

31 Jan 2023

# **Company Details:**

ASX: NSM

ACN: 633 461 453

www.northstawellminerals.com

## Capital Structure

Shares: 120.127M

Performance rights: 1.18M

Share Price \$0.195

Cash: \$5.0M

Market Cap: \$23.42M

#### **Project**

North Stawell Gold Project



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# Highlights:

- Results from regional air core drilling highlight two areas that required continued follow-up drilling to expand initial significant results – setting exciting targets for upcoming drill programs.
- Selected results include:
   1m at 4.31 g/t Au from 0m (NSAC0410)
   3m at 1.61 g/t Au from 75m (NSAC0442)
   1m at 1.65 g/t Au from 98m (NSAC0410)
   1m at 1.36 g/t Au from 107m (NSAC0410)
   1m at 1.03 g/t Au from 29m (NSAC0429)
   0.85m at 5.65 g/t Au from 201.2 (DAD001)
- 87 anomalous intercepts were returned from 43 air core holes at 2 prospects, validating the exploration strategy targeting geophysical structures under cover that are possible repeats of the multi-million ounce Stawell mineralisation.

Phase 2 infill AC drilling at Caledonia has identified significant grade following up on broad low-grade anomalism: 1m at 1.65 g/t Au from 98m (NSAC0410) and 3m at 1.61 g/t Au from 75m (NSAC0442). The drilling demonstrates 250m strike length, open to the north, south and at depth.

- Assaying previously unsampled drillcore at Darlington returned 0.85m at 5.65 g/t Au from 201.2m (DAD001), confirming 150m vertical extent to the 700m confirmed strike length, and highlighting the possibility of a highergrade plunging shoot for further drill targeting.
- The Lubeck Tip remains a priority target. No rain and cropped paddocks give access in early 2023. The mobilization of a Mantis200 rig (Jan 23) will improve drilling outcomes substantially.



#### **OVERVIEW**

Summarizing the December Quarter, North Stawell Minerals Chief Executive Officer Russell Krause commented:

"A prolonged wet season did not impact our drilling season significantly. Two of our emerging priority projects - the historic mine at Darlington and the Caledonia Prospect - are on higher ground and could be accessed. Both these Prospects have returned mineralisation down-dip and along strike and remain open, lifting confidence that the Prospects will continue to return exciting results, and build NSMs Project Pipeline.

Darlington has grown significantly as a target. Centered on the historic mine (1,100 oz Au at 21 g/t Au), shallow drilling confirms significant mineralisation over 700m. Within this, a central 150m zone with 3+ g/t Au assays occurs and is interpreted as the near-surface expression of a plunging shoot. An intercept of 5.6g/t Au (DAD001) at 140m vertically adds encouraging depth extent to a higher grade shoot interpretation, and possible plunge continuation is open to the north and/or south.

Caledonia is a success for NSMs target strategy, evolving from a surface soils gold-arsenic anomaly to a 250m strike target in a season. Follow up on a 12g/t Au intercept (NSR077) drilling has extended the 1+g/t Au in both directions and confirms the strike and dip of the target. Grades are open in both directions and down dip. Additional step-out drilling is complete and samples are with the lab.

Caledonia and Darlington are "bellweathers" for the successful execution of NSMs targeting and exploration strategy. Other key prospects, at Lubeck Tip, Forsaken, Challenger and Wimmera Park are all Phase 2 drilling targets that will be assessed in early 2023. Lubeck and Ashens are priority new targets. Phase 2 drilling is tasked to upgrade encouraging anomalism from last season and determine the strike and extents near surface. Best results will be further tested down dip and down plunge. A Wallis Mantis200, with significantly greater capability to drill the covered, northern targets has been mobilized to site, and its performance to date is excellent.

The NSM exploration strategy has proven effective. Three targets are already advanced to include significant gold intercepts. The success rate is attributed to a detailed mineralisation model and geophysically responsive exploration targets that enable effective targeting.

As well as Stawell-type mineralisation targets, Wimmera Park and Doctors Hill present the exciting prospect of granite-related mineralisation, with strong similarities to the Wonga Mine (294koz historic production).

NSM continues to back its good data and exploration with good science. A numerical modelling collaboration with CSIRO, Australia's national science agency, through the Kick-Start grants process is working to determine gold fluid pathways using high-resolution gravity inversion models. In-house mineral prospectivity mapping using multiple available datasets has confirmed many existing targets and generated 14 new targets for potential gold mineralisation and further enhances NSM's robust project pipeline.

The fast-advancing regional successes present NSM with an opportunity to revisit and reinterpret the mineralisation at Wildwood. A critical review of the Inferred Mineral Resource (54kz Au at 2.0 g/t Au (1g/t cutoff)) has commenced.



### **EXPLORATION ACTIVITIES**

Aircore Drilling recommenced in December with 46 holes completed, following a short delay for an extended wet season in Victoria. Drilling focused on the southern priority targets on "higher ground" and where rain had not pushed back harvest dates. The targets, Caledonia and Darlington, are both high priority, and both have returned results that determine strike, orientation and depth potential (Section 6). An air core rig with more power (Mantis 200) is onsite from January, tasked with drilling the deeper successful reconnaissance targets in the north of the NSM tenure where cover is deeper (Lubeck Tip, Forsaken, Challenger, Ashens)

Mineral Prospectivity mapping returned a whole-of-tenements assessment of mineralisation potential (Figure 1). The work confirms many existing targets, but also adds multiple additional targets that will be reviewed for future work. These newly determined targets, importantly, will help keep the NSM project pipeline robust for generative exploration.

Soils programs were continued in support of exploration, restricted to areas with shallow or absent cover.

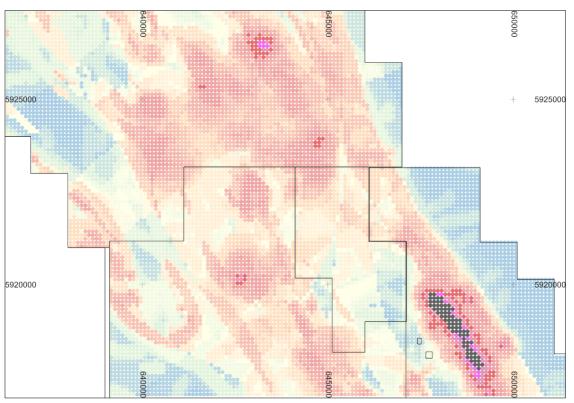


Figure 1 Detail of Mineral prospectivity mapping – confirms existing targets and adds 14 new opportunities for exploration. 'Hot' and black colours are areas with higher Mineral Prospectivity ranking (see section 6 for more details).



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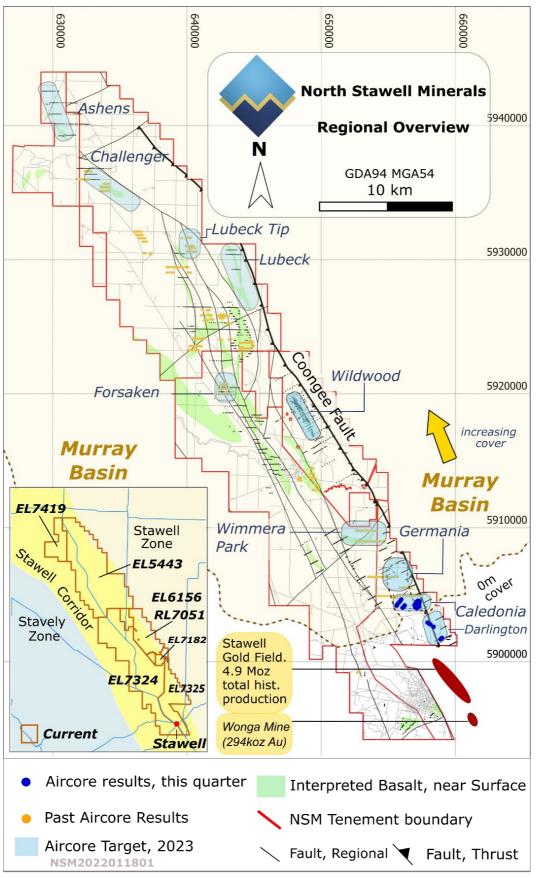


Figure 2 Overview of NSM tenements showing work don during the quarter and key prospects.

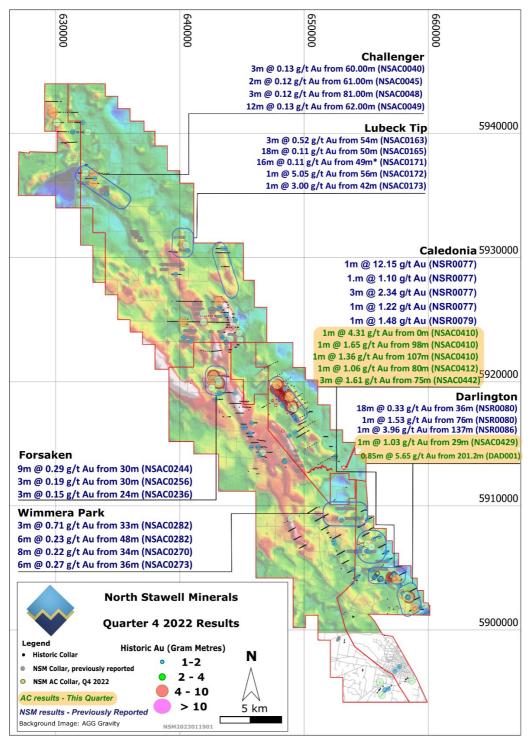


Figure 3 Summary of drilling results, including historic NSM results with AGG gravity as the background image. A full list of drilling results is found in Appendix 2.

Areas where work has been completed are presented in Figure 2 and a summary of results in Figure 3. Discussion of these results, the NSM exploration strategy and planning and geology follow.

Assays from 43 air core drill holes were returned and include significant (1+ g/t Au (Table 2) and highly encouraging results for follow up (Table 4). Significant results were also returned from a historic diamond hole (DAD001) that were not previously sampled (Table 3).

Table 1 Significant gold results AC Drilling, October-December 2022.

Hole ID	Prospect	MGA54 Easting	MGA54 Northing	RL	Azi deg	Dip deg	Final Depth m	Results Significant>1gt Au
NSAC0410	Caledonia	657089	5904253	224	40	-60	112	1.00m @ 4.31 ppm from 0m
NSAC0410	Caledonia	657089	5904253	224	40	-60	112	1.00m @ 1.65 ppm from 98m
NSAC0410	Caledonia	657089	5904253	224	40	-60	112	1.00m @ 1.36 ppm from 107m
NSAC0412	Caledonia	657180	5904311	219	40	-60	113	1.00m @ 1.06 ppm from 80m
NSAC0429	Darlington	658973	5901746	208	240	-60	72	1.00m @ 1.03 ppm from 29m
NSAC0442	Caledonia	656954	5904229	226	40	-60	102	3.00m @ 1.61 ppm from 75m

Table 2 Significant gold results - previously unsampled historic diamond holes, October-December 2022.

Hole ID	Prospect	MGA54 Easting	MGA54 Northing	RL	Azi deg	Dip deg	Final Depth m	Results Significant>1gt Au
DAD001	Darlington	65832	5902793	210	223	-54	389	0.85m @ 5.65 g/t Au from 201.2m

See Figure 2, Figure 3 and body of text for Target locations.

Full results are summarised in Appendix 2 and are discussed below. Broad intercepts, or intercepts that form linear trends along interpreted geological structures, are priority targets for follow up infill drilling, as they are interpreted to indicate nearby bedrock mineralisation.

#### **Planned Works**

Work done is summarised in Figure 4. All planned activities were completed or commenced.

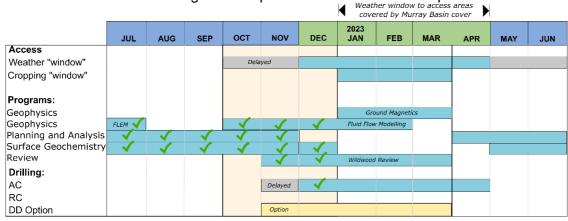


Figure 4 Planned work and exploration schedule, 2022-2023. Ticks indicate work is complete or on schedule.

Ongoing and future activities (Jan 23+) are summarized below.



## **Drilling**

**Phase 2 drilling** - Rig(s) have commenced **12,500m** program of Phase 2 (infill) AC drilling to test key results from last seasons reconnaissance drilling at Caledonia, Darlington, Wimmera Park, Forsaken, Lubeck Tip and Challenger Prospects (Figure 2).

#### This work will:

- Identify higher grade gold mineralisation within Phase 1 drilling anoalism
- harvest sufficient information on the orientation and extent of mineralisation to allow planning for deeper follow up of the targets.

**Phase 1 Reconnaissance Drilling** (continued) Rig(s), if time permits, have additional priority targets that can be tested to continue to build a robust exploration pipeline. Current targets include Lubeck (n.b. different to Lubeck Tip), Ashens (Figure 2) and 14 targets identified in regional prospectivity mapping (see below)

#### This work will:

- Efficiently test generative targets for gold, geochemistry and geology that indicates a mineral system occurs.
- Results will be reviewed and ranked and cued for follow up Phase 2 Infill drill programs.

**Phase 3 Depth Drilling** (conditional on successful Phase 2 drilling) – Deeper testing of significant results and determination of mineralisation orientation. Phase 2 drilling to date highlights Caledonia and Darlington as potential Phase 3 Drilling targets (Figure 2 and discussion below). The recently mobilized Mantis 200 AC rig has demonstrated potential to execute this drilling. Otherwise, a diamond drilling option is planned and budgeted.

## This work will:

 Conduct sequential step-outs with increasing depth to determine plunge and continuation of priority targets.

**Logistics** – NSM has not discounted mobilizing a second rig to "catch up" on time lost to weather and delayed harvests. Sourcing an appropriate rig and ensuring the exploration teams have capacity to effectively run a second rig at the forefront of this opportunity.

## **Geophysics**

**Numerical modelling** – complete numerical modelling in collaboration with CSIRO to identify potential structural dilation zones around geophysics-interpreted basalt dome geometries (based on inversion data)

### This work will:

 Potentially provide significant focus within larger target areas to refine drill programs to the areas most likely to have been a mineralisation pathway.

**Ground Magnetics and/or IP surveys** – system will be trialed over regional magnetics surveys associated with identified targets to determine if additional data resolution refines targets for drill testing - focused on targets where basalts have regional signatures or where disseminated sulphides are identified.

### This work will:

- Identify discrete magnetic anomalies that may be associated with magnetite or pyrrhotite associated with Stawell-type mineralisation.
- Refine stratigraphy of magnetically responsive rocks to understand local scale geology under cover.
- Identify discrete structures at local scale (if magnetically responsive).
- Test shallow targets with disseminated sulphides for drill targeting with IP geophysics.

### **Resources and Exploration Targets**

**Wildwood Resource** – the Wildwood Resource (Inferred Mineral resource of 55,000oz at 2 g/t Au) is being reviewed through Q1 and Q2 2023.

### The work will:

- Critically review and update prior work (geology, structure, QAQC and geological domaining).
- Incorporate NSM prior exploration into the resource estimation.
- Identify additional exploration opportunity based on review.

**Exploration Target determination** – A global exploration target will be determined to defensibly determine the potential Exploration Target for the NSM tenement portfolio. The work is possible with the delivery of the Mineral Prospectivity Mapping that better constrains the discrete geometry of targets.

### This work will:

- Determine the potential scale and scope of mineralisation (Stawell Like) using statistical methods and probabilities based on modern and historic mineralisation and mining to deliver a defensible Exploration Target.
- Help prioritise targets based on Exploration target expectation.
- Provide defensible guidance to stakeholders and investors as to the potential of the NSM ground.



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# **Exploration Outcomes - October - December 2022.**

The following work was commenced or completed during the reporting period.

Table 1 Summary of work completed during the Decemberr Quarter 2022.

	Focus	Summary of work completed in the Quarter	Outcomes (details in text)				
1	Regional geophysical data	Air core drilling refines inversion models.	Completion of AC drilling confirms inversion models as a high-value guide to drill targeting. Ground truthing refined inversion best-representing geology.				
		Non-Magnetic basalt targets.	Gravity only targets added to target lists based on drill-confirmation of near- surface basalts without mag signatures.				
		Numerical modelling to determine mineralisation pathways.	CSIRO complete structural review of possible dilation sites on interpreted basalts.				
2	Structural architecture	On-going geological and structural interpretation based on drilling.	Structural architecture data used as fields to inform prospectivity mapping				
3	Clear geological models for mineralisation	Continued discussion, paper review, report review of documents and concepts around Stawell Mine as a 'type deposit'.	"Best" targets are shallow (but not eroded) basalt domes to preserve exploration potential. Plunging fold hinges as highest priority targets.				
	mineralisation	Continued review of characteristics and controls of other known mineralisation.	Identified structural and architectural similarities to Wonga mineralisation (Intrusive-related) in NSM tenements – encouraging results from initial drilling.				
		Mineral Prospectivity Mapping	Regional assessment of mineralisation potential based on multiple geo-data and geo-knowledge datasets.				
4	Understanding the cover	Representative samples of all cover geology retained.	Recognise emerging potential for ionic REE in Tertiary cover (e.g., Mitre Hill).				
	sequences	Systematic water sampling.	Database of salinity (TDS) is groundwater.				
5	Historic data consolidation	Sampling of historic, unsampled core	Re-evaluation of mineralisation opportunities in historic regional drillholes				
6	Drilling and field work	AC: 43 holes results returned.	Phase 1 AC complete. Phase 2 Infill AC commenced. A total of 5 targets require follow-up, infill drilling. Two drilled in Quarter.				
		pXRF: surface and drilling	Multi-element pXRF data captured for all Addrilling and surface soil samples completed. Dat is for internal review and interpretation. Data intended for release.				
		Terraspec (spectral analyser) test work	Mineral-species data collection commenced to determine minerals in alteration/ composition of AC cores.				
		Rehabilitation of drill sites.	All rehabilitation completed. 3 and 6- month checks are ongoing.				



### **Exploration Strategy**

NSM's exploration strategy is to exploit the geophysics-responsive basalt units that form the core to Stawell-type mineralisation and to efficiently vector towards multi-million ounce potential under a thin blanket of Murray Basin cover.

Exploring through cover in Victoria includes exploration challenges. Generally, the sedimentary rocks and structures that host mineralisation, and the mineralisation itself, has poorly contrasting geophysical signatures, making a key exploration tool in covered terrains – regional geophysics – substantially less effective. In addition, the nature of veining and the sometimes-chaotic gold distribution that is typical of Victorian gold deposits can substantially increase the required drilling to test and understand covered mineralisation. Subsequently, typical Victorian gold deposits are challenging exploration targets under cover.

## NSM's Advantage

North Stawell Minerals has a significant exploration advantage to explore through cover. The rocks comprising the Stawell Corridor include wedges of basaltic rock that is faulted into the sediments along some structures. The basalts play a critical role in focusing mineralisation. Basalts are not typically found in Victorian Gold deposits, and they present some clear exploration upside. The basalts:

- have different geophysical properties and can be detected with magnetics and/or gravity.
- may form structural buttresses that bend and warp the later gold-bearing faults, creating conditions that focus the emplacement of mineralisation on the basalt margins.
- Increase NSMs capacity to identify and map controlling structures (faults and folds) from the geophysics and better understand the geological architecture and gold potential.

### NSM program structure:

- Use geophysics to effectively identify areas analogous to the Stawell Mine structure and geology (2021)
- Phase 1 air core drilling through cover to identify mineralisation trends within targets, with broader intercepts or linear trends in intercepts interpreted as closer to primary mineralisation (2021-2022)
- Phase 2, closer spaced, infill air core to focus on Phase 1 anomalism to confirm primary mineralisation (2022-2023) – possible additional geophysics to accelerate understanding.
- Deeper, focused drilling (DD/AC) to establish size, style, structural controls and resource potential of most prospective targets (end-2022+) in parallel with air core drilling.
- Continual peer-leading community and rehabilitation practices to exceed the expectations of landholders and shareholders.



## 1. Regional geophysics data.

High resolution geophysical data is a critical tool for targeting through cover. NSM flew Falcon airborne gravity-gradiometry from April 2021 (ASX announcement – 8 June 2021) (Figure 5) and it has continued to prove an invaluable exploration tool for exploring through cover in Victoria. The gravity data compliments the existing high resolution airborne magnetics data flown by the Victorian government. 222km² of 3D inversion of gravity and magnetics data (57% of the total tenement footprint) and structural detection analysis are complete, providing 3D geometry and structural controls of target areas.

Mineral prospectivity Mapping (this quarter) is a spatial assessment of the entire project for areas likely to host mineralisation, based on multiple (50+) data layers that are recognised to vector towards Stawell-type gold systems. Numerical modelling of potential gold-bearing dilation sites (on-going) in collaboration with CSIRO, Australia's national science agency, will refine drill targeting by improving understanding of potential gold-fluid pathways for targeting.

Only the Stawell-type mineralisation (restricted to the Stawell Corridor) has a strong association between geophysics and mineralisation in Victoria – a significant strategic exploration advantage to exploring through a blanket of un-mineralised, masking cover.

Ground magnetics, giving substantially higher resolution magnetic maps of targets, will commence in early 2023.

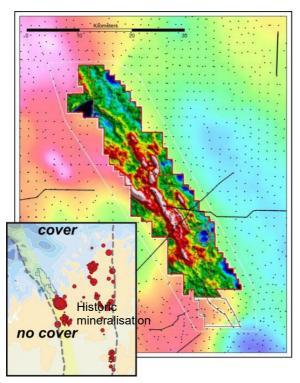


Figure 5 Historic gravity data vs new gravity data (AGG)

Regional gravity data with the NSM high resolution gravity (AGG) data superimposed. A significant increase in resolution is observed. Data points increase from approx. 300 in the regional data to 55,000+ in the AGG data and allow NSM to effectively identify gravity highs interpreted as basalt domes.

The inset shows the Stawell Corridor, mines and targets. Historic mines are shown red; size is indicative of gold production. The figure demonstrates clearly that historic mining stopped where the Murray Basin (blue) cover begins. Exploration methods that effectively target through the cover are anticipated to extend mineralisation trends under cover.

Source: Xcalibur Geophysics, AIG Macedon Conference

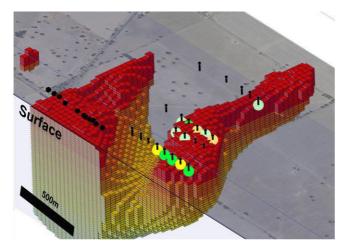


Figure 6 Inversion model from gravity data

Lubeck Tip inversion model. 3D inversion modelling generates 3D iso-surfaces that approximate the shape of the feature causing the anomaly (Reid 2014). NSM's focus mineralisation-related basalts, which have greater gravity anomalism to identify areas that best-match the exploration model for Stawell-type mineralisation. Drilling (and assay results) allow the inversion model to be refined to better fit the actual observed geology and improve the exploration process.

#### 2. Structural Architecture

A model for the regional development of the tenements is critical for effective targeting and geological context. The regional interpretation under cover is based on the geophysics and, where available, historic drilling. The interpretation is based on work done by the Geological Survey of Victoria to the south where the geology and structures outcrop and are mapped (Cayley et al 2001) and a literal library of research completed on the Stawell Gold Mine (see Winterbottom 2017 for summary and references). Gold prospectivity is focused on the Stawell Corridor, a 20km strip on the west margin of the Stawell Zone (Figure 7) where a major structural boundary, the Moyston Fault, occurs. A key location within the Stawell Corridor is an area of interpreted thrust-repeats of the prospective basalts (Figure 7, inset) that faults multiple basalt slices to a near-surface position. Many of these targets have been confirmed during the air core drilling (see Section 6. drilling). Margins of late intrusives are also emerging as gold targets, exploiting northeast-trending structures, and potentially introducing late gold mineralisation.

The NSM tenements encompass 56km strike length of the Stawell Corridor, which is demonstrated to be mineralised in historic exploration. Multiple faults interpreted basalts and granites make the 500km² of NSM tenements a target-rich tenement package, with considerable potential for repeats of the Stawell Mine-type mineralisation.

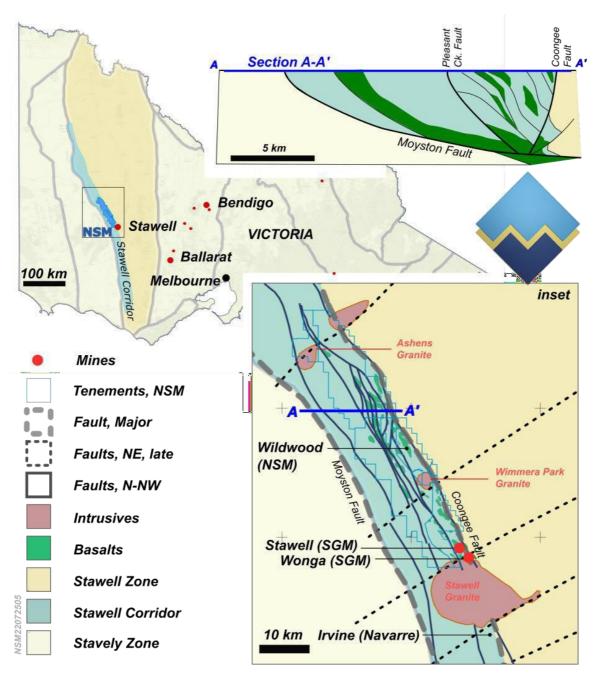


Figure 7 Regional architecture based on geological-geophysical interpretation.

### 3. Clear geological models for mineralisation

NSM is exploring for a deposit similar to the mineralisation at Stawell - a footprint that is 3.5km long, approx. 400m wide and has been mined to depths of around 1,600m. The Stawell Gold Field has produced 4.9Moz (Winterbottom 2016) and is centered on a resistant buttress of basalt that has not been affected by folding. Ore shoots are on – or proximal to – the margins of the basalt, occurring where the structures that control the mineralisation bend, warp and dilate around resistive basalt.

The Stawell-type mineralisation model is an attractive to NSM exploration as the basalt core

to mineralisation can be identified under cover using geophysics. Drilling in the quarter has been able to routinely locate and test the contact between the basalts and bounding sediments. Greatest gold-prospectivity occur where the basalts that are shallow, but not unroofed, and where the mineralised structures around and above the basalt are preserved (Figure 8). Prospects where sediment-hosted mineralisation has been intersected (i.e. above the basalt) have model-based potential to be followed to depth, in an ore system equivalent to Mariners - Central Lode – Golden Gift at Stawell (2+ Moz Au).

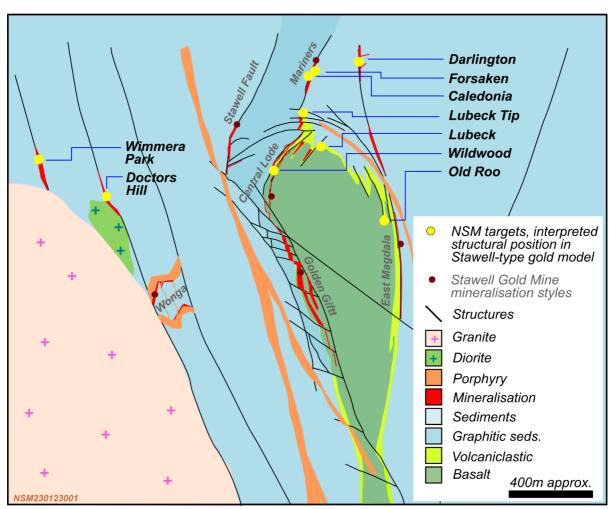


Figure 8 Stylised mineralisation model for the Stawell Gold Mine, with relative (interpreted) position of NMS Prospects within the model architecture. Many of the targets occur in the "Roof Zone" of the basalt buttresses, a region demonstrated at Stawell to include mineralisation that propagate from the basalt into the bounding sediments.

Stawell Mine was found in the 1850's because mineralisation occurred at surface and was not obscured by a blanket of sedimentary cover. Over 80% of NSMs tenements are masked by cover (the Murray Basin). The position of gravity and magnetic anomalies are an effective substitute for outcropping target geology.

Multiple vectors to mineralisation are recognised. More recent mining at Stawell demonstrates that both east- and west-flanks of basalt structures can host substantial mineralisation. Faults adjacent to the basalts, as well as secondary faults further from the domes are important mineralisation controls, focusing mineralisation adjacent to irregularities on the basalt surfaces by warping strain and dilation on the faults. Fe-chlorite and Fe-carbonate alteration, lesser magnetite in the ore system, and less calcium in the basalts are all positive indicators for proximal ore systems. Quartz veining with pyrrhotite, pyrite and arsenopyrite are important assemblages in the ore-system and help vector towards mineralisation (Figure 9).

Additional data can be established from the 3D inversion geophysics. In-Mine observations and numerical modelling (Schaubs et al 2006) (Figure 8, Figure 6) shows that the parts of the basalt buttresses that are most likely to host mineralisation are:

- areas where steep flanks of domes begin to flatten (dependent on structure orientation)
- the hinges of folded domes where the plunge steepens (or changes strike)
- potential for mineralisation on dome flanks is elevated where the flanks have more irregular complex geometries (i.e., domes where basalt "lobes" occur on the dome flanks).

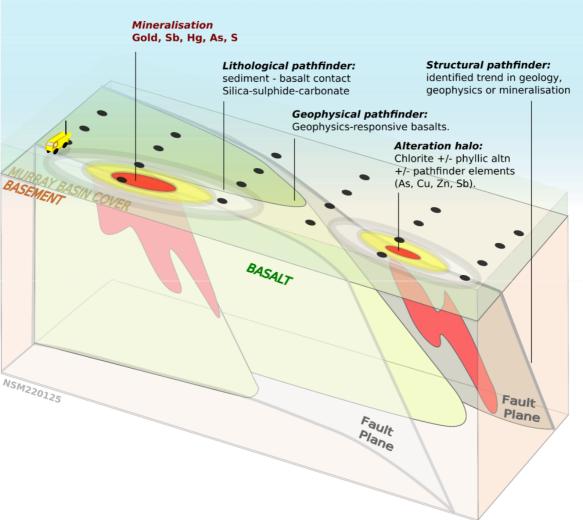


Figure 9 Targeting Stawell-type mineralisation under cover.

The high-prospective geology, alteration, mineralisation and geophysics are used to vector towards gold mineralisation (Phase 1 drilling) and infilled to determine size, shape, orientation and dip (Phase 2) (Figure 9). Targeting mineralisation at depth and down-plunge will follow for best results (Phase 3).

Other mineralisation types are also observed but are not responsive to geophysics and therefore harder to explore for through the ubiquitous cover. Potential occurs for 'typical' Victorian-type narrow-vein gold (e.g., Ballarat or Bendigo), in structures in the metasediments, is demonstrated to the north of the Old Roo target (Figure 2). Where these occur in the 'roof' of the basalt domes, however (e.g., Mariners at Stawell (Figure 8)), the approximate position

of the structure controlling mineralisation can be readily approximated.

Multiple late granites intrude the Stawell Corridor and several of these are known to have associated mineralisation (e.g., Wonga, south of Stawell) (Bierlien et al 2006). The margins of the granites and the contact metamorphosed adjacent metasediments are readily identified in geophysics. Drilling at the Wimmera Park prospect has identified a 300m wide gold and arsenic anomalous zone on the margin of the granite where it intersects a structure interpreted from magnetics (see below). Minor bismuth and antimony occur in associated pXRF data. Mineralisation appears to extend into the intrusives, and more work is required to demonstrate this categorically. At Wonga, research suggests that the granites have re-mobilised and upgraded pre-granite, fault-hosted mineralisation. Multiple granites occur in NSMs tenements.

Murray Basin sediments host WIM-style heavy metal deposits throughout western Victoria. Encouraging exploration for ionic-bonded Rare Earth Elements (REEs) hosted in the cover sequence is another emerging Tertiary target in western Victoria.

## 4. Understanding the Murray Basin Cover.

Over 80% of NSM's tenements are masked by Murray Basin cover, with thickness gradually increasing to the north to depths of approximately 90m. During the Quarter, drilling has demonstrated that the cover is not a serious impediment to air core drilling, with most drillholes (98%) reaching target depths.

Up to three aquifers occur, typically at 10m, 30m and/or the contact with basement. Groundwater is variably saline (1,000-35,000 TDS). Substantial surface water management processes have been developed to control surface water. The process has worked very effectively. To date no issues with landholders regarding surface effects of air core drilling are reported, an encouraging sign for follow up drilling requirements and sustainable operations.

Peer-group explorers are assessing the Murray Basin sediments for Rare Earth elements hosted as REE adsorption clays (ionic-bonded mineralisation on kaolinite and halloysite)

## 5. Historic data consolidation.

During the quarter minor adjustments and updates to the database was ongoing. Review of historic drill core identified intervals with mineralized textures that are not assayed. Subsequent sampling has returned significant gold results (see section 6 – Darlington). Other unsampled diamond cores are identified in the NSM geological database.

## 6. Drilling and field work

During the reporting period, 43 air core drill holes totaling 3,682m was completed over Caledonia, Darlington North and Darlington South. Phase 2, follow up drilling on Phase 1 and historic anomalies, were collared at an angle of 60° to ensure complete coverage across the strike of anomalies.

Assays (Au only) for all 43 holes were returned ( Table 3, Table 4, Table 4). Discussion follows.

The Phase 2 infill air core drilling is tasked to build on the anomalism identified in Phase 1 or historic drilling data and determine any higher-grade zones, their orientation and extent to effectively target for later, deeper drilling.

Targets are typically on the margin of interpreted basalt butresses and have returned

mineralisation-related geology, alteration, sulphides, gold occurrences and/or potential near-mineralisation anomalous intercepts. Long downhole intercepts of anomalous grades, particularly where multiple similar holes cluster together, are interpreted to indicate a high likelihood of proximal significant bedrock mineralisation. This occurs at Wimmera Park, Caledonia, Challenger, Old Roo, Lubeck Tip, Forsaken, Caledonia and Darlington – all of which warrant (or have already been the focus of) follow up infill drilling.

34 of the 43 holes drilled returned during the Quarter included anomalous gold mineralisation. The high success rates are attributed to the holes following up on AC or RC results from the previous season, with closed, angled fences drilled across the interpreted strike extents. This has successfully established orientation of mineralisation in tested areas.

Drilling along strike will continue into the next quarter to further define or extend mineralisation and sufficiently constrain near-surface significant mineralisation for deeper, focused test work. Appropriate methods, potentially including diamond drilling will be considered.

## Results

All air core drilling assays from the quarter have been returned (Appendix 2). Anomalous results (<1g/t Au, >0.05 g/t Au from AC are reported in Table 4. Significant assays (>1g/t Au) for both AC and resampled diamond core are reported in Table 2 and Table 3.

Table 2 Significant Intercepts (>1g/t Au) AC drilling results - Drilled December Quarter/Results December Quarter.

		MGA54	MGA54		Azi	Dip	Final Depth	
Hole ID	Prospect	Easting	Northing	RL	deg	deg	m	Results Significant>1gt Au
NSAC0410	Caledonia	657089	5904253	223	40	-60	112	1.00m @ 4.31 ppm from 0m
NSAC0410	Caledonia	657089	5904253	223	40	-60	112	1.00m @ 1.65 ppm from 98m
NSAC0410	Caledonia	657089	5904253	223	40	-60	112	1.00m @ 1.36 ppm from 107m
NSAC0412	Caledonia	657180	5904311	219	40	-60	113	1.00m @ 1.06 ppm from 80m
NSAC0429	Darlington	658973	5901746	208	240	-60	72	1.00m @ 1.03 ppm from 29m
NSAC0442	Caledonia	656954	5904229	226	40	-60	102	3.00m @ 1.61 ppm from 75m

<sup>\*</sup>Hole ends in mineralisation

Table 3 Significant Intercepts (>1g/t Au) Resampled Diamond drilling results

Hole ID	Prospect	MGA54 Easting	MGA54 Northing	RL	Azi deg	Dip deg	Final Depth m	Results Significant>1gt Au
DAD001	Darlington	658327	5902793	210	223	-54	389	0.85m @ 5.65 g/t Au from 201.2m

<sup>\*</sup>Hole ends in mineralisation

Table 4 Anomalous AC gold results (< 1 g/t Au)

Hole ID	Prospect	MGA54	MGA54	RL	Max Depth	Results Anomalous (g/t Au)
HOIC ID	riospect	Easting	Northing	IXL	m	Results Allomatous (g/t Au)
NSAC0407	Caledonia	655633	5904192	224	75	3.00m @ 0.09 g/t Au from 6.00m
NSAC0408	Caledonia	655659	5904241	223	105	3.00m @ 0.09 g/t Au from 30.00m
NSAC0408	Caledonia	655659	5904241	223	105	3.00m @ 0.36 g/t Au from 36.00m
NSAC0409	Caledonia	655702	5904284	223	84	3.00m @ 0.05 g/t Au from 33.00m
NSAC0409	Caledonia	655702	5904284	221	84	3.00m @ 0.08 g/t Au from 66.00m
NSAC0409	Caledonia	655702	5904284	221	84	3.00m @ 0.20 g/t Au from 81.00m*
NSAC0410	Caledonia	657089	5904253	243	112	2.00m @ 2.30 g/t Au from 0.00m
NSAC0410	Caledonia	657089	5904253	243	112	1.00m @ 0.27 g/t Au from 4.00m
NSAC0410	Caledonia	657089	5904253	243	112	1.00m @ 0.31 g/t Au from 49.00m
NSAC0410	Caledonia	657089	5904253	240	112	2.00m @ 0.20 g/t Au from 52.00m
NSAC0410	Caledonia	657089	5904253	208	112	1.00m @ 0.05 g/t Au from 76.00m
NSAC0410	Caledonia	657089	5904253	208	112	7.00m @ 0.16 g/t Au from 89.00m
NSAC0410	Caledonia	657089	5904253	208	112	7.00m @ 0.56 g/t Au from 97.00m
NSAC0410	Caledonia	657089	5904253	209	112	4.00m @ 0.43 g/t Au from 105.00m
NSAC0410	Caledonia	657089	5904253	209	112	2.00m @ 0.20 g/t Au from 110.00m*
NSAC0411	Caledonia	657117	5904290	209	104	2.00m @ 0.52 g/t Au from 53.00m
NSAC0411	Caledonia	657117	5904290	209	104	2.00m @ 0.13 g/t Au from 79.00m
NSAC0411	Caledonia	657117	5904290	210	104	2.00m @ 0.20 g/t Au from 86.00m
NSAC0411	Caledonia	657117	5904290	214	104	1.00m @ 0.06 g/t Au from 100.00m
NSAC0412	Caledonia	657180	5904311	214	113	2.00m @ 0.46 g/t Au from 43.00m
NSAC0412	Caledonia	657180	5904311	214	113	1.00m @ 0.08 g/t Au from 46.00m
NSAC0412	Caledonia	657180	5904311	214	113	2.00m @ 0.06 g/t Au from 51.00m
NSAC0412	Caledonia	657180	5904311	208	113	1.00m @ 0.07 g/t Au from 54.00m
NSAC0412	Caledonia	657180	5904311	208	113	6.00m @ 0.63 g/t Au from 80.00m
NSAC0412	Caledonia	657180	5904311	208	113	2.00m @ 0.13 g/t Au from 89.00m
NSAC0412	Caledonia	657180	5904311	208	113	3.00m @ 0.07 g/t Au from 108.00m
NSAC0413	Darlington	658005	5902883	209	87	1.00m @ 0.06 g/t Au from 23.00m
NSAC0413	Darlington	658005	5902883	208	87	5.00m @ 0.25 g/t Au from 25.00m
NSAC0413	Darlington	658005	5902883	208	87	1.00m @ 0.16 g/t Au from 33.00m
NSAC0413	Darlington	658005	5902883	226	87	1.00m @ 0.05 g/t Au from 56.00m
NSAC0413	Darlington	658005	5902883	226	87	2.00m @ 0.15 g/t Au from 62.00m
NSAC0413	Darlington	658005	5902883	226	87	2.00m @ 0.09 g/t Au from 77.00m
NSAC0413	Darlington	658005	5902883	226	87	1.00m @ 0.08 g/t Au from 86.00m*
NSAC0414	Darlington	657978	5902859	224	77	1.00m @ 0.11 g/t Au from 23.00m
NSAC0414	Darlington	657978	5902859	224	77	2.00m @ 0.18 g/t Au from 33.00m
NSAC0414	Darlington	657978	5902859	224	77	2.00m @ 0.06 g/t Au from 37.00m

Hole_ID	Prospect	MGA54 Easting	MGA54 Northing	220	Max Depth m	Results Anomalous (g/t Au)
AC0414	Darlington	657978	5902859	224	77	1.00m @ 0.12 g/t Au from 74.00m
NSAC0415	Darlington	657952	5902930	224	87	6.00m @ 0.09 g/t Au from 24.00m
NSAC0415	Darlington	657952	5902930	224	87	3.00m @ 0.05 g/t Au from 36.00m
NSAC0416	Darlington	657925	5902919	222	81	6.00m @ 0.22 g/t Au from 27.00m
NSAC0417	Caledonia	655752	5904343	222	87	3.00m @ 0.05 g/t Au from 33.00m
NSAC0418	Caledonia	655775	5904379	221	84	3.00m @ 0.05 g/t Au from 30.00m
NSAC0420	Caledonia	655854	5904473	218	93	3.00m @ 0.05 g/t Au from 84.00m
NSAC0421	Caledonia	655890	5904521	218	81	6.00m @ 0.14 g/t Au from 54.00m
NSAC0421	Caledonia	655890	5904521	223	81	6.00m @ 0.12 g/t Au from 66.00m
NSAC0421	Caledonia	655890	5904521	223	81	3.00m @ 0.09 g/t Au from 75.00m
NSAC0422	Caledonia	655926	5904563	222	75	3.00m @ 0.11 g/t Au from 39.00m
NSAC0422	Caledonia	655926	5904563	222	75	3.00m @ 0.06 g/t Au from 69.00m
NSAC0424	Caledonia	656153	5904078	244	90	3.00m @ 0.05 g/t Au from 0.00m
NSAC0424	Caledonia	656153	5904078	244	90	3.00m @ 0.37 g/t Au from 6.00m
NSAC0424	Caledonia	656153	5904078	244	90	3.00m @ 0.07 g/t Au from 15.00m
NSAC0426	Caledonia	656213	5904166	241	87	3.00m @ 0.05 g/t Au from 72.00m
NSAC0429	Darlington	658973	5901746	208	72	3.00m @ 0.33 g/t Au from 15.00m
NSAC0429	Darlington	658973	5901746	208	72	2.00m @ 0.58 g/t Au from 29.00m
NSAC0429	Darlington	658973	5901746	208	72	1.00m @ 0.11 g/t Au from 33.00m
NSAC0430	Darlington	658927	5901682	210	72	3.00m @ 0.06 g/t Au from 9.00m
NSAC0430	Darlington	658927	5901682	210	72	3.00m @ 0.09 g/t Au from 15.00m
NSAC0430	Darlington	658927	5901682	210	72	15.00m @ 0.26 g/t Au from 33.00m
NSAC0430	Darlington	658927	5901682	210	72	6.00m @ 0.05 g/t Au from 63.00m
NSAC0434	Darlington	658905	5901676	210	48	6.00m @ 0.07 g/t Au from 12.00m
NSAC0435	Darlington	658122	5902778	215	75	6.00m @ 0.06 g/t Au from 27.00m
NSAC0436	Darlington	658136	5902792	214	75	6.00m @ 0.14 g/t Au from 36.00m
NSAC0436	Darlington	658136	5902792	214	75	3.00m @ 0.20 g/t Au from 69.00m
NSAC0437	Darlington	658095	5902774	215	63	3.00m @ 0.22 g/t Au from 30.00m
NSAC0438	Darlington	658348	5902602	209	104	6.00m @ 0.06 g/t Au from 18.00m
NSAC0438	Darlington	658348	5902602	209	104	9.00m @ 0.07 g/t Au from 57.00m
NSAC0438	Darlington	658348	5902602	209	104	3.00m @ 0.08 g/t Au from 88.00m
NSAC0439	Darlington	658354	5902619	209	81	6.00m @ 0.09 g/t Au from 45.00m
NSAC0440	Darlington	658326	5902620	210	72	6.00m @ 0.10 g/t Au from 60.00m
NSAC0441	Darlington	658352	5902633	209	51	3.00m @ 0.14 g/t Au from 30.00m
NSAC0441	Darlington	658352	5902633	209	51	6.00m @ 0.40 g/t Au from 36.00m
NSAC0442	Caledonia	656954	5904229	226	102	3.00m @ 0.05 g/t Au from 39.00m
NSAC0442	Caledonia	656954	5904229	226	102	3.00m @ 1.61 g/t Au from 75.00m
NSAC0442	Caledonia	656954	5904229	226	102	3.00m @ 0.08 g/t Au from 87.00m

Hole_ID	Prospect	MGA54 Easting	MGA54 Northing	220	Max Depth m	Results Anomalous (g/t Au)
NSAC0442	Caledonia	656954	5904229	226	102	3.00m @ 0.88 g/t Au from 96.00m
NSAC0443	Caledonia	656988	5904276	225	97	3.00m @ 0.09 g/t Au from 9.00m
NSAC0443	Caledonia	656988	5904276	225	97	3.00m @ 0.27 g/t Au from 45.00m
NSAC0444	Caledonia	657024	5904323	224	102	3.00m @ 0.12 g/t Au from 33.00m
NSAC0444	Caledonia	657024	5904323	224	102	6.00m @ 0.27 g/t Au from 54.00m
NSAC0444	Caledonia	657024	5904323	224	102	3.00m @ 0.07 g/t Au from 66.00m
NSAC0444	Caledonia	657024	5904323	224	102	3.00m @ 0.07 g/t Au from 96.00m
NSAC0445	Caledonia	657060	5904363	223	113	6.00m @ 0.13 g/t Au from 54.00m
NSAC0445	Caledonia	657060	5904363	223	113	3.00m @ 0.11 g/t Au from 90.00m
NSAC0446	Caledonia	657092	5904404	222	109	3.00m @ 0.30 g/t Au from 78.00m
NSAC0447	Caledonia	657139	5904448	221	100	3.00m @ 0.06 g/t Au from 96.00m
NSAC0449	Caledonia	657211	5904545	219	87	6.00m @ 0.32 g/t Au from 15.00m
NSAC0449	Caledonia	657211	5904545	219	87	3.00m @ 0.09 g/t Au from 60.00m

\*Hole ends in mineralisation

#### Caledonia

The Caledonia target has been expanded to a 250m gold trend, open along strike and at depth, comprising two mineralized shoots and a strong arsenic halo. Orientation is unusual (roughly east-west) and may indicate laddered (or en-echelon) system in a more typical northwest orientation.

Historic drilling and historic mining identified the potential for high-grade gold mineralisation associated with the margin of a coincident magnetic and gravity anomaly within the Caledonia Prospect on the 10km Germania-Darlington trend. The prospect occurs in the same structural corridor as the Magdala (4.9Moz Au), Wonga (294koz Au) and Wildwood (55koz Au – see NSM Prospectus, 2020) deposits. The Caledonia Prospect is bound to the west by the Stawell Fault and to the east by the Coongee Fault – a structural fairway that is demonstrated to be highly prospective. The Caledonia Prospect is one of four high-grade gold occurrences within a 10km strike extent (Figure 10). All areas are sparsely drilled and are open along strike and at depth.

At Caledonia, 24 air core holes (2,280m) were completed. A total of 21 of the 24 air core holes returned anomalous gold grades (Table 4, Figure 11) and two returned significant intercepts (Table 2, Figure 11, Figure 12). Air core drilling along three drill lines with approximately 50m spaced holes and 100m spaced lines tested and confirmed the strike and depth continuation of the anomalous gold trend.

- 1m at 4.31 g/t Au from 0m (NSAC0410)
- 3m at 1.61 g/t Au from 75m (NSAC0442)
- 1m t 1.65 g/t Au from 98m (NSAC0410)
- 1m at 1.36 g/t Au from 107m (NSAC0410)
- 1m at 1.06 g/t Au from 80m (NSAC0412)

NSAC0410 (drilled beneath a 12 g/t Au intercept in NSR077) also includes a broad (14m)

anomalous gold intercept comprising:

- 7.00m at 0.16 g/t Au from 89.00m
- 7.00m at 0.56 g/t Au from 97.00m
- 4.00m at 0.43 g/t Au from 105.00m
- 2.00m at 0.20 g/t Au from 110.00m\*

Potentially the trend could include the Bonnie Dundee Mine (1,117 oz at 20.9 g/t Au) and the Darlington mine (2,347 oz at18.2 g/t Au) to the South West. The AC drilling was designed as "step out" holes along strike from the historic Bonnie Dundee workings (Figure 10) 850m to the south.

The significant Intercept results returned from drilling through December has confirmed the presence of a mineralised structure, open along strike and at depth. Highly elevated arsenic occurs with gold results, and is useful for discriminating lodes. An arsenic association is good for exploration, as it forms a broad, consistent halo around gold mineralisation. There is potentially a WNW strike of mineralisation which will be further tested both to the NW and SE in upcoming drilling programs (January-February).

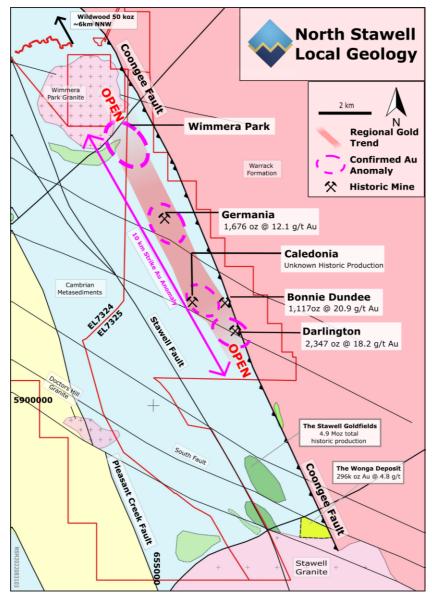


Figure 10 Caledonia/Darlington structural corridor

<sup>\*</sup>mineralisation at end-of-hole.

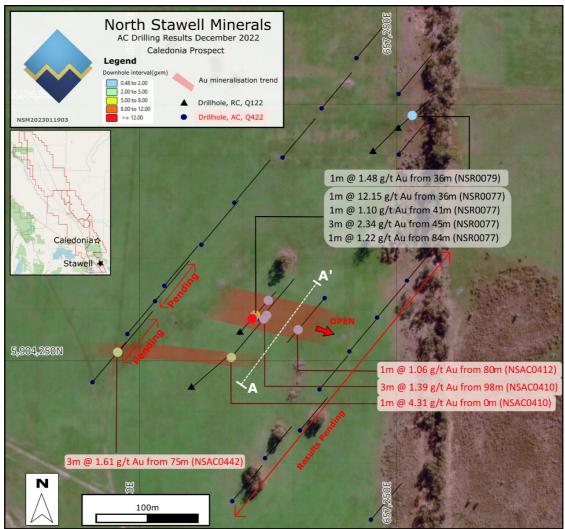


Figure 11 Caledonia Plan with significant intercepts.

Figure 12 is the section A-A' which cuts through the Caledonia Prospect. The section indicates the mineralisation occurs in pelite and dips steeply west. Plunge direction has not been determined.

The next phase of drilling will test the open strike extent of the mineralised feature and potentially the depth constraints and help determine the plunge component.

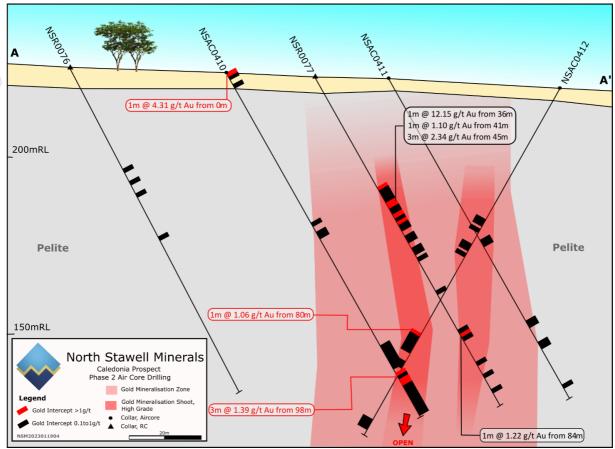


Figure 12 Caledonia Cross section A

Significant intercepts in fresh rock (NSAC0410, NSAC0412), consists of approximately 10%-45% pyritic quartz typical of narrow vein gold and is expected to be representative of the mineralisation at Caledonia, and may respond well to surface geophysics.

On the prospect scale gold anomalism runs sub-parallel with the margin of a coincident magnetic and gravity anomaly and occurs in the west limb of an interpreted regional anticline to the west and the Coongee Fault to the east (Figure 10). The gold trend remains open from the Caledonia Prospect (750m northwest of NSM's northern air core line) and for 500m southeast to the historic Bonnie Dundee Mine. Drill lines north and south of the open mineralisation are at the laboratory. Mineralisation is also open at depth. Drilling to date provides enough data to establish that the Caledonian Prospect includes two steep dipping veins striking approximately east-west, with the western lode including 100ppm+ arsenic anomalism. The orientation is unusual, but not unique at Stawell, and further drilling will validate the observation.

Close spaced ground magnetics in planned for the next quarter to help define a structural trend to aid drill targeting. The drilling to date leaves the target open in all directions and represents a significant opportunity for a substantial gold system along the Germania-Darlington trend at the Caledonia Prospect, in a structural position equivalent to the Mariners Lode at Stawell (that links to the west flank of the multi-million ounce Central Lode – Golden Gift mineralisation at depth in the mine. Infill drilling through January and February will attempt to define this trend.

### **Darlington North**

AC drilling was undertaken through Darlington North to intersect the northern and southern strike extension of the historic workings associated with the Darlington Mine. Drilling also targeted the potential link with the Caledonia workings to the NW (Figure 10).

11 AC holes were drilled, and one diamond hole (DAD001) resampled. A long section (Figure 13) long section view through Darlington North which confirms the depth continuation of the system. More systematic drilling is required to obtain a plunge component which will help further drilling plans.

Talks with various government stakeholders are at an advanced stage to enable full access to drill closer spaced holes within the interpreted higher grade shoot and establish plunge.

Significant results returned during the quarter include:

## • 0.85m at 5.65 g/t Au from 201.2m (DAD001)

The result is highly encouraging, confirming mineralisation continues to 140m vertical. The intercept occurs in a 150m strike length higher grade zone (3g/t+ Au) centered on the historic mine within a 700m strike-length, lower grade envelope. The historic mine produced 2,347 oz Au at 18.2 g/t Au The deeper results adds substantial upside to Darlington, and is open at depth. Plunge orientation in not determined, with a southern or northern plunge possible.

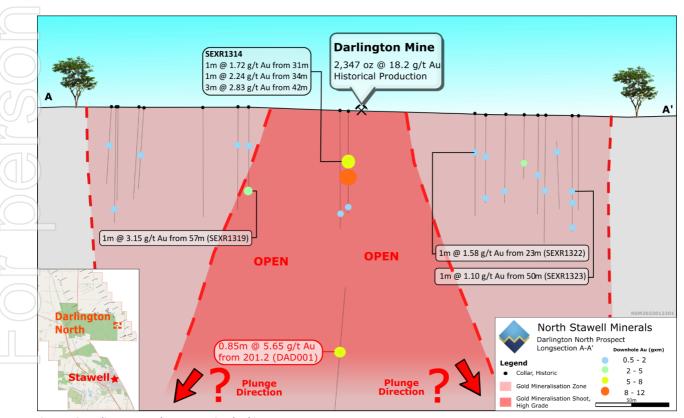


Figure 13 Darlington North Long section looking

The best gold results have a correlation with arsenic anomalism (250-500 ppm As). Mineralisation occurs as quartz veining hosted in bleached sediments with moderate veining

and sulphides. Further drilling is planned to follow up on the grade and orientation of the significant mineralisation.

## **Darlington South**

AC drilling was undertaken through Darlington South to target a coincident arsenic anomaly (900ppm+) with historic AC drilling (Figure 14). A total of 8 AC holes for 549m was drilled at an 60° angle to help delineate the proposed NW/SE trend associated with arsenic anomalism. Moderate results were returned however further drilling to the North and South is required to properly test the soil anomalism.

Significant and more substantial anomalous results include:

- 1.0m at 1.03 g/t Au from 29m (NSAC0429)
- 15m at 0.26 g/t Au from 33m\* (NSAC0430)

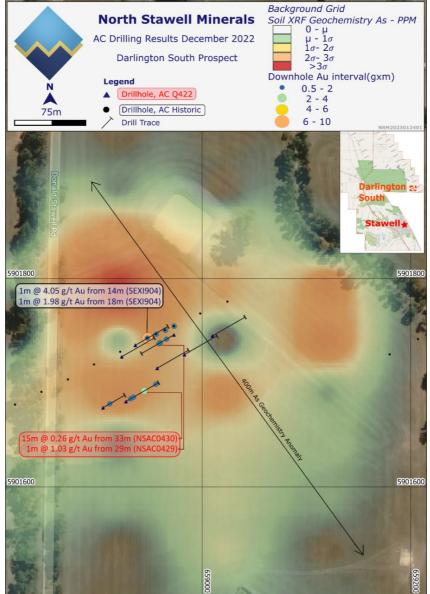


Figure 14 Darlington South soil with drilling

# Soil Sampling (XRF)

During the wet season, soils programs were accelerated throughout the southern NSM tenements. These were analysed with XRF, as well as all drilling from air core and RC campaigns.

A further 400 samples were taken during the reporting period, to complement the previous 4,400 soil samples. Sampling was on a nominal 100m x 50m grid (Figure 15).

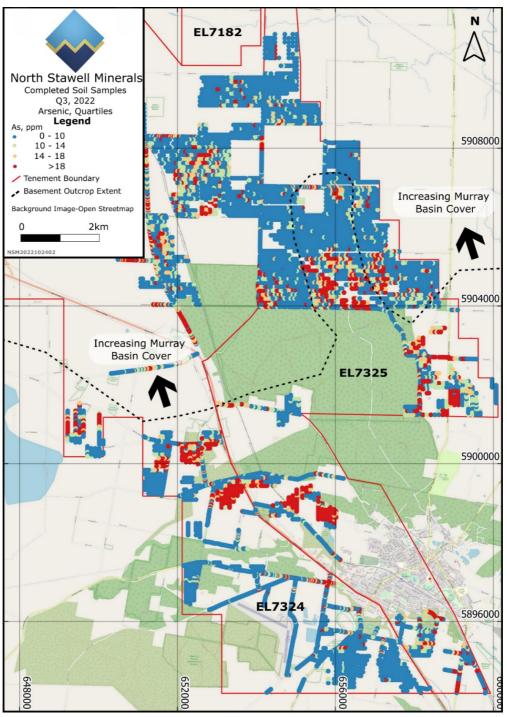


Figure 15 As results in samples taken during last quarter.

### Mineral Prospectivity Mapping

Mineral Prospectivity Mapping (Figure 17 and Figure 1) was applied to the North Stawell tenement package to assess potential to host Stawell-type mineralisation. This was achieved with a combination of geo-data and geo-knowledge converted to multiple (63) geological layers that are known or interpreted to contribute to gold-potential in the Stawell Corridor See JORC Table 1 (Section 2 Reporting of Exploration Results - d. Mineral Prospectivity Mapping) and Appendix 3. A weighting score was applied based on the Stawell-type gold model. Data was combined to a single layer in a grid of 100m by 100m points in GIS to generate a whole-of-prospect high resolution map of mineral prospectivity. The process identified many of the existing targets, and importantly, highlighted potentially more prospective subdivisions of larger, general targets. New targets are also identified, 9 targets have "high" prospectivity, 5 targets have "very high" prospectivity and will further reviewed for additional testing (Figure 16). The sub-division of previously identified targets are equally important – helping to refine the focus for ongoing planning and drilling.

Mineral prospectivity mapping presents consistent, repeatable assessment of relative mineral potential. There is no guarantee that areas identified will be mineralized and additional drilling is required to demonstrate mineralisation. The map is an excellent tool to refine and challenge the exploration teams focus on targets in the Stawell Corridor under cover.

Very high prospectivity results cluster in three key areas – Southern and Eastern Wildwood, West of Magdala (the Stawell Mine) and north of Darlington. The Magdala targets are locally complicated by their position under Stawell.

High prospectivity areas also cluster: around Ashens, west of the Darlington-Gerrnania trend, and west of Wildwood (Figure 17).

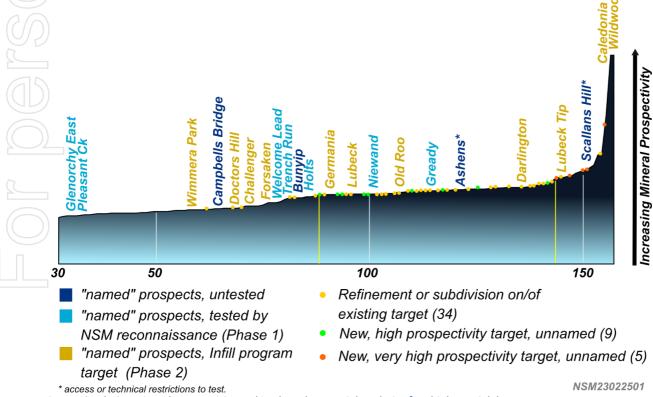


Figure 16 Relative Mineral prospectivity ranking based on spatial analysis of multiple spatial datasets.

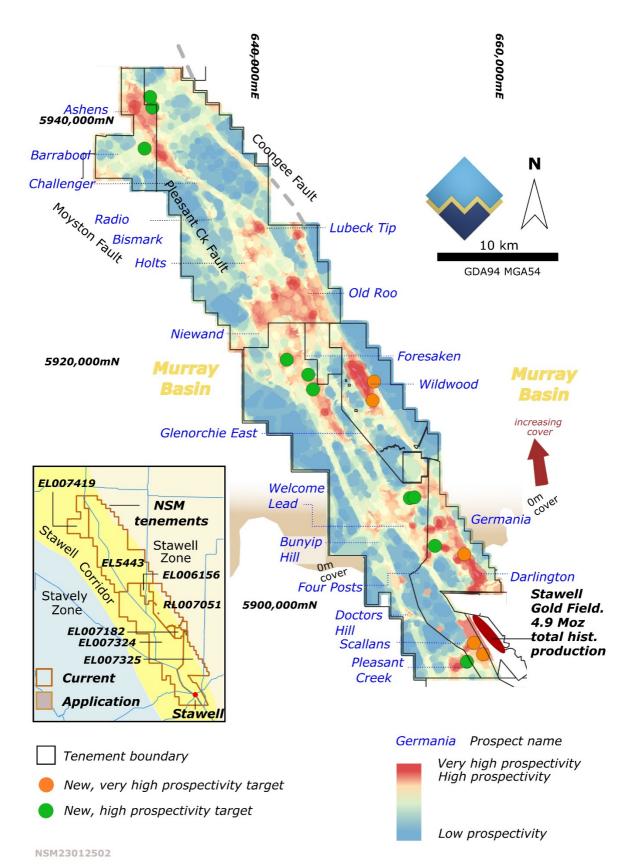


Figure 17 Mineral prospectivity mapping showing newly identified, high and very high prospectivity targets.

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# Finance and Use of Funds (2nd Quarter ending 31 December 2022)

Pursuant to ASX Listing Rule 5.3.4, the Company advises the proposed use of Funds as per Section 4.7 of the Prospectus to actual use of funds as follows:

Funding Allocation	Prospectus	FY21	Sep 21 Qtr	Dec 21 Qtr	Mar 22 Qtr	June 22 Qtr	Sep 23 Qtr	Dec 23 Qtr	Actual to date	<u>Variance</u>
Cost of IPO, Listing	2,128,000	2,200,400	-	-	-	-	-	-	2,200,400	72,400
Exploration (2 years)	13,949,000	4,605,000	437,900	444,300	730,200	1,792,800	384,129	623,497	9,017,826	-4,931,174
Capital Equipment	631,000	366,300	9,800	31,300	81,100	-18,336	-26,120	-21,819	422,225	-208,775
Working Capital & Operating Expenses	3,292,000	1,049,956	477,892	308,816	448,942	363,962	527,776	179,028	3,356,372	64,372
Total	20,000,000	8,221,656	\$ 925,592	\$ 784,416	\$ 1,260,242	\$ 2,138,426	\$ 885,784	\$ 780,706	\$14,996,823	-5,003,177

Cash at the end of the Quarter was \$5.0m. As per ASX Listing Rule 5.3.5 a Company is required to provide a description and explanation of any related party payments made during the quarter. \$63,150 in total, relating to Director fee payments (inclusive of superannuation).

This Announcement is authorised for release by Russell Krause, Chief Executive Officer of North Stawell Minerals Ltd

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# **About North Stawell Minerals Limited:**

North Stawell Minerals Limited (ASX: NSM) is an Australian-based gold exploration company focused on discovering large scale gold deposits in the highly prospective Stawell Mineralised Corridor in Victoria.

The Company is exploring prospective tenements located along strike of, and to the immediate north of the Stawell Gold Field which has produced in excess of five million ounces of gold. NSM's granted tenure has a total land area of approximately 500 km². NSM believes there is potential for the discovery of large gold mineralised systems under cover, using Stawell Gold Mine's Magdala orebody as an exploration model to test 51km of northerly strike extension of the underexplored Stawell Mineralised Corridor.

#### Chief Executive Russell Krause said:

"NSM regards the northern Stawell Mineralised Corridor, over which NSM has a commanding ground position, to be one of Australia's most underexplored historic gold provinces, with significant potential to deliver multi-million-ounce gold mineralisation under shallow cover. Many prospects in the tenement area, tested by prior explorers, are demonstrated to be gold mineralised, and we are excited to incorporate this knowledge, regional re-interpretation, geophysical modelling, and the ongoing regional air core drilling program results into the exploration to deliver the next major Stawell Corridor exploration success – under cover.

## **Competent persons Statement**

The information that relates to Exploration Targets, Exploration Results and Mineral Resources is based on information compiled by Mr Bill Reid, a Competent Person who is a Member of The Australian Institute of Geoscientists (AIG) and Head of Exploration of North Stawell Minerals. Mr Reid 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' (2012 JORC Code). Mr Reid consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.



## Forward-Looking Statements

This announcement 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", "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 NSM 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 NSM assumes no obligation to update such information.

**Appendix 1: NSM Tenement Summary** 

Tenement	Status	Number	Area (km2)	Graticules <sup>1</sup>	Initial NSM holding	Earn-in potential
Wildwood	Granted	RL007051	50	50	51%	90%
Barrabool	Granted	EL5443	182	194	51%	90%
Glenorchy	Granted	EL006156	10	18	100%	n/a
West Barrabool Wimmera Park	Granted	EL007419	37	40	100%	n/a
Granite	Granted	EL007182	4.5	9	100%	n/a
Deep Lead	Granted	EL007324	167	209	51%	90%
Germania	Granted	EL007325	54	82	51%	90%
Total granted			504.5	602		

<sup>&</sup>lt;sup>1</sup> Exploration Licence areas in Victoria are recorded as graticular sections (or graticules). Graticules are a regular 1km by 1km grid throughout the state. The graticular sections recorded for an exploration licence is the count of each full graticule and each part graticule. If the tenement shape is irregular, the actual area (km²) is less than the graticular area.



Appendix 2: Air core drilling summary, December Quarter, 2022.

					Max	
		MGA54	MGA54		Depth	
Hole_ID	Prospect	Easting	Northing	RL	m .	Results Anomalous (g/t Au)
NSAC0407	Caledonia	655633	5904192	228.522	75	3.00m @ 0.09 g/t Au from 6.00m
NSAC0408	Caledonia	655659	5904241	228.127	105	3.00m @ 0.09 g/t Au from 30.00m
NSAC0408	Caledonia	655659	5904241	228.127	105	3.00m @ 0.36 g/t Au from 36.00m
NSAC0409	Caledonia	655702	5904284	228.33	84	3.00m @ 0.05 g/t Au from 33.00m
NSAC0409	Caledonia	655702	5904284	228.33	84	3.00m @ 0.08 g/t Au from 66.00m
NSAC0409	Caledonia	655702	5904284	228.33	84	3.00m @ 0.20 g/t Au from 81.00m*
NSAC0410	Caledonia	657089	5904253	223.682	112	2.00m @ 2.30 g/t Au from 0.00m
NSAC0410	Caledonia	657089	5904253	223.682	112	1.00m @ 0.27 g/t Au from 4.00m
NSAC0410	Caledonia	657089	5904253	223.682	112	1.00m @ 0.31 g/t Au from 49.00m
NSAC0410	Caledonia	657089	5904253	223.682	112	2.00m @ 0.20 g/t Au from 52.00m
NSAC0410	Caledonia	657089	5904253	223.682	112	1.00m @ 0.05 g/t Au from 76.00m
NSAC0410	Caledonia	657089	5904253	223.682	112	7.00m @ 0.16 g/t Au from 89.00m
NSAC0410	Caledonia	657089	5904253	223.682	112	7.00m @ 0.56 g/t Au from 97.00m
NSAC0410	Caledonia	657089	5904253	223.682	112	4.00m @ 0.43 g/t Au from 105.00m
NSAC0410	Caledonia	657089	5904253	223.682	112	2.00m @ 0.20 g/t Au from 110.00m*
NSAC0411	Caledonia	657117	5904290	222.159	104	2.00m @ 0.52 g/t Au from 53.00m
NSAC0411	Caledonia	657117	5904290	222.159	104	2.00m @ 0.13 g/t Au from 79.00m
NSAC0411	Caledonia	657117	5904290	222.159	104	2.00m @ 0.20 g/t Au from 86.00m
NSAC0411	Caledonia	657117	5904290	222.159	104	1.00m @ 0.06 g/t Au from 100.00m
NSAC0412	Caledonia	657180	5904311	219.272	113	2.00m @ 0.46 g/t Au from 43.00m
NSAC0412	Caledonia	657180	5904311	219.272	113	1.00m @ 0.08 g/t Au from 46.00m
NSAC0412	Caledonia	657180	5904311	219.272	113	2.00m @ 0.06 g/t Au from 51.00m
NSAC0412	Caledonia	657180	5904311	219.272	113	1.00m @ 0.07 g/t Au from 54.00m
NSAC0412	Caledonia	657180	5904311	219.272	113	6.00m @ 0.63 g/t Au from 80.00m
NSAC0412	Caledonia	657180	5904311	219.272	113	2.00m @ 0.13 g/t Au from 89.00m
NSAC0412	Caledonia	657180	5904311	219.272	113	3.00m @ 0.07 g/t Au from 108.00m
NSAC0413	Darlington	658005	5902883	214.038	87	1.00m @ 0.06 g/t Au from 23.00m
NSAC0413	Darlington	658005	5902883	214.038	87	5.00m @ 0.25 g/t Au from 25.00m
NSAC0413	Darlington	658005	5902883	214.038	87	1.00m @ 0.16 g/t Au from 33.00m
NSAC0413	Darlington	658005	5902883	214.038	87	1.00m @ 0.05 g/t Au from 56.00m
NSAC0413	Darlington	658005	5902883	214.038	87	2.00m @ 0.15 g/t Au from 62.00m
NSAC0413	Darlington	658005	5902883	214.038	87	2.00m @ 0.09 g/t Au from 77.00m
NSAC0413	Darlington	658005	5902883	214.038	87	1.00m @ 0.08 g/t Au from 86.00m*
NSAC0414	Darlington	657978	5902859	214.329	77	1.00m @ 0.11 g/t Au from 23.00m
NSAC0414	Darlington	657978	5902859	214.329	77	2.00m @ 0.18 g/t Au from 33.00m
NSAC0414	Darlington	657978	5902859	214.329	77	2.00m @ 0.06 g/t Au from 37.00m
NSAC0414	Darlington	657978	5902859	214.329	77	1.00m @ 0.12 g/t Au from 74.00m
NSAC0415	Darlington	657952	5902930	214.339	87	6.00m @ 0.09 g/t Au from 24.00m
NSAC0415	Darlington	657952	5902930	214.339	87	3.00m @ 0.05 g/t Au from 36.00m
NSAC0416	Darlington	657925	5902919	214.899	81	6.00m @ 0.22 g/t Au from 27.00m



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NSAC0417	Caledonia	655752	5904343	228.301	87	3.00m @ 0.05 g/t Au from 33.00m
NSAC0418	Caledonia	655775	5904379	225.645	84	3.00m @ 0.05 g/t Au from 30.00m
NSAC0419	Caledonia	655814	5904423	223.656	78	NSA
NSAC0420	Caledonia	655854	5904473	224.843	93	3.00m @ 0.05 g/t Au from 84.00m
NSAC0421	Caledonia	655890	5904521	223.235	81	6.00m @ 0.14 g/t Au from 54.00m
NSAC0421	Caledonia	655890	5904521	223.235	81	6.00m @ 0.12 g/t Au from 66.00m
NSAC0421	Caledonia	655890	5904521	223.235	81	3.00m @ 0.09 g/t Au from 75.00m
NSAC0422	Caledonia	655926	5904563	221.647	75	3.00m @ 0.11 g/t Au from 39.00m
NSAC0422	Caledonia	655926	5904563	221.647	75	3.00m @ 0.06 g/t Au from 69.00m
NSAC0423	Caledonia	656075	5904035	245.516	118	NSA
NSAC0424	Caledonia	656153	5904078	243.865	90	3.00m @ 0.05 g/t Au from 0.00m
NSAC0424	Caledonia	656153	5904078	243.865	90	3.00m @ 0.37 g/t Au from 6.00m
NSAC0424	Caledonia	656153	5904078	243.865	90	3.00m @ 0.07 g/t Au from 15.00m
NSAC0425	Caledonia	656185	5904129	242.082	93	NSA
NSAC0426	Caledonia	656213	5904166	240.971	87	3.00m @ 0.05 g/t Au from 72.00m
NSAC0427	Darlington	658923	5901725	209.207	72	NSA
NSAC0428	Darlington	658936	5901736	208.543	72	NSA
NSAC0429	Darlington	658973	5901746	208.29	72	3.00m @ 0.33 g/t Au from 15.00m
NSAC0429	Darlington	658973	5901746	208.29	72	2.00m @ 0.58 g/t Au from 29.00m
NSAC0429	Darlington	658973	5901746	208.29	72	1.00m @ 0.11 g/t Au from 33.00m
NSAC0430	Darlington	658927	5901682	209.74	72	3.00m @ 0.06 g/t Au from 9.00m
NSAC0430	Darlington	658927	5901682	209.74	72	3.00m @ 0.09 g/t Au from 15.00m
NSAC0430	Darlington	658927	5901682	209.74	72	15.00m @ 0.26 g/t Au from 33.00m
NSAC0430	Darlington	658927	5901682	209.74	72	6.00m @ 0.05 g/t Au from 63.00m
NSAC0431	Darlington	658957	5901714	208.639	69	NSA
NSAC0432	Darlington	658983	5901727	208.641	72	NSA
NSAC0433	Darlington	659010	5901745	208.277	72	NSA
NSAC0434	Darlington	658905	5901676	210.163	48	6.00m @ 0.07 g/t Au from 12.00m
NSAC0435	Darlington	658122	5902778	214.617	75	6.00m @ 0.06 g/t Au from 27.00m
NSAC0436	Darlington	658136	5902792	214.206	75	6.00m @ 0.14 g/t Au from 36.00m
NSAC0436	Darlington	658136	5902792	214.206	75	3.00m @ 0.20 g/t Au from 69.00m
NSAC0437	Darlington	658095	5902774	214.839	63	3.00m @ 0.22 g/t Au from 30.00m
NSAC0438	Darlington	658348	5902602	208.858	104	6.00m @ 0.06 g/t Au from 18.00m
NSAC0438 NSAC0438	Darlington Darlington	658348 658348	5902602 5902602	208.858 208.858	104 104	9.00m @ 0.07 g/t Au from 57.00m 3.00m @ 0.08 g/t Au from 88.00m
NSAC0430	Darlington	658354	5902619	208.759	81	6.00m @ 0.09 g/t Au from 45.00m
NSAC0439	Darlington	658326	5902620	200.753	72	6.00m @ 0.10 g/t Au from 60.00m
NSAC0440	Darlington	658352	5902633	208.856	51	3.00m @ 0.14 g/t Au from 30.00m
NSAC0441	Darlington	658352	5902633	208.856	51	6.00m @ 0.40 g/t Au from 36.00m
NSAC0441	Caledonia	656954	5904229	226.432	102	3.00m @ 0.40 g/t Au from 39.00m
NSAC0442	Caledonia	656954	5904229	226.432	102	3.00m @ 1.61 g/t Au from 75.00m
NSAC0442	Caledonia	656954	5904229	226.432	102	3.00m @ 0.08 g/t Au from 87.00m
NSAC0442	Caledonia	656954	5904229	226.432	102	3.00m @ 0.88 g/t Au from 96.00m
NSAC0443	Caledonia	656988	5904276	224.731	97	3.00m @ 0.09 g/t Au from 9.00m
NSAC0443	Caledonia	656988	5904276	224.731	97	3.00m @ 0.27 g/t Au from 45.00m
NSAC0444	Caledonia	657024	5904323	224.155	102	3.00m @ 0.12 g/t Au from 33.00m
-					1	



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NSAC0444	Caledonia	657024	5904323	224.155	102	6.00m @ 0.27 g/t Au from 54.00m
NSAC0444	Caledonia	657024	5904323	224.155	102	3.00m @ 0.07 g/t Au from 66.00m
NSAC0444	Caledonia	657024	5904323	224.155	102	3.00m @ 0.07 g/t Au from 96.00m
NSAC0445	Caledonia	657060	5904363	222.619	113	6.00m @ 0.13 g/t Au from 54.00m
NSAC0445	Caledonia	657060	5904363	222.619	113	3.00m @ 0.11 g/t Au from 90.00m
NSAC0446	Caledonia	657092	5904404	221.783	109	3.00m @ 0.30 g/t Au from 78.00m
NSAC0447	Caledonia	657139	5904448	220.704	100	3.00m @ 0.06 g/t Au from 96.00m
NSAC0448	Caledonia	657177	5904496	219.98	91	NSA
NSAC0449	Caledonia	657211	5904545	218.924	87	6.00m @ 0.32 g/t Au from 15.00m
NSAC0449	Caledonia	657211	5904545	218.924	87	3.00m @ 0.09 g/t Au from 60.00m

NSA – no significant assay

anr – assays not returned.

<sup>^</sup> Drilled June Quarter, assays returned this quarter

<sup>\*</sup> end-of-hole mineralisation



Appendix 3. Mineral Prospectivity Mapping Buffer Values and Weighting Scores Applied.

Appendix 3. Mineral Prospectivity Mapping Buffer Values and Weighting Scores Applie								
	Layer	Description	Weighting	Buffer				
	Zn250	Downhole Zinc data > 250ppm	1.050	500				
	Zn1000	Downhole Zinc data > 1000ppm	1.070	250				
	Zn500	Downhole Zinc data > 500ppm	1.060	400				
	tmi_SD800	Geophysics upward continued edge detection - 800m	1.010	350				
	tmi_SD400	Geophysics upward continued edge detection - 400m	1.010	250				
	tmi_SD200	Geophysics upward continued edge detection - 200m	1.020	200				
	tmi_SD50	Geophysics upward continued edge detection - 50m	1.015	150				
	struct_parallel_1000	belt-parallel interpreted structures	1.080	1000				
	struct_NE_1000	belt-perpendicular interpreted faults (late)	1.050	1000				
	struct_kinks	major regional flexures in geology	1.030	spatial				
	structure_coongee	Hanging wall of Coongee Fault	1.100	1000				
	Sb 50	Antimony 50ppm	1.040	250				
	Sb_25	Antimony 25ppm	1.010	400				
	Pb_1000	Lead - 1000ppm	1.070	250				
	Pb_500	Lead - 500ppm	1.050	400				
	Pb_250	Lead - 250ppm	1.030	500				
	Pb_125	Lead - 125ppm	1.010	750				
	Mines	Historic mining centres	1.300	500				
	gpx_himag	High magnetic response in regional airborne data	1.120	spatial				
	gpx_higrav_fathom	Anomalous gravity interpretation - fathom Geophysics	null	spatial				
	gpx_higrav	Anomalous gravity interpretation - fathom AGG	1.080	spatial				
	gpx_curvature_vert	Gravity with modelled high vertical change	1.120	spatial+100m				
	gpx_curvature_horiz	Gravity with high horizontal variation	1.050	spatial				
	gpx_curvature	Gravity with modelled high vertical change	1.100	spatial				
	geo_QRTZ	mapped or DH logged quartz	1.020	50				
	geo_QTZ75%	mapped or DH logged quartz - 75%	1.030	50				
	geo_QTZ50%	mapped or DH logged quartz - 50%	1.020	100				
	geo_QTZ25%	mapped or DH logged quartz - 25%	1.010	150				
	geo_PY_5%	DH logged pyrite content >5%	1.050	100				
	geo_PY_2%	DH logged pyrite content >2%	1.020	200				
	geo_PORD	mapped or DH logged porphyry dyke	1.030	150				
	geo_PO_5%	DH logged pyrrhotite content >5%	1.080	150				
	geo_PO_2%	DH logged pyrrhotite content >2%	1.030	250				
	geo_FAUZ	mapped or DH logged fault zone	1.020	100				
	geo_DIOR	mapped or DH logged diorite	1.070	150				
	geo_BASA	DH logged basalt	1.070	100				
	geo_BAS_mapped	Mapped basalt	1.020	spatial				
	geo_ASP_5%	mapped or DH logged arsenopyrite >5%	1.040	200				
	geo_ASP_2%	mapped or DH logged arsenopyrite >2%	1.020	250				
	geo_APCB_mapped	mapped and interpreted carbonaceous sediments	1.030	spatial				
	geo_alt_SIL	mapped or DH logged silica alteration	1.080	100				



Layer	Description	Weighting	Buffer
=	•	1.030	200
geo_alt_SID	mapped or DH logged siderite alteration		
geo_alt_SER	mapped or DH logged sericite alteration	1.050	100
geo_alt_GRA	mapped or DH logged graphitic alteration	1.010	200
geo_alt_CHL	mapped or DH logged chlorite alteration	1.020	150
geo_alt_CARB	mapped or DH logged carbonate alteration	1.040	300
Cu_1000	Downhole Copper data > 1000ppm	1.060	250
Cu_500	Downhole Copper data > 500ppm	1.040	400
Cu_250	Downhole Copper data >250ppm	1.020	500
Cd_25	Downhole Cadmium data >500ppm	1.020	500
Au_0.25	Downhole Gold data >0.25ppm	1.030	750
Au_0.5	Downhole Gold data >0.5ppm	1.050	500
Au_15	Downhole Gold data >15ppm	1.500	50
Au_5	Downhole Gold data >5ppm	1.300	150
Au_1	Downhole Gold data >1ppm	1.120	100
As_1000	Downhole Arsenic data >1000ppm	1.200	100
As_500	Downhole Arsenic data >500ppm	1.100	400
As_200	Downhole Arsenic data >200ppm	1.070	350
As_100	Downhole Arsenic data >100ppm	1.050	300
AS_50	Downhole Arsenic data >50ppm	1.020	500
AS_25	Downhole Arsenic data >25ppm	1.010	750



#### **JORC Table 1**

#### Section 1 Sampling Techniques and Data

Section 1 is divided into 2 sections by topic:

- a. Air Core Drilling
- b. Historic Drilling

## Section 2 Reporting of Exploration Results

- c. Air core Drilling
- d. Mineral Prospectivity Mapping



# Section 1 Sampling Techniques and Data – a. Air Core Drilling

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <li>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 down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>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 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems.</li> </ul>	Sampling is conducted by collecting rock chips via air core drilling  Dry samples will be split with a 1/8 <sup>th</sup> riffle splitter. Wet sample comprise grabs. Each meter sampled is kept and stored for respites and or follow up analysis.  For wet samples 2-3kg of sample is grabbed every 3m composite. The sample is dried crushed and pulverised at a certified lab (Gekko Ballarat) and assayed for with a 50g charge.  For each metre of bedrock sample, a geochemistry bag full of sample is taken to be dried for later pXRF analysis.  QAQC samples were inserted into the sample stream approximately every 10th sample, including matrix matched standards (Oreas) and blanks consisting of barren quarry basalt. Repeats are inserted (at least 1/hole and collected by cone and quartering the sample in the field.  Sample intervals were 3m composites with minor variation at end-of-hole (<=3m). 1m samples taken in most prospective holes adjacent to prospective holes.
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).	Drilling is performed by a Mantis 100 Truck mounted rig with 3m NQ rods.  Phasae 1 (reconnaissance) holes are vertical.  Phase 2 (infill/stepout) holes are angled at 60 degrees.
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	It is reported that when intercepting significant groundwater, the sample recovery decreased by up to 20%. Each meter is weighed in the field. Drillers are advised if sample return is deteriorating and requires improvement.  Downhole sample contamination was reported on 25% of holes and, rarely, 10% of the total sample was contamination. Most of the material is weathered bedrock/saprock and minor fresh rock. Almost all samples are wet beneath the water table and some of the fine fractions are likely to be lost to overflow from the cyclone.
		End of hole refusal 'core' was recovered on >75% of all holes drilled.
Logging	<ul> <li>Whether core and chip samples have been</li> <li>geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> </ul>	Each hole was logged quantitively into a customized Excel spreadsheet with inbuild validation scripts. All end of hole core was collected and XRF data was collected.
•	<ul> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc)</li> </ul>	The regional, vanguard AC drilling is unlikely to be used to support mineral resource determination.



photography.

 The total length and percentage of the relevant intersections logged.

#### Sub-sampling Techniques and sample preparation

- Core, whether cut or sawn and whether quarter, half or all core taken.
- If non-core, whether riffled, tube sampled, rotary it, 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 subsampling stages to maximise representivity of samples.
- Measures taken to ensure that the sampling is resentative of the in-situ material collected, inluding for instance results for field plicate/second-half sampling.
- Whether sample sizes are appropriate to the grain e of the material being sampled.

Sampling protocol was based on observations in the logging and assigned by the rig geologist.

The standard sample interval was 3m composites. Resplits to 1m are submitted for any composite over 0.17g/t Au.

All bedrock (target) samples are wet Samples are kept and 'farmed' for follow up if required.

Field duplicates were inserted into the sample stream every ~20th sample. Duplicates were preferentially undertaken on meters that appear to be more likely to contain anomalous Au.

Certified reference material (CRM) is inserted into the sample stream on every ~20th sample. CRM was inserted in between on meters that appear to be more likely to contain anomalous Au.

A blank was inserted into the sample stream after an interpreted anomalous zone or every ~30 samples.

#### Quality of assay Data and laboratory tests

- The nature, quality and appropriateness of the assaying and laboratory procedures used
- 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.

Every sample usually varied between 1.5 and 3kg.

Analysis for gold is undertaken by ALS by 50gfire assay with an AAS finish to a lower detection limit of 0.01ppm Au using ALS technique Au-AA26.

ALS also conduct a 33 element Four Acid digest ICP-AES (method: ME:ICP61) analysis on each sample to assist interpretation of pathfinder elements.

Samples were processed at Gekko Assay Laboratory are dried, crushed and pulverised (<75um), analysed with Fire Assay for gold with an ICP acid digest for 10 elements (Ag, As, Bi, Cd, Cu, Mo, Pb, Sb, W, Zn).

Internal laboratory QAQC checks are reported by the laboratory and a review of the QAQC reports suggests that the laboratory is performing within acceptable limits.

#### 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.

The data has been verified by North Stawell Minerals Competent Person

Data entry is via standardized Company excel templates, using pre-set logging codes, with built in validation checks.

Data is presently being transferred to a third-party geodatabase; further internal validations before export products are generated. Data is further validated visually in GIS and 3D software by North Stawell Minerals Personnel.



Location	of	data	1
points			

- Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.
- Specification of the grid system used.
- Quality and adequacy of topographic control.

The collar coordinates were collected with a handheld GPS with an accuracy of 1.8m. The coordinates are input into the logging spreadsheet and are viewed in GIS software for validation.

The coordinates were collected in GDA94 / MGA zone 54

All collars are levelled to the DEM which was collected by AGG geophysics to a 1m accuracy.

# 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.

Data spacing is typically 100m on drilling lines and ~300m between fences.

Data is not considered applicable to be included for Resource/Reserve estimation.

Sample Compositing has not been applied to this

drilling

#### 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.
- exploration to collect basement geochemistry data thorough alluvial cover and hence vertical drilling is appropriate.

  Angled holes (all Phase 2 Infill Drilling) have azimuths

Drilling was designed as first pass regional

 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.

perpendicular to the regional trend.

No material sample bias is expected or observed.

#### Sample security

The measures taken to ensure sample security.

Samples were returned to site each day and stored inside a secure, fenced area.

Samples were loaded into labelled polyweave bags and secured with plastic wrap on pallets prior to transportation.

Chain of custody is managed by internal staff and transport contractors. Drill samples are stored on site and transported by a licensed reputable transport company to ALS Laboratories or Gekko Assay Laboratories. Sample receipts are issued. At the laboratory samples are stored in a secured yard before being processed and tracked through preparation and analysis.

Sample information other than the company name and the sample ID are not provided to the laboratories.

#### Audits or reviews

The results of any audits or reviews of sampling

There has been no external audit of the Company's sampling techniques or data.



# Section 1 Sampling Techniques and Data - b. Historic Drilling

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <li>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 down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>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 30g charge for fire assay'). In other     </li> </ul>	Historic results (only depicted on Figures) are from previous exploration conducted by past explorers including Rio Tinto Exploration, WMC Resources, Leviathan Corporation, Highlake Resources, Planet Resources and Stawell Gold Mines.
Drilling techniques	Drill type (e.g., core, reverse circulation, openhole 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).	A variety of techniques have been used in historic drilling and includes regional lines of RAB or Air core drilling (357 of 732 historic holes) over identified structures or geophysical anomalies. Follow up historic RC drilling (233 holes) under AC anomalies occur is sound practice. Pattern drilled RC at Wildwood is likewise an industry standard for resource drilling. Forty-eight historic diamond holes (8,228m) were completed – mainly focused on near Mine targets in the south and in the Wildwood Project area (RL007501).
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> </ul>	historic drilling where documented.  For historic data, if available, drilling data recoveries (e.g., weights for historic AC/RC drilling and recoveries for historic diamond drilling are recorded.
	<ul> <li>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.</li> </ul>	No tests for bias are identified yet for historic results.
Logging	<ul> <li>Whether core and chip samples have been</li> <li>geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> </ul>	Geological logging of historic holes, where reviewed, follows industry common practice. Qualitative logging includes; lithology, mineralogy, alteration, veining and weathering and (for core) structures.
	<ul> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> </ul>	All historic logging is quantitative, based on visual field estimates.
	<ul> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	
Sub-sampling Techniques and sample	Core, whether cut or sawn and whether quarter, half or all core taken.	Standard industry practices are expected to be in place However, QAQC data is incomplete in the historic data. It is considered that appropriate analytical
preparation	<ul> <li>If non-core, whether riffled, tube sampled, rotary it, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality, and appropriateness of the sample preparation</li> </ul>	methods have been used by historic explorers.  Historic core sampling is typically sawn half-core.



Quality of assay Data and laboratory tests

Verification of sampling and assaying

Location of data points

Data spacing and distribution

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•	Quality control procedures adopted for all sub- sampling stages to maximise representivity of samples.	Historic RC and AC samples are typically riffle split or spear sampled. Information is not always complete.
•	Measures taken to ensure that the sampling is representative of the in-situ material collected, icnluding for instance results for field plicate/second-half sampling.	Historic sampling is typically dry.
•	Whether sample sizes are appropriate to the grain e of the material being sampled.	
•	The nature, quality and appropriateness of the assaying and laboratory procedures used 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.	Historic assays include gold +/- arsenic and base metals. Assays are generally aqua regia or fire assay. Detection limits and techniques are appropriate for historic results.
•	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.	Historic intercepts have not been verified by the Company. The data from WMC, Leviathan and Stawell Gold Mines has been verified as part of entering data into geological databases.  No adjustments to assay data have been made.
•	Discuss any adjustment to assay data.	
•	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	Locations for historic collars have been captured in WGS84, AGD 66 and GDA94 projected coordinates or in local grids. All data is reprojected as GDA94 MGA54.
•	Specification of the grid system used.	Historic drill collars have been determined with several
•	Quality and adequacy of topographic control.	techniques, ranging from survey pick-up through differential GPS.
		Topographic data is based on generational topographic maps and/or survey pick-up. Topographic control, for regional exploration, has not been validated. Future use of data will verify recorded elevations against high-resolution topographic data acquired by NSM.
•	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	Historically, variable drill hole spacings are used to test targets and are determined from geochemical, geophysical, and geological data.
•	Resource and Ore Reserve estimation procedure(s) and classifications applied.	Historic regional and geochemical drilling (AC) is drilled on strike perpendicular fences, with approx. 100m hole spacings and 100-400m line spacing
•	Whether sample compositing has been applied.	Historic RC sampling is generally specifically targeted to

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follow up AC results. Minor RC fences are drilled, on 30-

Historic diamond drilling is located to follow up on

Historic data in the footprint of the tenement EL007324 were designed and executed as regional exploration.

200m spacing.

specific prior results or targets.



			The historic drilling data has not been reviewed for its appropriateness to inform Mineral Resource Classification.
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.	The historic drill orientation is perpendicular to the regional geology and known mineralised trends previously identified from earlier drilling.
	•	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.	
Sample security	•	The measures taken to ensure sample security.	Sample security has not been reviewed for the historical data.
Audits or reviews	•	The results of any audits or reviews of sampling	There has not been internal or external audit or review of historic assays identified.



# Section 2 Reporting of Exploration Results - c. Drilling

Criteria JO	PRC 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.	Current tenements are summarised in Appendix 1 - Table 1 of the announcement. Historic tenements are identified from the Victorian Government Geovic onli spatial resource
		All granted tenements are current and in good standin
	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.	The project area occurs on freehold land. Minor Crow Land (>3%) and Restricted Crown Land (>1%) is identified. All areas are accessible if appropriate land access requests and agreements are in place.
		The Victorian Governments Geovic spatial online resource does not identify any material cultural, environmental, or historic occurrences.
		The southern end of EL007324 encompasses parts the Stawell Township. These areas are complicated dense, urban freehold land parcels, and challenges gaining access may occur if attempted.
		EL007324 is held by Stawell Gold Mines (SGM). No Stawell Minerals has an earn-in agreement with SG Initial Interest is 51%. Up to 90% earn-in can be achieved on meeting agreement conditions.
		Tenement security is high, established in accordance with the Victorian Mineral Resources Act (MRSDA) Regulations (MR(SD)(MI)R 2019).
Exploration done by other parties	<ul> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	The Tenure area has been explored in several campaigns since the 1970's, principally by companion related to Stawell Gold Mines and its predecessors (initially WMC Resources in the 1970's, Leviathan Resources and then subsequent owners).
		Rio Tinto Exploration, Planet Exploration, Highlake Resources and Iluka Resources have also held part the tenement historically.
		Public data available on exploration programmes hat been downloaded from the Victorian State Governments' GeoVic website and sometimes describes exploration strategy, which is consistent vexploring for gold mineralisation under shallow cove into structural targets generated from available geochemistry and geophysics.
		Although NSM has reviewed and assessed the exploration data, it has only limited knowledge of the targeting and planning process and, as a consequer has had to make assumptions based on the available historical data generated by these companies. However, the methodology appears robust.
		Work by Iluka was for Heavy Minerals exploration at is not material to gold exploration.

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Most programs include regional lines of RAB or AC



drilling (577 of 650 holes) over identifiable magnetic highs. Follow up RC drilling (58 holes) under AC anomalies occur is sound practice. Eleven diamond holes (2419m) are completed – mainly focused on near Mine targets in the south.

Work has identified large, low grade gold anomalism along major interpreted structures (magnetics) and represents a technical success.

In the far south of tenement EL007324 and EL007325, exploration is typically testing for fault-repeats of the Stawell-type mineralisation, cantered on magnetic anomalies. Basalt 'dome' analogies were identified with minor associated mineralization.

#### Geology

 Deposit type, geological setting and style of mineralisation. The project areas are considered prospective for the discovery of gold deposits of similar character to those in the nearby Stawell Gold Mine, particularly the 5Moz Magdala gold deposit located over the Magdala basalt dome. The Stawell Goldfield has produced approximately 5 million ounces of gold from hard rock and alluvial sources. More than 2.3 million ounces of gold have been produced since 1980 across more than 3 decades of continuous operation.

Orogenic Gold occurrences are possible away from the basalt domes.

Wonga-style mineralisation is possible, interpreted as Intrusive-Related Gold, and may be either an upgrade on prior (orogenic mineralisation) or a fresh mineralisation event.

The geological setting is a tectonised accretionary prism on the forearc of the Delamerian-aged Stavely Arc active plate margin.

Elements of the subducting tholeiitic basaltic ocean crust are incorporated into the accretionary pile and are important preparatory structures in the architecture of Stawell-type gold deposits.

Mineralisation is a Benambran-aged hydrothermal (orogenic gold) overprinting event – penecontemporaneous with other major mineralisation events in western and central Victoria (e.g., Ballarat, Bendigo, Fosterville).

#### Drill hole 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
   o dip and azimuth of the hole
   o down hole 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.

Details of all air core drilling is summarised in Appendix 2 of this report

Sections and plans with summaries of assay are included in the body of the document for all drilling completed.

Summary tables of drillhole data are included.

Pathfinder elements determined by ICP for Gekko samples are not reported – these are vectors to mineralisation. Where discussed in the text, laboratory analyses for these elements are described in qualitative terms.



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.	Only results with anomalous gold values (>0.05ppm) have been reported.  No metal equivalents have been reported No metal equivalent reporting is used or applied.
•	Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low-grade results, the procedure used for such	For significant results (<1g/t Au) No external dilution is used. Internal dilution up to 2m so long as the average grade remains significant.  For anomalous results (1 g/t Au>assay>0.05 g/t Au) no internal or external dilution is used.
	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.	"including" results will be stated where the included result is an order of magnitude greater that the larger intercept.
Relationship between mineralisation	These relationships are particularly important in the reporting of Exploration Results.	AC drillholes in this program were angled. Intercept lengths are down-hole length.
widths and intercept lengths	<ul> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> </ul>	Orientations of mineralisation are not known but are expected to be sub-vertical to moderately dipping.
	<ul> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g., 'down hole length, true width not known').</li> </ul>	
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.	Diagrams are included in this report, including locations, plans and sections and areas mentioned in the text.
Balanced • reporting	Where comprehensive reporting of all Exploration	All drill holes have been surveyed by hand- held GPS,
	Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced avoiding misleading reporting of	which is considered an appropriate degree of accuracy
		for regional exploration air core drilling.
	Exploration Results.	For the exploration results, only significant and anomalous exploration results are reported and described.
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.	Geophysical data is described in the text. Details of the processing methodology are available in Table 1 of the September 2021 Quarterly report and in Table 1, part B: Geophysical inversions.
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).	Further campaigns of drilling will be based on the completion of the current air core programme, followed by evaluation of the data. For better results, infill 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.	is expected to delineate trends.  Other drill rigs (RC or DD as appropriate) will executer any deeper follow up work.



#### Section 2 Reporting of Exploration Results - d. Mineral Prospectivity Mapping

Criteria	JOR	C 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.	See JORC Table 1 Section 2 reporting of Exploration Results – c. Drilling
Exploration done by other parties	•	Acknowledgment and appraisal of exploration by other parties.	See JORC Table 1 Section 2 reporting of Exploratio Results – c. Drilling
Geology	•	Deposit type, geological setting and style of mineralisation.	See JORC Table 1 Section 2 reporting of Exploration Results – c. Drilling
Drill hole 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 o dip and azimuth of the hole o down hole length and interception depth	See JORC Table 1 Section 2 reporting of Exploration Results – c. Drilling
	•	o 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.	
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.	For the Mineral Prospectivity Mapping, drill data aggregation was completed to identify regions of general assay distributions – not to inform reportable or individual holes.
	•	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.	Each element was given spatial coordinates in XYZ space in 3D software, exported to GIS as XY data, and buffers applied to demonstrate the potential influence of the mapped element. Each range of values for each element were combined into a single layer representing that value range and a weighted value applied. Buffers applied were
		equivalent values should be clearly stated.	typically larger for lower values, but with lower weighting (and impact on prospectivity) than higher value data.
			The same methodology was used for other drillhole data (alteration, rock types, logged mineralisation) Spatial data was combined to a single layer in GIS and a buffer applied only if there was a meaningful geological reason (i.e. zones around faults, margins of identified basalt domes, margins of intrusive rocks)
Relationship between mineralisation widths and intercept	•	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.	See JORC Table 1 Section 2 reporting of Exploration Results – c. Drilling – not applicable to Mineral Prospectivity Mapping
lengths	•	If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g., 'down hole length, true width not known').	



#### 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.

Diagrams are based on point sampling of the combined spatial datasets contributing to the "weighed score" for Mineral Prospectivity Mapping. Each layer contributed to a 'prospectivity value' point on a 100 by 100m grid (47,000 points total). Validation of 'values' vs known mineralisation allowed conformation of areas of interest. Points were coloured by relative Prospectivity scores.

# 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 avoiding misleading reporting of Exploration Results.

All of the 47,000 data points are used in diagrams. As the data is a relative scale between not prospective and most prospective, the data is self-sorted as a relative measure of likely prospectivity.

Mapped Target areas had prospectivity measured by averaging the relative scores of all the sample points that fell within the footprint of the target. This process is expected to effectively buffer the impact of large or generous target shapes by diluting overall prospectivity. Typically, these larger areas were sub-divided into discrete smaller targets based on the spatial distribution of higher relative scores.

Resulting Targets (and prospectivity scores were reviewed and validated against expectations of NSM geologists and the effective identification of areas known to be mineralized for approximate agreeance between the data and the Mineral Prospectivity Map for a meaningful expectation of increased. Mineral Prospectivity.

# 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.

Layers contributing to Mineral Prospectivity Mapping, buffers applied and weightings used for each layers contribution to Mineral Prospectivity are recorded in Appendix 3.

Geological architecture – interpreted major structures and flexure zones, for example, were given spatial zones of influence in GIS to capture their contribution to prospectivity.

Geophysics data was also captured spatially to map areas of influence, and a weighted score applied.

All 3D products (e.g. inversions data, geophysical worming) were projected to surface for mapping.

#### Further work

- The nature and scale of planned further work (e.g., tests for lateral extensions or depth extensions or largescale 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.

This data will be used as part of on-going review and re-evaluation of the NSM tenement portfolio to target the best areas of the geology for exploration focus.

The whole-of-area product derived by the Mineral Prospectivity Mapping is further anticipated to allow for a global Exploration Potential determination in the future.