovery Exploration Licence	1.0
ELA 7265	<b>Nagambie Town Exploration Licence Application</b>	8.0
EL 7594	Miepoll East Exploration Licence	47.0
ELA 7595	<b>Miepoll West Exploration Licence Application</b>	113.0
ELA 7690	<b>Nagambie South Exploration Licence Application</b>	4.0
ELA 8082	<b>Tabilk North Exploration licence Application</b>	7.0
ELA 8083	<b>Tabilk East Exploration Licence Application</b>	40.0
<b>Subtotal</b>	<b>Waranga Domain excluding Whroo JV Property</b>	<b>3,082.5</b>
EL 6158	Rushworth Exploration Licence	46.0
EL 6212	Reedy Lake North Exploration Licence	17.0
EL 7205	Angustown Exploration Licence	49.0
EL 7209	Goulburn West Exploration Licence	34.0
EL 7237	Kirwans North (1) Exploration Licence	20.0
EL 7238	Kirwans North (2) Exploration Licence	9.0
RL 2019	Doctors Gully Retention Licence	4.0
<b>Subtotal</b>	<b>Whroo JV Property with SXG</b>	<b>179.0</b>
	<b>Total Waranga Domain</b>	<b>3,261.5</b>
EL 5546	Redcastle Exploration Licence	51.0
EL 7498	Cornella Exploration Licence	19.0
EL 7499	Sheoak Exploration Licence	5.0
<b>Subtotal</b>	<b>Redcastle JV Property with SXG</b>	<b>75.0</b>
<b>TOTAL</b>	<b>Nagambie Resources Limited Tenements</b>	<b>3,336.5</b>

### Acquisition of Almonte Auto Core Saw

Nagambie acquired a 3-phase-powered Almonte core saw (refer Photo 1) during the quarter, similar to one owned by the Costerfield Mine. The auto core saw gives the best possible half-core samples for assaying and eliminates any injuries that were a possibility with the old system of hand feeding core to an open circular diamond saw blade.

### NAGAMBIE GOLD TREATMENT PLANT

Nagambie Resources and Golden Camel Mining (GCM) are proceeding with the construction and operation of a 300,000 tonnes per annum toll treatment facility at the Nagambie Mine. GCM is the Manager and is paying 100% of all additional infrastructure, construction and commissioning costs – thereafter, all revenues and operating costs will be shared 50:50. Initial feed for the plant is to be trucked from GCM's Golden Camel Mine.

GCM has been refurbishing key components of the plant and is finalising financial arrangements with an external party. GCM has advised Nagambie that commissioning of the CIL toll treatment plant at the Nagambie Mine is now scheduled for the September quarter 2023.

**Photo 1 Almonte Auto Core Saw in Nagambie's Core Shed**



### **POTENTIAL BACTERIAL RECOVERY OF GOLD IN 1990s HEAP LEACH PAD**

Total recorded gold production from the Nagambie Mine cyanide heap between 1989 and 1997 was 134,000 ounces and Nagambie Resources considers that a significant amount of gold remains in the heap. Extracting this gold in a toll treatment plant or by additional cyanide heap leaching is currently not viable or economic.

Stage 1 of the Bioleaching Project was completed with the findings being that gold can be bioleached from the tailings using native and externally sourced bacteria when suitable conditions are provided. Further research was recommended to refine and improve the rate of gold bioleaching.

\$50,000 of funding assistance for Stage 2 of laboratory testwork, using larger samples from the Nagambie Mine and more bacteria options, has been approved under the Federal Government's Innovation Connections Program. The Perth-based laboratory, which is carrying out the work, has agreed to contribute an additional \$55,000 to the Stage 2 work given its positive assessment of the project. The Stage 2 work is to commence in November 2022.

## **PASS STORAGE**

The Spark consortium announced that it had placed orders for two large tunnel-boring machines (TBMs) to excavate the road tunnels for the North East Link Project (NELP), commencing early in CY2024. The consortium has not yet placed orders for the storage of the 7 Mt of PASS material (potential acid sulfate soil and rock) that will be generated. Nagambie Resources remains one of the bidders for the NELP PASS storage.

## **CORPORATE**

### **Cash**

At 30 September 2022, total cash held by the group was \$1,103,000.

### **\$3.257 Million Issue of Series 10 Convertible Notes**

A total of \$3.257 million of Series 10 unsecured convertible notes were issued at 8.0 cents per note during the quarter. \$1.8 million of the funds raised was used for the early redemption of the Series 6 notes (which had been due to expire on 17 November 2022) with the balance, \$1.457 million, to be used to continue drilling the antimony-gold C-vein targets at the Nagambie Mine and for general working capital. Far East Capital (FEC) was the Lead Manager for the raising.

### **\$1.087 Million Share Placement**

Post quarter, a total of \$1.087 million of fully-paid ordinary shares were placed at 7.0 cents per shares in October 2022. The funds are to be used to continue the C-veins drilling program at the Nagambie Mine and to add to general working capital. FEC was the Lead Manager for the raising.

### **Mawson Gold Limited Shares (TSX: MAW)**

At 30 June 2022, Nagambie Resources held 1.625 million MAW shares which had a total market value at the time of \$220,000. During the September quarter, the remaining MAW shares were sold for \$193,000.

### **Director Appointment**

Warwick Grigor was appointed as a Director on 4 October 2022. He has over 40 years' experience in the investment and gold mining sectors, having worked with numerous stock broking and investment banking organisations. More recently he was the founding Chairman of Canaccord Genuity Australia. He retired from Canaccord in 2014 to resume his Chairmanship with Far East Capital Limited, an AFSL accredited private investment bank that specialises in the mining sector, providing independent research, corporate advice and capital raising services.

### **Related Party Payments**

In accordance with its obligations under ASX Listing Rule 5.3.5, Nagambie Resources advises that the only payments made to related parties of the Company in the quarter, as set out in item 6.1 of the accompanying Appendix 5B, were in respect of directors' and consulting fees.

By the order of the Board.



James Earle  
Chief Executive Officer

## **STATEMENT AS TO COMPETENCY**

*The Exploration Results in this report have been compiled by Adam Jones who is a Member of the Australian Institute of Geoscientists (MAIG). Adam Jones has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration, and to the activity which 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". He 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 Resources 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.*

### **For further information, please contact:**

**James Earle (CEO)**

**Email:** [james@nagambieresources.com.au](mailto:james@nagambieresources.com.au)

**Phone:** +61 481 462 642

**Sam Jacobs**

**Email:** [sam.jacobs@sdir.com.au](mailto:sam.jacobs@sdir.com.au)

**Phone:** +61 423 755 909

### **About Nagambie Resources:**

[www.nagambieresources.com.au](http://www.nagambieresources.com.au)

Oriented diamond drilling of structurally-controlled, high-grade antimony-gold underground targets within the Nagambie Mine Mining Licence and elsewhere in the 3,000 sq km of tenements in the Waranga Domain is being methodically carried out.

Nagambie Resources and Golden Camel Mining (GCM) have received approval for the construction and operation of a CIL gold toll treatment plant at the Nagambie Mine. GCM is paying 100% of all construction and commissioning costs; thereafter all revenues and costs will be shared 50:50. A future antimony flotation circuit is also planned.

Underwater storage of sulphidic excavation material (PASS) in the two legacy gold pits at the Nagambie Mine is an excellent environmental fit.

Bacterial recovery of residual gold from the 1990s heap leach pad is being investigated.

Mining and screening of sand and gravel deposits at the Nagambie Mine is also planned.