ASX Announcement
29 October 2024

ASX: MKR

MAIDEN ORE RESERVE – WONAWINTA SILVER MINE

Highlights

- The Wonawinta Silver Mine and Processing plant is a **highly strategic asset located within the prolific Cobar Basin**, NSW, and owned 100% by Manuka Resources Limited.
- **Wonawinta is the only primary silver Reserve in Australia with all mining approvals current and intact, and process plant fully constructed** - Wonawinta was producing silver for Manuka as recently as late 2022.
- **Ore Reserve of 4.8Mt[1] at 53.8g/t Ag containing 8.4Moz** of silver comprising:
    - Proved Ore Reserves of 0.8Mt at 50.8g/t Ag; and
    - Probable Ore Reserves of 4.1Mt at 54.3g/t Ag.
- **Ore Reserve is based solely on shallow (<40m deep) oxide material.**
- Total Wonawinta Resource comprises 38.3Mt at 41.3g/t Ag for 51Moz of silver (ASX release 1 April 2021).
- The Ore Reserve and associated Implementation Plan will be used to assess the **potential to take Wonawinta out of active care & maintenance and recommence silver production.**
- Manuka is currently focused on the restart of a high-margin operation at its 100% owned Mt Boppy Gold Project located 50km east of Cobar and progressing approvals for its world-class vanadium rich irons sand project located in the Southern Taranaki Bight, New Zealand.

Manuka's Executive Chairman, Dennis Karp, commented:

"Manuka's Maiden Silver Ore Reserve and the preparation of an Implementation Plan for Wonawinta represents a major milestone for the Company and supports a potential of restarting silver mining and processing operations in the future. Our process plant at Wonawinta has been kept in excellent condition and on active care & maintenance since the processing of gold from stockpiles hauled from Mt Boppy, ceased in February 2024 and therefore stands ready to come back online at short notice.

The prospect of restarting Wonawinta provides the Company with excellent optionality on silver and the potential to take advantage of the very buoyant precious metals prices and broader strategic opportunities within the Cobar Basin. We look forward to providing further updates to the market as our strategy progresses.

[1] Arithmetic errors may be present due to rounding

Summary

Manuka Resources Limited ("**Manuka**" or the "**Company**") is pleased to announce a Maiden Ore Reserve (under its ownership) of the Wonawinta Silver Mine ("**Wonawinta**" or the "**Project**"), located 80km due south of Cobar in New South Wales (Figure 1). The Ore Reserve and associated Implementation Plan provides the Company with a clear production pipeline and pathway toward a dual precious metals revenue stream from two operating assets in the Cobar basin, namely Mt Boppy Gold Mine and Wonawinta.

Wonawinta was built by Cobar Consolidated Resources ("**CCR**") in 2011 and acquired by Manuka in 2016. The Project comprises a granted mining lease, existing open pits mines, an existing 1Mtpa CIL process plant and associated infrastructure including approved tailings dams and accommodation facilities (Figures 2 – 4). Whilst limited silver production was undertaken by Manuka in 2022, the Wonawinta plant has primarily, and as recently as December 2023, been used by Manuka to produce gold doré from ore hauled from the Mt Boppy gold mine.

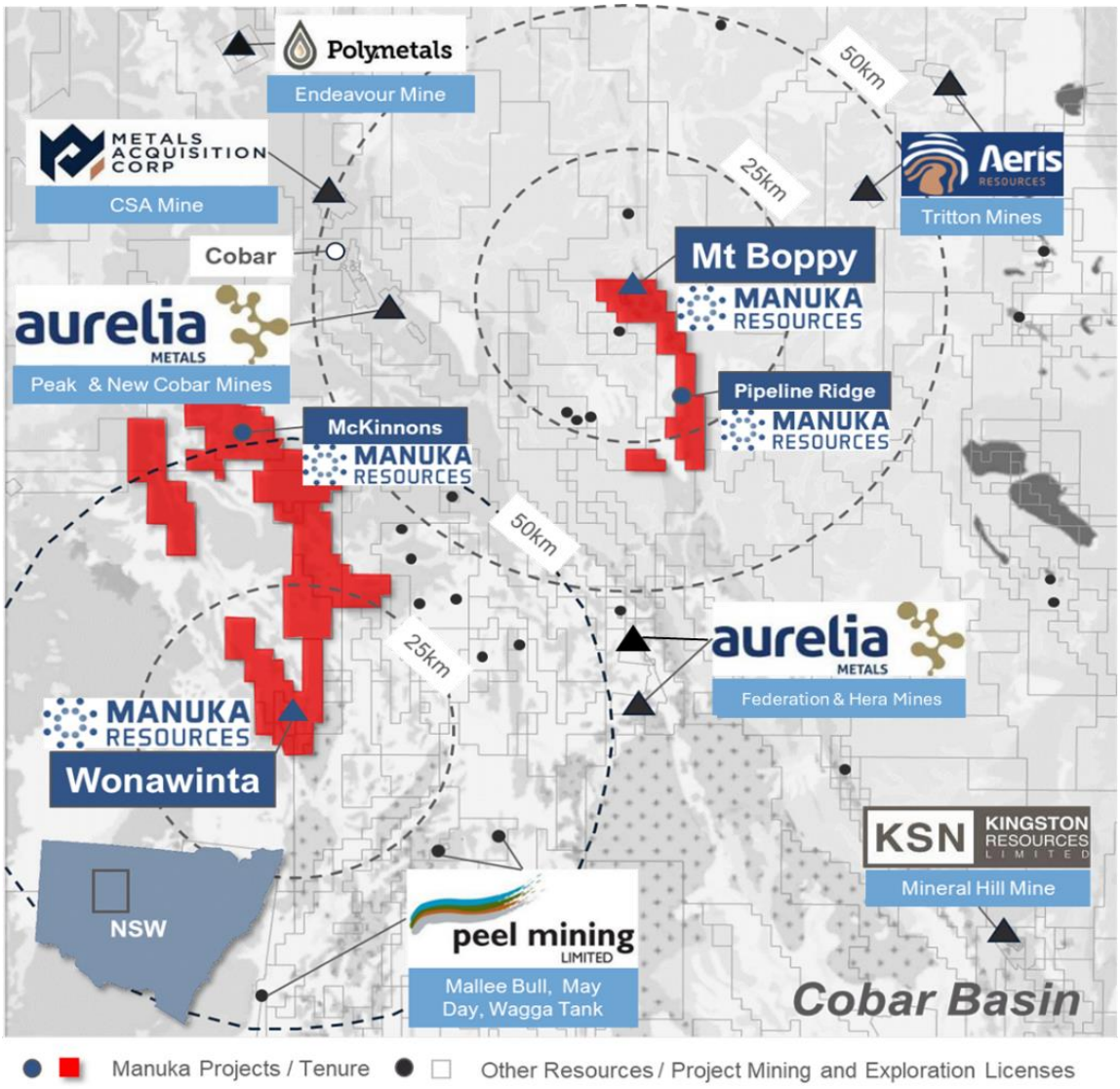

Figure 1: Location of Manuka's Wonawinta and Mt Boppy Projects within the Cobar basin.

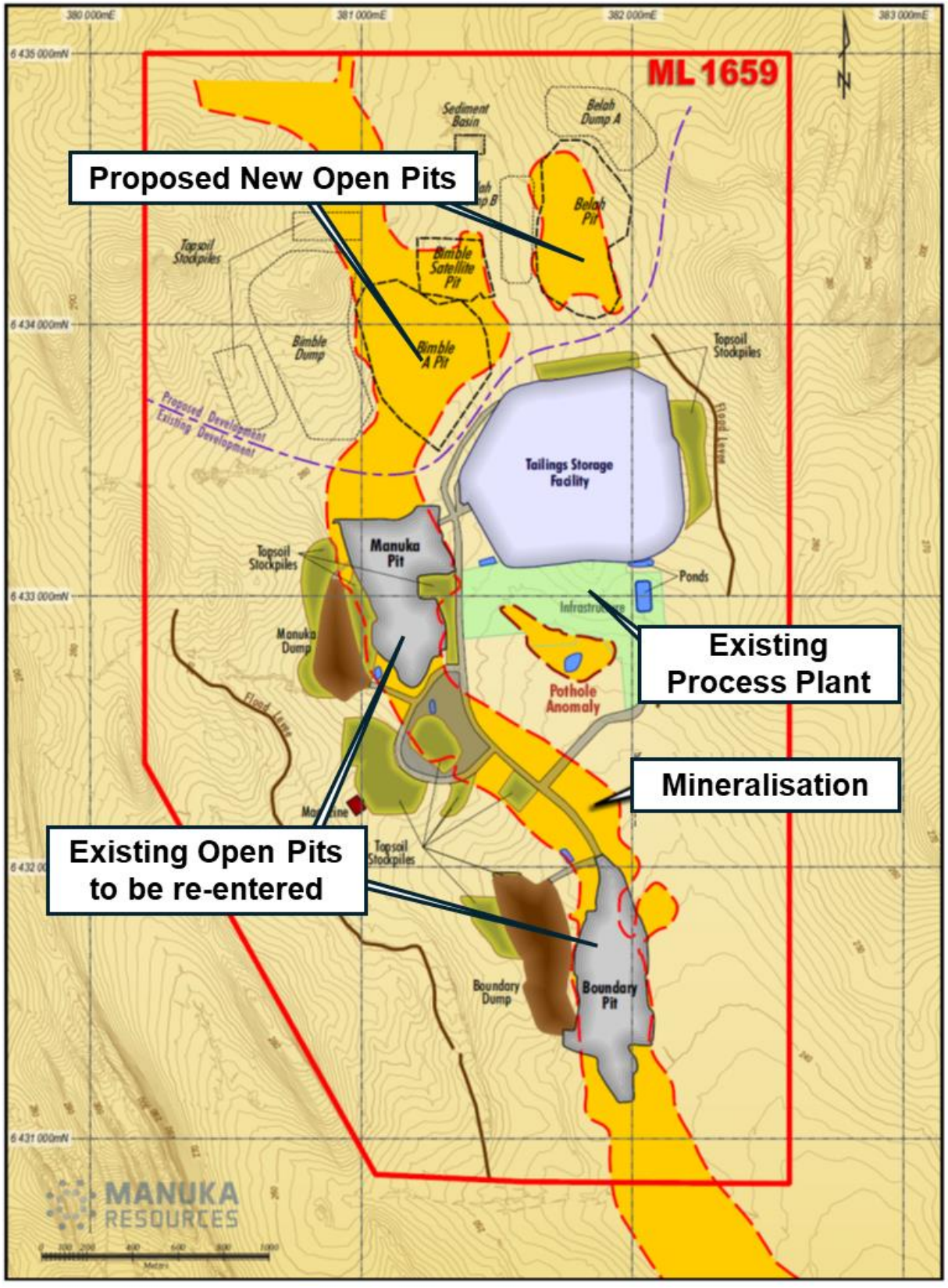

Figure 2: Overview of the Wonawinta Mine Site.

Figure 3: Existing Manuka Open Pit

Figure 4: The existing Wonawinta CIL Processing Plant

The current Implementation Plan proposes the mining and processing of 4.8Mt of Ore at a grade of 54g/t Ag over 4.5 years for the recovery of 5.8Moz of silver. Capital Costs for taking the mine out of care & maintenance and recommence production are estimated to be A$3.7M plus A$12.4M in pre-strip mining. Based on the current silver forward curve and an All-In Sustaining Cost of A$40.51/oz, the mine plan would deliver operating cash flows of ~A$100M based on the Ore Reserve alone.

As the price and demand outlook for silver continues to develop, Manuka will continue to refine its economic model for the Project and look to further optimise the mining schedule and reduce pre-production mining costs ahead of a decision to commence the restart of operations.

Mineral Resource Estimate

The Wonawinta Mineral Resource Estimate of April 2021 was compiled by Mining Associates Limited (MA) based on a cut-off grade of 20 g/t Ag using block models developed by MA based on ordinary kriging techniques (ASX release 1 April 2021).

Table 1: Wonawinta Silver Project Mineral Resource – 1 April 2021[2]

Resource Category	Mt Ore	g/t Ag	%Pb	Ag Moz	Pb kt
Measured	1.1	47.3	0.69	1.65	7.5
Indicated	12.3	45.5	0.83	18.04	102.8
Inferred	24.9	39.0	0.39	31.25	96.9
Total	**38.3**	**41.3**	**0.54**	**50.94**	**207.2**

Based on 20 g/t Ag cut-off

Ore Reserve Statement

The Ore Reserve (Table 1) was prepared by independent mining consultancy Proactive Mining Solutions Pty Ltd, open cut mine planning and design specialists.

Measured and Indicated Resources were converted to Proved and Probable Ore Reserves respectively, subject to pit designs, modifying factors and economic evaluation outline in this announcement. The Ore Reserve is based on re-entering the two existing pits (Boundary and Manuka) and the development of two new northern pits (Belah and Bimble) (Figure 2 & 3) and have been calculated using A$47.8/oz Ag and royalties of 2.4% of gross revenue including allowable deductions. A variable cut-off grade has been utilised based on the recovery for each mining block.

[2] *The Company is not aware of any new information or data that materially affects the information used to compile the 2021 Mineral Resource and all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed. The 2021 Mineral Resource included a separate stockpile category which has not been used in the estimation of an Ore Reserve. These stockpiles were processed in 2022/23 in a trial phase of processing with observations reported in Appendix 1.*

Table 2: Wonawinta Silver Project Ore Reserve (by pit)

Ore Source	Proved			Probable			Total		
	Mt	g/t Ag	Moz	Mt	g/t Ag	Moz	Mt	g/t Ag	Moz
Belah Pit	-	-	-	1.0	60.6	1.9	1.0	60.6	1.9
Bimble Pit	-	-	-	0.7	57.4	1.3	0.7	57.4	1.3
Boundary Pit	0.4	50.1	0.6	1.3	49.7	2.1	1.8	49.8	2.9
Manuka Pit	0.4	51.5	0.7	1.1	52.5	1.9	1.5	52.3	2.5
Total	**0.8**	**50.8**	**1.3**	**4.1**	**54.3**	**7.1**	**4.8**	**53.8**	**8.4**

Note: Tonnes and Grade are rounded. Discrepancies in calculated Contained Metal is due to rounding.

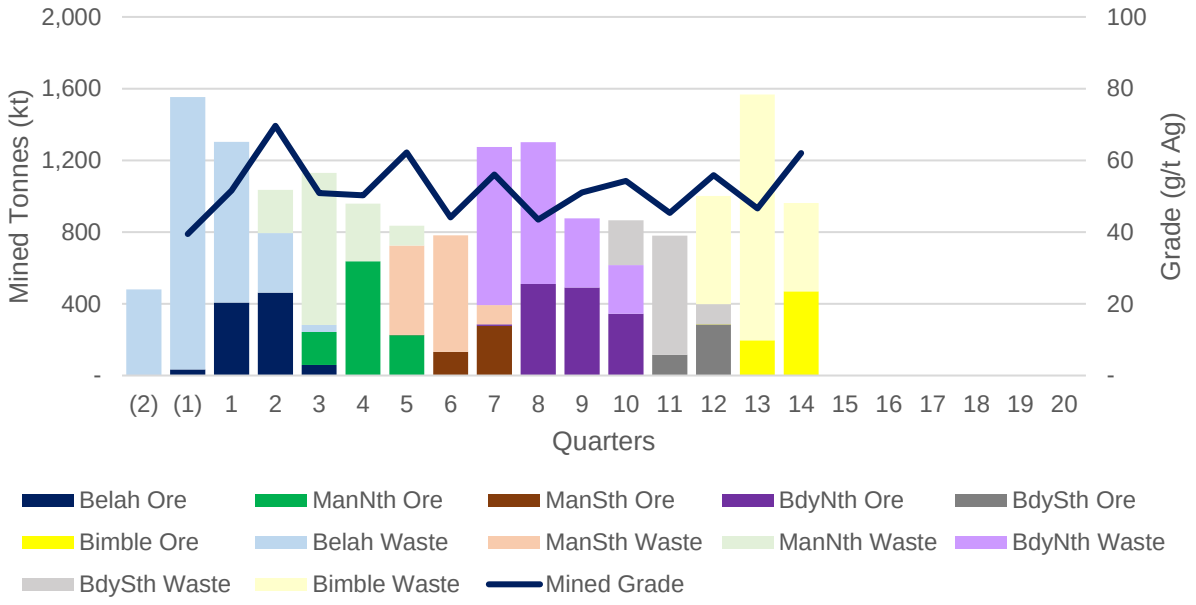

Figure 5: Wonawinta mining profile

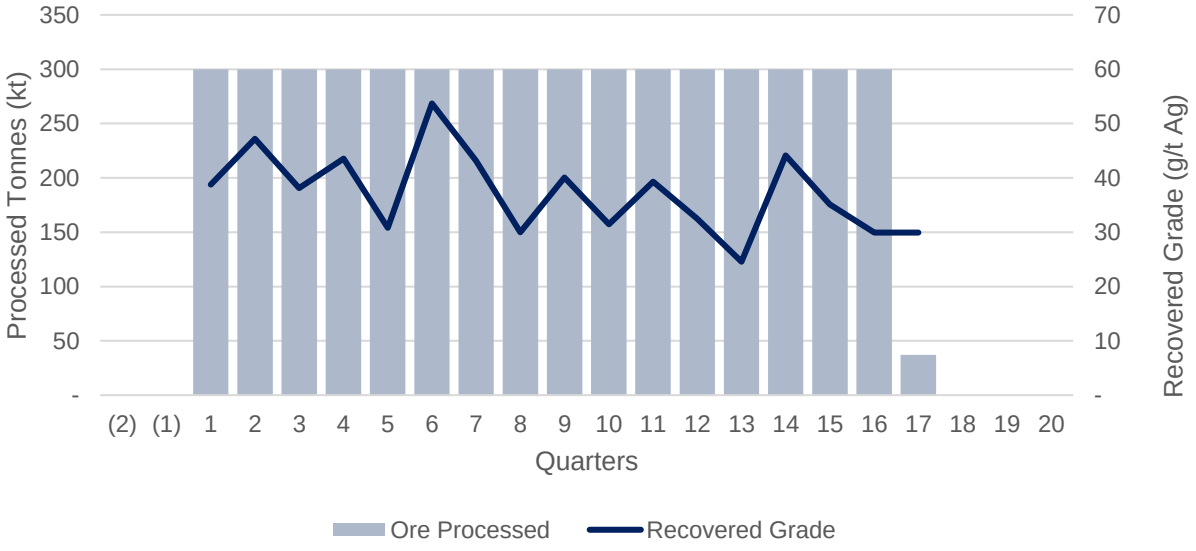

Figure 6: Wonawinta ore Processing profile

Growth Opportunities

Resource to Reserve Conversion

The Ore Reserve and associated Implementation Plan incorporates only Proved and Probable Reserves representing only 13% of the Wonawinta Mineral Resource Estimate. The main zone of silver-lead-zinc mineralisation in the project occurs along a 6km strike length that is parallel to the Wonawinta Anticline hinge (Figure 2). Further infill drilling between the proposed open pits is anticipated to increase Resource confidence and allow for its incorporation into the Reserve based mine plan.

Leverage to Silver Price

Economic analysis has demonstrated the Project is highly sensitive to movements in the silver price. A 10% increase in the silver price results in a 32% increase in operating cash flows from A$100M to A$132M.

Base Metals Exploration

The Wonawinta silver deposit has been described as exhibiting characteristics of a Mississippian Valley Type ("**MVT**") deposit. Such deposits are hosted by dolostone and limestone in platform carbonate sequences and usually located at the flanks of basins or foreland thrust belts and are rich in lead-zinc and silver.

Previous owners of Wonawinta did not target sulphide mineralisation, with most drill holes terminating at base of weathering. A limited exploration program undertaken by Manuka in 2021[3] targeting sulphide mineralisation beneath the existing Resource returned encouraging intervals of galena (lead sulphides) and sphalerite (zinc sulphite) in conjunction with silver mineralization (Figure 7). The strike and lateral extent of Booth Limestone represents a large potential base metals sulphide Resource at the Project.

Strategic Value

The Wonawinta process plant sits on an approved Mining Lease and is strategically located within trucking distance of significant undeveloped deposits and current operations within the Cobar basin. Outside of silver production from the Wonawinta Resource, the Wonawinta process plant could be readily upgraded to produce base metal concentrate source either from withing Manuka's tenure or from third parties. The Company see significant value in the commercial optionality that the Wonawinta process plant provides.

[3] ASX Release 1 June 2021

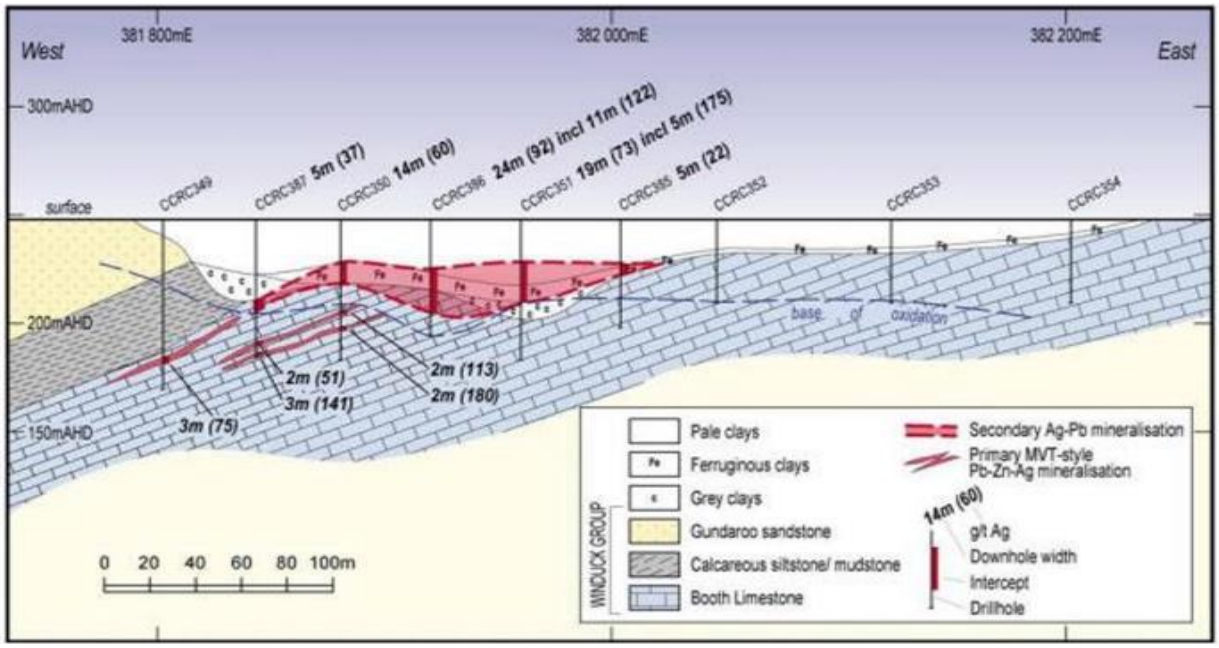

Figure 7: Typical cross section through mineralisation at Wonawinta showing Booth Limestone and MVT style mineralisation beneath and down dip of Wonawinta silver open oxide pits

Significant intercepts down dip of the Wonawinta Resource

Proof-of-Concept' drill program has successfully tested for presence of carbonate-hosted sulphides in the Winduck Shelf strata down-dip from existing Wonawinta open pits encountering lead-zinc-silver mineralisation over 3km strike

Mineralised intervals include:

- 20m @ 1.98% Pb+Zn, 43 g/t Ag = 110 g/t AgEq (94 - 114m in DBM003)
    - including 4m @ 6.34% Pb+Zn, 63 g/t Ag = 372 g/t AgEq (101 - 105m)
- 11.4m @ 1.23% Pb+Zn, 83.5 g/t Ag = 125.5 g/t AgEq (130 - 141.4m in DBM004)
- 5.0m @ 2.52% Pb+Zn, 128 g/t Ag = 201 g/t AgEq (63-68m in DBL003)

Single-meter assays include:

- 1.0m @12.18% Pb+Zn, 343 g/t Ag = 732 g/t AgEq (104-105m in DBM003)
- 1.0m @11.93% Pb+Zn, 314 g/t Ag = 701g/t AgEq (101-102m DBM003)
- 1.0m @ 4.2% Pb+Zn, 419 g/t Ag = 561g/t AgEq (135-136m in DBM004)
- 1.0m @5.94% Pb+Zn, 339 g/t Ag = 505 g/t AgEq (66-67m in DBL003)
- 1.0m @ 5.02% Pb+Zn, 347g/t Ag = 485 g/t AgEq (105 - 106m in DMA002)
- 1.0m @4.72% Pb+Zn, 183 g/t Ag = 330 g/t AgEq (67-68min DBL003)

Implementation Plan

Summary

The Wonawinta Ore Reserve has been compiled in conjunction with an Implementation Plan which details the activities, costs and schedules to commence mining and processing at Wonawinta. The Project production target is based on re-entering the two existing pits (Boundary and Manuka) and developing two new shallow oxide pits (Belah and Bimble) north of the plant, all of which are located within the existing approved area of disturbance for the mine.

The Implementation Plan contemplates a conventional truck and shovel mining operation for the excavation of free dig clays and limestone material with blasting required for the later component. Mining costs have been evaluated from first principles.

Processing costs for the Wonawinta plant have been built from actual operating cost data compiled from 2020 to 2023 when the plant was used to leach Mt Boppy gold ore and well as process a trial phase of existing silver oxide stockpiles on the Wonawinta ROM area. No initial modifications are proposed to the flowsheet of the Wonawinta plant. The Implementation Plan includes the addition of a Deslime circuit at the end of the first year of production.

Project Tenure

The Project tenements comprise a granted Mining Lease and seven adjacent exploration licences (Table 3).

Table 3: Tenement comprising the Project.

ID	Holder	Area	Grant Date	Expiry Date
ML1659	Manuka Resources Limited	923.8 Ha	23-11-2011	23-11-2032
EL6155	Manuka Resources Limited	5 units	17-11-2003	17-11-2026
EL6302	Manuka Resources Limited	96 units	23-09-2003	23-09-2026
EL6482	Manuka Resources Limited	92 units	18-11-2005	18-11-2026
EL6623	Manuka Resources Limited	9 units	31-08-2006	31-08-2026
EL7345	Manuka Resources Limited	59 units	25-05-2009	25-05-2028
EL7515	Manuka Resources Limited	5 units	07-04-2010	07-04-2027
EL8498	Manuka Resources Limited	38 units	10-01-2017	10-01-2029

The Project occurs in the Western Lands Leases of NSW where Native Title has been extinguished. Manuka is the 100% owner of the pastoral lease on which the Project Mining lease and Mineral Resource is situated.

To date, there are no option agreements or joint venture terms in place for the Project nor are there known obligations on ground covered by claims comprising the Project. No compensation agreements are in place for the Project.

Mineral Resource Estimate

The Wonawinta Mineral Resource Estimate of April 2021 was compiled by Mining Associates Limited (MA) based on a cut-off grade of 20 g/t Ag using block models developed by MA based on ordinary kriging techniques (ASX release 1 April 2021).

Resource Classification Criteria

For the classification of Mineral Resources for the Project, the following definitions were adopted and applied to each domain separately:

Measured Mineral Resources: those portions of the deposit estimated with a nominal drill spacing of 10 m x 10 m and demonstrate a high level of confidence in the geological and grade continuity of mineralisation. Blocks are dominantly estimated with a minimum of 12 composites, the nearest drill hole within 20 m and the average distance to all informing samples approximately 30 m or less. Krige efficiencies for measured mineral resources are dominantly higher than 0.5. The conditional bias slope recorded is greater than 0.8. Measured Mineral Resource are estimated in the first kriging run.

Indicated Mineral Resources: those portions of the deposit estimated with a drill spacing of 40 m x 40 m that demonstrate a reasonable level of confidence in the geological continuity of mineralisation. The following estimation statistics were used as a guideline to assist defining grade continuity. Indicated blocks have been estimated with a minimum of 6 samples, and within 40 m of a drill hole, and an average distance to all informing composites of 80m. Krige efficiencies of blocks within the Indicated category fall within the range of 0.25 to 0.4. Lower efficiency blocks may be included if a structural trend is present. Indicated resources may be estimated in the first or second kriging run.

Inferred Mineral Resources: those portions of the deposit estimated with a drill spacing of greater than 40 m x 40 m, and include areas drilled on a 250 m x 100 m sections or those portions of the deposit with a smaller number of intersections but demonstrating a reasonable level of geological confidence. Inferred Mineral Resource are estimated in the first, second or third kriging run, limited blocks from the fourth run are included where geological continuity can reasonably be assumed to exist between drill intercepts.

Conversion of Mineral Resource Estimate to Ore Reserves

The Proved Ore Reserve estimate is based on Mineral Resources classified as Measured, after consideration of all mining, metallurgical, social, environmental, statutory and financial aspects of the project. The Probable Ore Reserve estimate is based on Mineral Resources classified as Indicated, after consideration of all mining, metallurgical, social, environmental, statutory and financial aspects of the project.

Reserve Cut-off Grades

Cut-off grades have been calculated as a variable grade per block within the resource model. Each block with a silver grade above zero has a calculated metallurgical recovery, an ore cost, and a given silver price. The silver price has been modified to include a factor for dilution and recovery.

Within the Resource model, the cut off grade is calculated as:

(*ore cost) / (modified silver price x metallurgical recovery)*

From this, the silver grade of each block is then subtracted from the cut-off grade to give a margin grade. The block is then considered ore if the margin grade is greater than 0. An allowance of 15 g/t of silver has been made for mining cost. As such physicals are then calculated using three cut off bins. These are:

- Low Grade - margin greater than 1g/t Ag, but less than or equal to 15g/t Ag.
- Medium Grade - margin greater than 15 g/t and less than 35g/t Ag.
- High Grade - margin greater than 35g/t Ag.

For this case, the net silver price of A$47.89/oz has been applied to the cut-off grade calculations.

Geotechnical

Geotechnical slopes have been derived from a report by Pells Sullivan Meynink (PSM) of April 2013. No studies have been completed since then. The report suggests batter angles of 65 degrees on bench heights of 10m, separated by berms of 5m. This applies to the first 30 vertical metres from surface. Below that, a batter angle of 70 degrees for a 15m bench height, and 5m berm has been used. These give overall slopes of 46 degrees and 58 degrees respectively. Considering the slightly varying depth of oxidation, all oxide material was given 46 degrees, and fresh material given 58 degrees for the purposes of mine optimisation.

Mining Summary

The Wonawinta Resource model is reported as a potential open pit mining scenario. The Mineral Resource Estimate has been reported from surface to 190RL which is approximately 40m below surface. The proposed Manuka and Boundary pit shells are cutbacks to the previous designs. Belah and Bimble are previously unmined pits.

Pit design work has been completed using Surpac Software as below:

- Pit wall geometry is as per the geotechnical aspects outlined above.
- Ramp gradient 1:10 inside edge of the ramp.
- Ramp width of 15m as single lane ramps for 100t class trucks, for each design.
- Minimum mining width of 20m at pit floor.

Pit designs have been completed for each mining area as shown in Figure 7.

Figure 7: Pit Designs for the Boundary (top left), Manuka (top right), Belah (bottom left), Bimble (bottom right).

It is assumed that mining will occur using conventional open pit drill blast / load haul methods, using a dry hire fleet arrangement for load and haul, and a drill and blast contractor There will be a component of free dig clays, as well as transitional and hard fresh rock material. Drill and blast, where required, has been allowed for using a nominal 0.4 powder factor. A nominal fleet of 120t class excavators, and 90t class dump trucks will be used.

Mining production rates were set at 260kBCM per month as a maximum. Allowances have been made for lost shifts due to weather, equipment servicing, and some holidays. Most months require half the maximum mining rate to maintain mill feed, and as such mining is mostly completed on a day shift only basis. Mill feed rates were set at 100 kt per month. Additional smoothing of the schedule could normalise overall mining rates per month.

Mining costs have been calculated for each material type from first principles based on anticipated truck requirements and haul distances between the current pit extents and existing ROM pads and WRD locations. Due to the relatively flat lying nature of the mineralised zones, and the existing as mined shapes, no allowance has been made for vertical difference in the mining costs, other than for the oxide / fresh rock interface, and this is considered appropriate.

All-in mining costs have been calculated using rates effective May 2024. The fleet costs include maintenance and associated labour. Fuel cost as currently delivered to site, labour rates for operators, and other consumables such as GET have been allowed for. A cost adjustment for ore mining has also been included. This makes allowance for grade control and selective mining practices in ore.

Drill and blast rates are based on quotes supplied by a contractor in 2023, using Epiroc T45 top hammer drill rigs or similar. An escalation factor of 10% has been made to allow for any increase up to May 2024.

A nominal cost per mined BCM has been applied for rehabilitation works on waste rock dumps.

Mining costs have been applied to the block model, using oxidation codes to define the free dig clay, and drill and blast limestone / fresh rock. These costs have then been used directly in the Whittle optimisation process. Mining costs, ore costs and recovered silver grades were carried from the Resource model through the physicals and scheduling process. Dilution was added to the physicals (10%) increase in mineralised tonnes, and grade was reduced by 9%. The grade reduction was higher than the Whittle optimisation, to ensure no ounces were added to the mining physicals, by increasing tonnes through dilution.

Pit Dewatering

From historical records, significant inflows of groundwater are not expected into the Wonawinta open cut pits. This is mainly due to the shallow nature of the targeted silver mineralisation, hence the designed pits are relatively shallow and above the water table. As such pit dewatering will be mainly limited to capacity requirements for rain events within the open pit perimeter catchment.

Pit dewatering is planned to be managed using a leap frog system of in-pit sumps and high volume/high head diesel pump, with water being pumped to either the purpose-built evaporation and sediment ponds or used as dust suppression in and around the open cut operational areas.

As a further control measure for water in and around the open cut pits, diversion structures, such as drainage/culverts and cut off drains will be in service to help prevent any run-off flows entering the void footprint. All surface water controls are being implemented in line with the site consent conditions and the site Surface Water Management Plan.

Metallurgical Summary

ALS Testwork

Metallurgical test work was conducted for Manuka by ALS Perth on three Manuka silver ROM stockpile composites with a final report provided in June 2021. Ostensibly, ALS test results were consistent with historical plant data from March-September 2015 following the introduction of the 1800kW ball mill. Silver recoveries during this 6-month operational period were below the 85% forecast, reportedly due to unexpected ore-types and sub-optimal practices and procedures of the owners at the time. Average silver head grades reporting to the mill from the ROM were 84g/t Ag.

Data from the ALS leach tests, summarised below in Table 4, highlights the variability of the ore with respect to silver grades. Furthermore, the elevated calculated head assay recorded for the Fine Composite was found to be the result of incomplete leaching of silver contained in the +125µm fraction of the leach residue, which constituted 17% of the total mass and returned an assay of 124g/t Ag. In contrast, 2/3 of the leach residue mass was below 25µm with this fines fraction assaying only 3g/t Ag, exposing the extent of fine clay and a broad particle size distribution for the sample in question.

Together with past studies, this supports the view that silver is heterogeneously distributed over a range of complex mineral grains and particle sizes but tends to occur as localised pockets of mineralisation less than 10µm in size. The presence of finely disseminated silver is consistent with slow dissolution kinetics between 24-72 hrs across all composites, but notably in the Fine sample due to a broad particle size distribution. Relatively low sulphur content indicates substantial oxidation/weathering of the primary Ag-bearing Pb, Zn, and Fe sulphides.

Table 4. Summarised Test Data from ALS Perth – Manuka Ag ROM Stockpiles

Sample	p80	Head						Ag dissolution		CN consumtion	
		g/t Ag		% Pb	% Zn	% S	g/t Hg	%		kg/t	
		Assay	Calc	Assay	Assay	Assay	Assay	24hrs	72 hrs	24hrs	72 hrs
Coarse	104	56	63	0.77	0.784	0.14	10.3	77.8	82.5	1.47	1.62
Coarse	76	56	59	0.77	0.784	0.14	10.3	80.6	84.6	1.47	1.83
Mixed	107	74	76	1.29	0.624	0.24	11.7	79.5	85.5	1.57	2.20
Mixed	78	74	73	1.29	0.624	0.24	11.7	79.7	86.2	1.53	2.24
Fine	69	106	143	1.08	0.288	0.3	13.4	77.8	89.5	1.48	1.90

ALS Perth test data supports historical plant data which shows that a large proportion of silver was rapidly leached in the first 1,000m^3 tank (4-5 hrs) with recovery largely limited by adsorption onto carbon, which was in turn controlled by the quantity and rate of movement of carbon through the circuit. Elevated loaded carbon grades (>20,000 ppm) and reduced CIL carbon concentrations were correlated with low silver recoveries and high dissolved silver in tails.

Whilst the ALS leach data provided an indicator of the amenability of the ROM stockpiles to cyanidation under ideal laboratory conditions, further gap test work was required to provide more detail around critical operational CIL parameters and assist with flowsheet development.

Areas of specific interest included:

1. Target carbon concentrations and loadings
2. Impact of CN, DO & pH on CIL recovery
3. Effect of grind size
4. Deportment of Pb and Hg

Information on the impact of carbon loading on Ag recovery will provide practical information around total carbon inventory, CIL tank concentrations, and strip frequency. The recovery of Pb and Hg to carbon is also of interest along with any potential mitigation strategies. The aim of the gap test work is to establish baseline plant parameters and practices for the transition to silver and to identify any processing deficiencies which may limit recovery.

AMML Test Work

Preliminary AMML test work was conducted on Mixed Comp ROM Stockpile as received from ALS Perth. Initial CIL tests were designed to determine whether carbon loadings impact overall dissolution via general equilibrium-driven forces. It is generally accepted that CIL (simultaneous leaching & adsorption) enhances dissolution by lowering solution tenor, particularly at elevated concentrations. Data revealed that although silver dissolution was unaffected by carbon, reported loadings were surprisingly low based on historical data (<5000 ppm) despite dissolved silver concentrations in excess of 40ppm.

Following further CIL test work on a number of samples, it was concluded that mass-transport of silver through the carbon pore network was inhibited by ultrafine

nanoparticles and that intraparticle diffusion of silver is the slow rate-controlling step. Furthermore, -53µm fines were found to contain lower silver grades and a higher proportion of clay-locked silver unamenable to cyanide. Subsequent tests on screened material confirmed the rate-limiting effects of ultrafine particles on the adsorption of [AgCN2]- by carbon.

Figure 8 was used to explain the observations, in which the equilibrium between [AgCN2]- in solution and that adsorbed on carbon (K) is governed by the relative rates of mass-transport of silver across the liquid-carbon interface (Msoln) and its migration through the porous carbon network (Mcarb). In this model, the recovery of silver proceeds via a two-stage mechanism involving typically rapid adsorption of [AgCN2]- onto the carbon surface followed by relatively slow intraparticle diffusion. On the basis of experimental results from highly weathered stockpile material, Mcarb is rate-determining under conditions where surface sites near saturation and available active surface sites are limited by high carbon loadings.

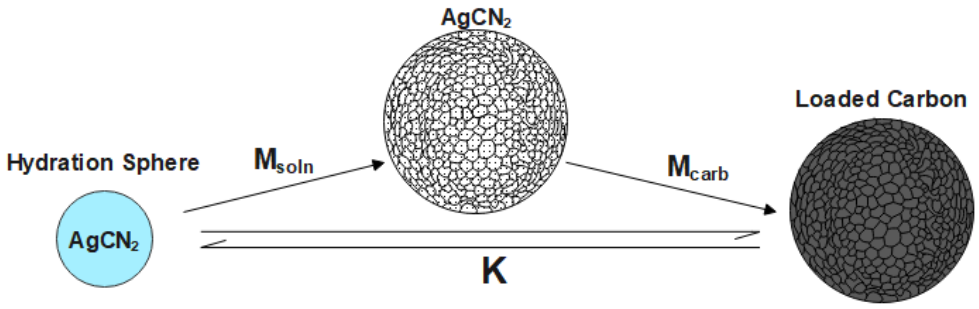

Figure 8: Adsorption of [AgCN2]- by carbon

For the purposes of corroborating assumptions around mass-transport limitations, CIL tests were performed on +20mm material obtained from the October 2021 Crusher Trial of ROM stockpiles with a view to potential processing options. Analytical data showed that whilst silver is inconsistently distributed within the stockpile, it is generally concentrated in the >75<600 um size range and diluted in -53µm fines. Mineralogy from weathered pit samples revealed the presence of oxidised silver in the form of halide grains, ranging in size from 2.5-250µm.

In contrast to CIL tests on unscreened ore, the kinetics of silver loading onto carbon from +20mm material appears faster (K is larger) with higher equilibrium loading capacity, i.e., the rate of silver loading over time is faster and more linear. Importantly, equilibrium loadings for finer feed tended to plateau below 5,000ppm, whereas screened coarse feed continued to load above 5,000ppm after 4hrs contact under laboratory conditions.

Trial Silver Processing – Metallurgical outcomes

The following observations and assumptions are based on operational plant data over the period April 2022 - January 2023 and are supported by laboratory test work findings.

1. Bimodal particle size distribution featuring fine weathered aluminosilicate clays (-38µm) and coarser limestone and quartz sediments.

2. Subeconomic Ag grades in -38µm fractions coupled with low recoveries.

3. Amenability of clays to separation in dewatering/desliming hydrocyclones.

4. Deslime cyclone feed p80 of 3-4mm.

5. An estimated 50:50 mass split in the Deslime cyclones, contingent on the proportions of fine clay and coarser sediments in the cyclone feed.

6. Approximately 5-10% Deslime cyclone overflow ("**COF**") mass >38µm and 20-30% Deslime cyclone underflow ("**CUF**") mass <38µm, contingent on the proportions of fine clay and coarser sediments in the cyclone feed.

7. An estimated 25:75 silver split in the Deslime cyclones, such that 25% silver in the scrubbed clay-rich stream is sent to tails via deslime COF and 75% is processed via deslime CUF.

8. Clays - 65% overall silver CIL recovery.

9. Limestones – 80% overall silver CIL recovery

10. Clay processing costs of A$20/t feed ore.

11. Limestone processing costs of A$31/t feed ore.

Processing Summary

Based on the substantial test work programs have been completed by ALS laboratories in Perth, as well as AMML in Gosford NSW, to determine overall silver metallurgical recovery. Samples were completed on ROM stockpile material. Site metallurgical personnel also supplied metallurgical recoveries based on Sulphur content and applied these to the block model. Metallurgical recoveries within the model are within the range of 65% and 90% and are considered valid based on historical production records.

The existing Wonawinta process flow sheet comprises a crush, mill, leach and elution circuit (Figure 9). It is proposed that a washing/scrubbing (deslime) upgrade would be added to the plant (Figure 10) once in production to allow for the removal of ~75% of clay ore ore prior to leaching

The Wonawinta processing plant was last used in February 2024 to process Mt Boppy gold ores, so major costs associated with operating the processing plant are well understood.

Current labour, fuel, chemical and electricity costs have been included in the cost modelling for the process plant and converted to a unit cost based on anticipated feed rates of 100kt per month.

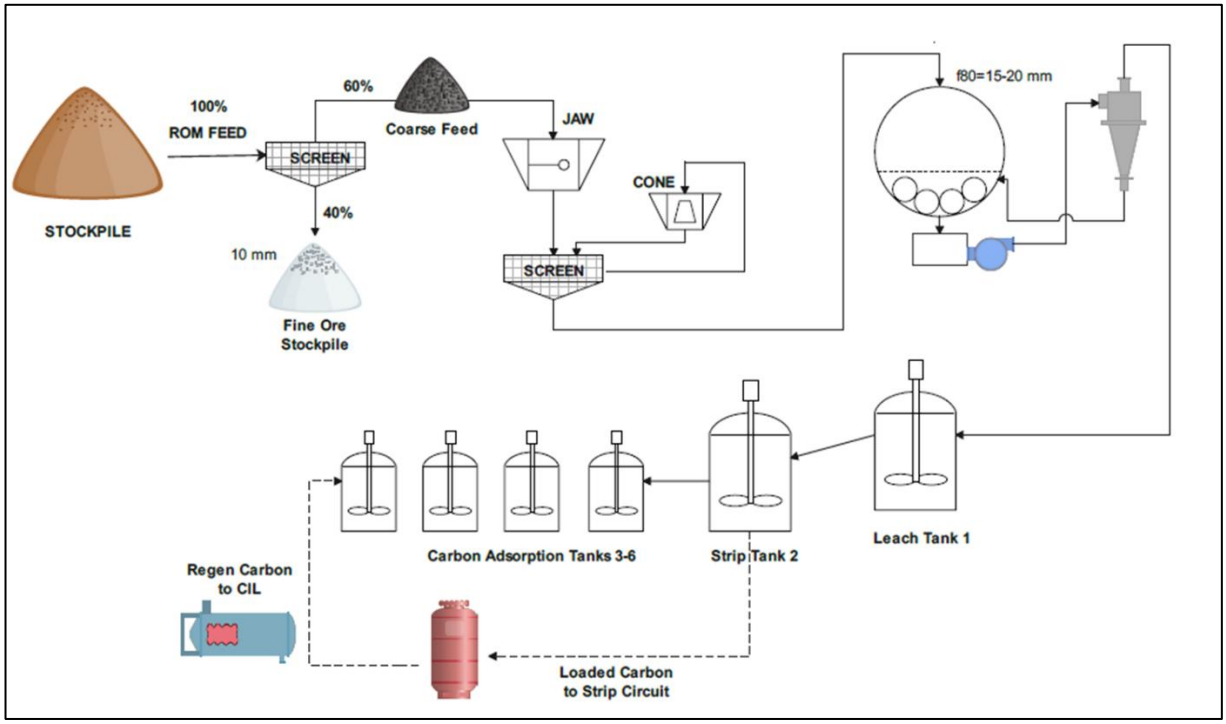

Figure 9: Existing Plant Flowsheet

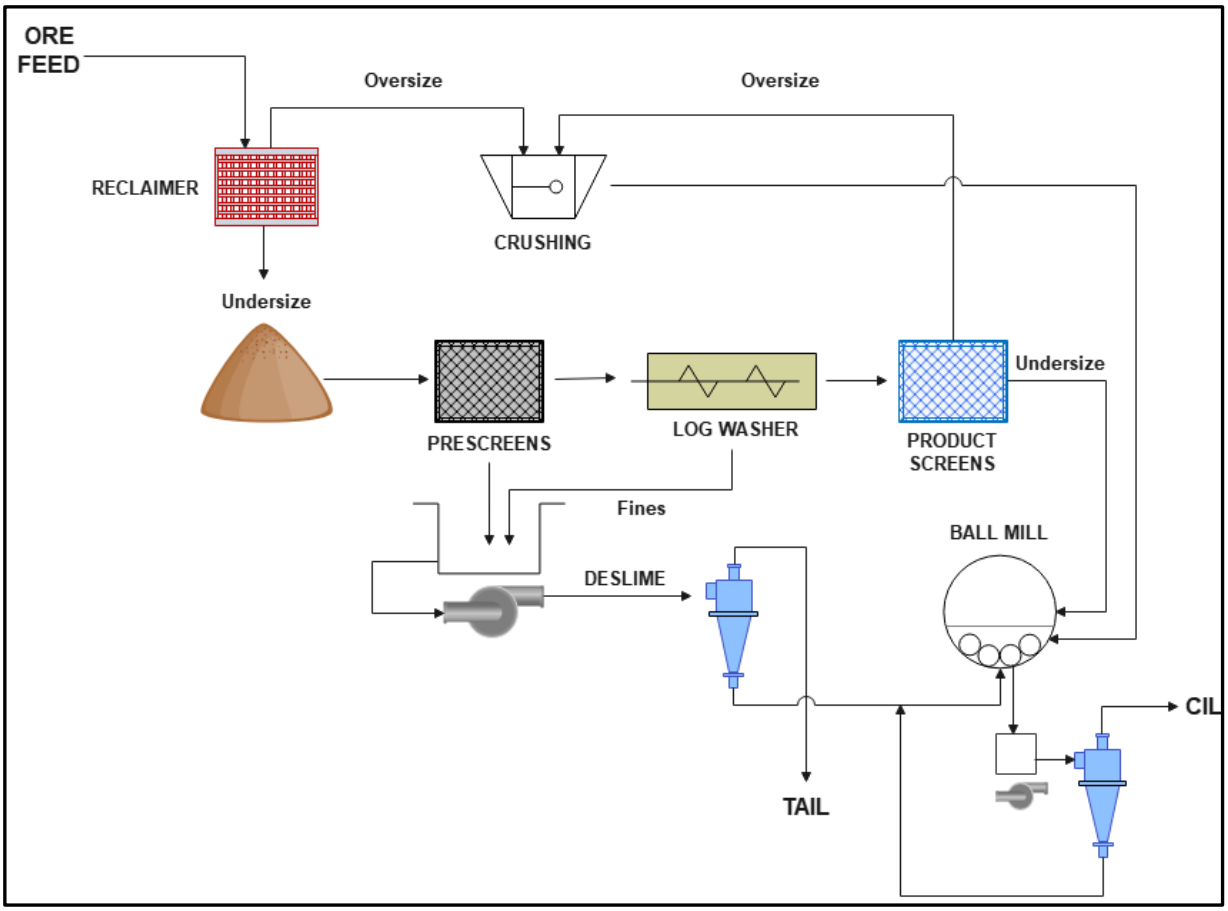

Figure 10: Wash/Scrubber (deslime) Circuit upgrade

Environment, Social, and Governance.

Wonawinta is situated on an existing mining lease, with approvals in place from prior operations. These approvals are still in place for all four pits. Approvals include:

- EPL (Number 20020) for Wonawinta the project which states processing of up to 2Mtpa and all the rest of the usual activities required for mining at the site
- Excerpts from the recently approved Rehabilitation Management Plan showing the approvals (Development Approvals's, WAL's, etc) in place and images showing all proposed pit development sitting within approved disturbance footprints, community consultation tables and leases.
- The NSW Resources Regulator, Manuka Mine forward program to November 2025.

In essence nothing material needs to be done to modify any current approval to recommence mining as the original conditions which considered four pits have not varied. Site is in good order from a resource regulator perspective with nothing outstanding from that department from their past site visits. No native title agreements exist or are required on the site as it was previously a soldier settlement block after the war. The AHIP was granted in January 2012. It remains in place.

Prior to restart of operations, minor approvals will need to be applied for to include:

- DA for camp modifications likely required during first 12 months of operations.
- Dam Safety approval mods for the next TSF lift.
- Road intersection improvements for the main road to site.

Due to the previous operating history, the project location and ownership, and existing approvals it is not anticipated that there will be any issues with ESG approvals for recommencement of operations.

Tailings Storage Facility

The current TSF capacity is expected to hold approximately 700,000 tonnes of processed ore, about 12 months production. A capital allowance has been made for a tailings dam lift in accordance with the approved design. The proposed lift would provide enough capacity to house tailings produced from the current mine plan.

Capital Cost Estimates

Table 5: Capital Cost Estimates

Plant Restart	A$M	Plant Upgrade	A$M
Elution Upgrade	0.34	Thicker - Tails	**1.00**
Mill Refurbishment	0.17	Deslime Circuit	1.10
Lab Upgrade	0.06	CIL Tanks	0.76
TSF List	1.65	Camp Expansion	0.69
Boiler	0.28	Labour	0.25
Labour	0.35	Contingency	0.40
Piping Upgrade	0.10		
Sewerage Upgrade	0.10		
Camp RO	0.12		
Contingency	0.47		
Sub-Total	**3.64**	**Sub-Total**	**4.20**
Pre-Strip	12.40	-	-
Total	**16.04**	**Total**	**4.20**

Project Execution

From the point a decision is made to restart Wonawinta there will be circa 3 months of planning, followed by a period of 3-4 months of pre-strip mining. This results in a ~6 month restart period prior to the generation of initial revenues.

Prerequisites to a decision to mine will include:

- Mt Boppy Gold Mine is in steady state production.
- Contractors and service providers will have been refreshed
- The Project cashflow model is updated and the mine schedule optimised
- Silver hedging strategy, if required, will is determined.

Economic Evaluation

Revenue Assumption

The silver price for the purpose of economics modelling has been applied based on the current silver forward curve and assuming a January 2025 decision to commence the restart of mining and capital expenditure.

Silver royalties on produced metals are payable to the New South Wales government annually at 4%. Royalties are calculated on gross revenue less allowable deductions where allowable deductions are confined to direct costs incurred in upgrading the mineral, after the first stockpile, and bringing it to market A rate of 2.4% has been applied to account for allowable deductions including transport and refining.

Opex

Total all in mining costs have been calculated as A$11.97 per BCM for free dig clay, and A$16.42 per BCM for blasted limestone / fresh rock. Costs were carried through the mining schedule as a variable rate based on material type and blasting requirements.

Total ore processing costs have been calculated as A$22.33 per tonne for oxide clay, and A$36.82 per tonne for fresh limestone. All in processing cost per tonne was also carried through the model and applied as an average for the month the material was processed.

Administration costs of A$431,684 per month have been added as a fixed cost. These have been calculated based on expected manning levels and current costs for the Mt Boppy workforce, and so are well understood. A capital expenditure budget is outlined in Table 5. Additionally, a $35,000/mth allowance has been made for sustaining capital.

Capex

Upfront Capital costs include A$12.4M in pre-processing mining costs and a A$3.7M allowance for the startup of mill operations. A$4.2M for the addition of a deslime circuit for high clay ores has been budgeted at end of year 1.

Cashflows

Based on the assumptions and costs outlined above, the project delivers a A$100M operating cash flow at an annualised EBITDA of A$24M per annum. The pre-tax Project NPV using a 10% discount rate is equal to A$56.9M

Sensitivities

The project is sensitive to the price of silver, with a +/- 10% change in the silver price assumptions delivering a +/-$25M in NPV. It is therefore likely that some form of hedging will be required to protect against downward movements in silver price.

A +/-10% change in Operating Costs results in -/+ A$9M change in NPV.

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Quarterly Physical and Cash Flow Summary

Item	Unit	Total	Pre-Production		Year 1				Year 2				Year 3				Year 4				Year 5			
Waste Tonnes	kt	11,868	481	1,519	896	573	887	321	609	650	989	790	385	521	665	716	1,371	493	-	-	-	-	-	-
Ore Mined	kt	4,837	-	34	406	463	242	637	226	132	285	510	491	344	115	286	197	469	-	-	-	-	-	-
Mined Grade	g/t	54	-	39	52	70	51	50	62	44	56	43	51	54	45	56	47	62	-	-	-	-	-	-
Ore Processed	kt	4,837	-	-	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	37	-	-	-
Recovered Grade	g/t	38	-	-	39	47	38	44	31	54	43	30	40	31	39	32	25	44	35	30	30	-	-	-
Dore Production	koz	5,845	-	-	374	455	368	420	297	518	416	289	386	303	379	313	237	426	339	289	36	-	-	-
Silver Price	US$/oz		-	-	34.6	35.0	35.4	35.8	36.2	36.3	36.6	36.7	36.8	37.0	37.1	37.2	37.3	37.4	37.6	37.6	37.6	-	-	-
Exchange Rate	A$:US$		0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
Gross Revenue	**A$M**	**323.1**	-	-	19.6	24.1	19.7	22.8	16.3	28.5	23.1	16.1	21.6	17.0	21.3	17.6	13.4	24.1	19.3	16.5	2.0	-	-	-
Selling Costs	A$M	(10.2)	-	-	(0.6)	(0.8)	(0.6)	(0.7)	(0.5)	(0.9)	(0.7)	(0.5)	(0.7)	(0.5)	(0.7)	(0.6)	(0.4)	(0.8)	(0.6)	(0.5)	(0.1)	-	-	-
Mining	A$M	(91.2)	-	-	(7.8)	(6.4)	(7.2)	(6.3)	(5.2)	(4.8)	(8.0)	(8.1)	(5.6)	(5.5)	(4.7)	(6.4)	(9.4)	(5.8)	-	-	-	-	-	-
Processing	A$M	(101.2)	-	-	(6.8)	(7.1)	(8.3)	(9.5)	(5.8)	(7.6)	(7.8)	(7.3)	(8.8)	(6.3)	(4.5)	(7.5)	(6.7)	(7.2)	-	-	-	-	-	-
G&A	A$M	(20.1)	-	(0.4)	(1.3)	(1.3)	(1.3)	(1.3)	(1.3)	(1.3)	(1.3)	(1.3)	(1.3)	(1.3)	(1.3)	(1.3)	(1.3)	(1.3)	(0.6)	(0.6)	(0.2)	-	-	-
Operating Cashflow	**A$M**	**100.4**	**-**	**(0.4)**	**3.1**	**8.6**	**2.3**	**5.0**	**3.4**	**13.9**	**5.2**	**(1.1)**	**5.2**	**3.4**	**10.2**	**1.9**	**(4.4)**	**9.0**	**18.1**	**15.3**	**1.8**	**-**	**-**	**-**
Pre-Strip Mining	A$M	(12.4)	(3.1)	(9.3)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Plant Restart Capex	A$M	(3.7)	(0.7)	(3.0)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Plant Upgrade	A$M	(4.2)	-	-	-	-	(2.1)	(2.1)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sustaining Capital	A$M	(1.7)	-	-	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.0)	-	-	-
Net Project Cashflow	**A$M**	**78.4**	**(3.8)**	**(12.7)**	**3.0**	**8.5**	**0.1**	**2.8**	**3.3**	**13.8**	**5.1**	**(1.2)**	**5.1**	**3.3**	**10.1**	**1.8**	**(4.5)**	**8.9**	**18.0**	**15.2**	**1.7**	**-**	**-**	**-**
NPV_{10}	**A$M**	**56.9**																						

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This announcement has been approved for release by the Board of Manuka Resources Limited.

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About Manuka Resources Limited

Manuka Resources Limited (ASX: MKR) is an Australian mining and exploration company with key gold and silver assets located in the Cobar Basin (NSW), and offshore vanadium and titanium bearing iron sands in the South Taranaki Bight of New Zealand.

The Mt Boppy Gold Mine (Cobar Basin, NSW)

The Mt Boppy gold mine is located 43 km east of Cobar, in the Central West region of New South Wales. A resource update was released on ASX on 16 April 2024.

The Company has to date processed its stockpiles and gold mineralised waste product through its Wonawinta plant. Manuka are currently pursuing a strategy of establishing of a fit-for-purpose, on-site crush-screen-mill-float facility to enhance the economics of the Mt. Boppy Mine and the value of near-mine prospects. The Mt Boppy site includes a 48-person mine camp and is fully permitted for the proposed processing plant and on-site production.

The Wonawinta Silver Mine (Cobar Basin, NSW)

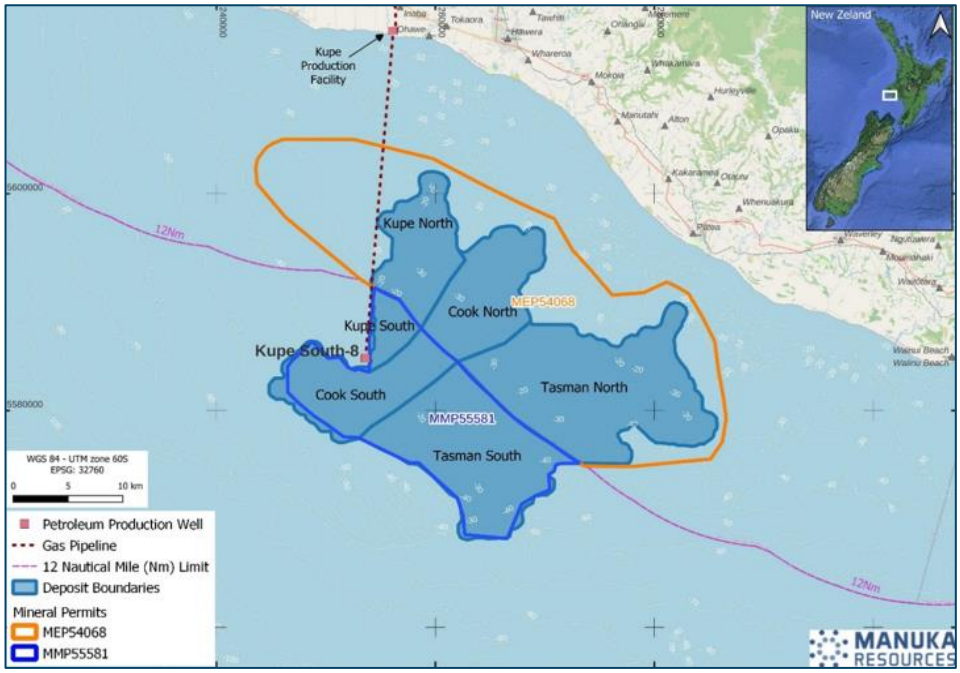
Previously Australia's largest primary silver producer, Wonawinta produced approximately 3 million ounces of silver during 2012-2013, and an additional 500,000oz of silver in 2022. A resource update was released on 1 April 2021

The Company is reviewing the potential of recommencing operations at Wonawinta, taking advantage of the strengthening silver price environment.

The Taranaki VTM Project (South Taranaki Bight, New Zealand)

Manuka is the 100% owner of the Taranaki VTM (vanadium titanomagnetite) Iron Sands Project**.** The Taranaki VTM Project resource was released on ASX on 1 March 2023.

The Project is located 22 km to 36 km offshore in New Zealand's EEZ, or Exclusive Economic Zone, outside the 12 nautical limit from the shoreline, in waters ranging between 20 to 50 metres depth and has a granted mining permit, MP55581, permitting production of 5Mtpa. On granting of final government approvals to operate the Company will complete its Bankable Feasibility Study on the Project. The Project is anticipated to sit in the lowest quartile of the iron ore production cost curve.



Location of Taranaki VTM Project.

Cautionary Statements

*The Ore Reserve and the associated Implementation Plan discussed herein have been undertaken to explore the technical and economic feasibility of restarting open pit mining and processing operations at the Company's 100% owned Wonawinta Silver Mine that is currently on active care & maintenance (**the Project**) and have been prepared to a Feasibility level.*

The Production Target underpinning financial forecasts included in the Implementation comprises 17% Proven Reserves, 83% Probable Reserves. No Resources (other than those converted to Reserves were included in the Production Target or financial forecasts. The estimated Ore Reserves and Mineral Resource underpinning the Production Target have been prepared by a Competent Person in accordance with the requirements in the JORC Code. The stated Production Target is based on the Company's current expectations of future results or events and should not be solely relied upon by investors when making investing decisions.

The economic outcomes associated with the Implementation Plan are based on certain assumptions made for commodity prices and exchange rates and other economic variables, which are not within the Company's control and subject to change from time to time. Changes in such assumptions may have a material impact on economic outcomes.

To achieve the range of outcomes indicated in the Implementation Plan, addition funding will be required. Investors should note that there is no certainty that the Company may be able to raise the amount of funding when needed and/or reach a Final Investment Decision. It is also possible that such funding may only be available on terms that may be dilutive to, or otherwise affect the value of Manuka's existing shares. It is also possible that Manuka could pursue other 'value realisation' strategies such as a sale or partial sale of the Company's share of the Project.

This announcement contains forward-looking statements. Manuka has concluded it has a reasonable basis for providing the forward-looking statements included in this announcement and believes it has a reasonable basis to expect it will be able to fund the development of the Project. However, several factors could cause actual results, or expectations to differ materially from the results expressed or implied in the forward-looking statements. Given the uncertainties involved, investors should not make any investment decisions based solely on the results of the Ore Reserve of Implementation Plan.

Competent Persons Statement

I, Mr. John Millbank, confirm that I am the Competent Person for the Report and:

- I have read and understood the requirements of the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code, 2012 Edition).
- I am a Competent Person as defined by the JORC Code 2012 Edition, having five years' experience that is relevant to the style of mineralisation and type of deposit described in the Report, and to the activity for which I am accepting responsibility.
- I am a Member of The Australasian Institute of Mining and Metallurgy.
- I have reviewed the Report to which this Consent Statement applies.

I am a full-time employee of Proactive Mining Solutions Pty Ltd and have been engaged by Manuka Resources to prepare the documentation for the Wonawinta resource on which the Report is based, for the period ended 30th August 2024. I have disclosed to the reporting company the full nature of the relationship between myself and the company, including any issue that could be perceived by investors as a conflict of interest. I verify that the Report is based on and fairly and accurately reflects in the form and context in which it appears.

The information in this report that relates to Mineral Resources is based on information compiled by Mr Ian Taylor, who is a Certified Professional by The Australasian Institute of Mining and Metallurgy and is employed by Mining Associates Pty Ltd. Mr Taylor has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Taylor consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Compliance Statements

Information in this report that relates to Exploration Results is extracted from the announcement titled 'Wonawinta Deeps' Proof-of-Concept Drilling Successful – Aggressive Follow Up Planned" dated 1 June 2021 and available to view on the Company's website. The Company is not aware of any new information or data that materially affects the information and results included in the announcement.

Information in this report that relates to Mineral Resources is extracted from the announcement titled '43% Increase in Measured & Indicated Resources at Wonawinta Silver Project" dated 1 Apral 2021 and available to view on the Company's website. The Company is not aware of any new information or data that materially affects the information used to compile the 2021 Mineral Resource and all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed.

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Appendix 1: JORC TABLE 1 – SECTION 4

Section 4 Estimation and Reporting of Ore Reserves

(Criteria listed in section 1 and where relevant in sections 2 and 3 also apply to this section)

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	• *Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.*	The Mineral Resource estimate that this reserve is based upon has been compiled by Mr Ian Taylor of Mining Associates Pty Ltd. The Mineral Resource estimates have been completed using block models developed by Mr Taylor for the Wonawinta project, using data supplied by Manuka Resources Ltd (Manuka). The models produced incorporated all mineralisation in the Wonawinta deposit that has been generated to February 2021. A 20g/t cut off grade has been applied to the resource. The following table comprises the Mineral Resources used within this study, and has been taken from the ASX media release dated 1 April 2021, *Manuka - Wonawinta Silver Project Mineral Resource Update* This release is publicly available on the Manuka controlled web site. https://www.manukaresources.com.au/site/pdf/a7fa1801-283e-4e31-8ba2-cc6e2fb5430e/Manuka-Wonawinta-Silver-Project-Mineral-Resource-Update.pdf

Resource Category	Material (Mt)	Ag (g/t)	Pb (%)	Ag Moz	Pb kt
Measured	1.1	47.3	0.69	1.65	7.5
Indicated	12.3	45.5	0.83	18.04	102.8
Inferred	24.9	39.0	0.39	31.25	96.9
Total	38.3	41.3	0.54	50.94	207.2
Stockpiles (Indicated)	0.52	70.0	-	1.16	-

Criteria	JORC Code explanation	Commentary
	• *Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.*	The Mineral Resources reported are inclusive of the Ore Reserves.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* *(If no site visits have been undertaken indicate why this is the case.)*	The Competent Person for the Ore Reserves, Mr. John Millbank is an independent consultant engaged by Manuka Resources. A site visit to the Wonawinta sites for the Ore Reserves calculations was completed on the 8th and 9th of June 2021.Inspections of the mining areas, process plant and drill cores were carried out.
Study status	• *The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.* *(The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.)*	The Reserves contained in this report have been prepared to a Feasibility level. Costs and financial estimates are current as of May 2024. The Wonawinta Silver Mine is a previously mined and operational open pit silver mine and Carbon in Pulp processing plant. The processing plant is currently on care and maintenance operations after being used for treatment of Mount Boppy gold ore. Previous open cut mining operations at Wonawinta were closed in 2014. Previous open pits Manuka and Boundary had been completed to economic limits at the time. The processing plant utilises crushing, grinding and CIP recovery circuit. The plant has a designated throughput of 1.2 Mtpa. The plant is considered operational in its present state, however some minor capital upgrades will be required to treat Wonawinta silver ores. This Reserves Statement is based upon well understood costs and physicals from prior and continuing operations at this mature processing operation. Cost modelling for mining operations has been completed to a Feasibility level. Current contract prices for equipment hire have been applied to cost models and these have been used to establish current unit mining costs. Current contract or quoted prices have been used for consumables. A drill and blast contractor has supplied a quote for completion of works at a nominated powder factor. Established operating costs have been used for processing and administration oncosts. Processing modifying factors are well understood considering the history of the operation and previous open pit mining results. Processing reconciliations have been referenced from prior records to determine overall metallurgical recoveries, along with further metallurgical testing by consultants. Capital costs have been completed using engineering estimates and are considered to be within feasibility level.
Cut-off parameters	• *The basis of the cut-off grade(s) or quality parameters applied.*	A variable cut off grade has been calculated within the block model based upon expected recovery factors for each block. The cut off grade has been calculated for each block based upon the overall cost of mining ore for the block, and the expected recovery. A fixed realised silver price has

Criteria	JORC Code explanation	Commentary
		been used. The cut off grade of the block has then been subtracted from the actual grade to give a margin. A positive value indicates the material is above cut. Cut off grades calculated are margin of 1g/t (positive) for break even processing grade, and a margin of 15g/t for mining and processing grade has been allowed. Material between these grade margins is stockpiled for processing once mining is complete.
Mining factors or assumptions	• *The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).*	Open cut truck excavator mining, with free dig material in the upper oxide zones and drill and blast in the lower oxide and fresh materials.
	• *The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.*	Equipment size and methods selected typical of moderate scale open pit precious metals mining. 120 tonne class excavators for mining of the ore and waste zones. 90 to 100 tonne class mechanical drive haul trucks. Single lane in pit ramps at 15 m wide and 1:10 gradient for the majority of the pits. Single lane ramps have been designed due to the short life and shallow nature of the pits. Cutbacks to the existing pits will utilise prior footwall ramp accesses where possible. Mining is on five-metre-high benches and is mined in two, two and a half metre high flitches, to reduce mining dilution. These flitch heights are typical for precious metal mining and match the size of mining equipment selected.
	• *The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc), grade control and pre-production drilling.*	Geotechnical parameters have been advised by specialised geotechnical consultants and reflect current geometry. The existing pit walls have limited failure zones despite being in place for over ten years. The pits are generally dry and as such are not supported by water pressure inside the pit after completion of mining. The pits are of shallow depth, with most being less than 50 metres overall. The shallow dipping nature of the ore zone means only the hanging wall angle is at design.
	• *The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).*	Mine Optimisation was completed using Whittle software. Silver price used was $47.90 per ounce before royalty and selling costs. Mining and Processing costs were based on recent processing operations and current contract rates for mining. All in ore costs range from $22.33 for oxide clay, to $36.82 for fresh limestone. All in waste mining costs have been estimated as between $11.97 per cubic metre for free dig clay, to $16.42 for blasted limestone. Administration costs were added as fixed costs per month for optimisation purposes. Due to the short life, capital costs were excluded and added back in during financial analysis of the proposed mining

Criteria	JORC Code explanation	Commentary
		schedule. Mine optimisation was run excluding any inferred portion of the resource. Over 100 cases have been run to test sensitivity to costs, modifying factors and silver price Application of conservative values for modifying factors has been conducted to test limits of the project. The project is sensitive to silver price and other revenue generating modifying factors such as recovery. The project is robust to costs within 15%. and for silver prices above those used in this study.
	• *The mining dilution factors used.*	A blanket factor of 110% for ore dilution, was used in optimisation works. During mine scheduling, a factor of 110% was applied to physical tonnes.
	• *The mining recovery factors used.*	A blanket factor of 95% for ore loss, was used in optimisation works. During mine scheduling, a factor of 91% was applied to physical grade, to maintain contained ounces.
	• *Any minimum mining widths used.*	Pit Design has been limited to a minimum working width of 20 metres.
	• *The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.*	Inferred resource category material has been excluded from all mine planning, at optimisation, design and scheduling level.
	• *The infrastructure requirements of the selected mining methods.*	The project has been previously operated by others. Infrastructure is generally in place. The processing plant is considered operational within its current state. As part of the Mining operations, a site mining office and muster room will be installed, along with a required heavy machinery workshop, washdown bay, fuel go bay and stores area (for equipment parts, etc). General drainage of the mining office and workshop areas will be designed with oil separators, oil and grease waste disposal pods and general waste disposal bins. Fuel will be supplied through a transtank fuel farm, while on site accommodation and on site messing will be undertaken in the current facilities. (Currently in an upgrade from a 70 to approx. 120 room camp)
Metallurgical factors or assumptions	• *The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.*	The existing process plant uses a CIP leach process with a Merril Crowe precipitation circuit. The plant has Silver production history as follows. **Units** | **Project to date (March 2015 to 30**

Criteria	JORC Code explanation	Commentary

		Sept 2015)
Total material mined	t	1,637,901
Silver ore mined	t	613,719
Mined grade	g/t Ag	83.8
Ore milled	t	350,312
Milled grade	g/t Ag	96.1
Recovery	%	69.6
Silver produced	oz Ag	753,634
Silver poured	oz Ag	740,134
Silver sold	oz Ag	730,141
Silver revenue	A$M	15.5
C1 Cash Costs	A$/oz	15.92
Dore contained Ag	oz	0
Ag stock in circuit	oz	13,501
Ore for immediate milling	t	263,407

- *Whether the metallurgical process is well-tested technology or novel in nature.*

The technology is well tested and has been successfully operated by prior owners. Modifications to the process plant over time include the addition of the conventional grinding circuit. The plant has also been used for gold recovery by Manuka. Merril Crowe process is commonly used for precipitation.

- *The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.*

Test work has recently been completed on ROM stockpile material by ALS. This material was held on pile from previous operations and is considered somewhat representative. The test work was completed to confirm overall met recovery using the fine grinding characteristics of the ball mill. Installation of the ball mill was after previous operations had ceased, and limited tonnes have been treated using this. The test work confirmed the overall recovery.

Additional test work has been completed by AMML to determine the need for a desliming circuit. Results of the test work has shown this is necessary for areas of

Criteria	JORC Code explanation	Commentary
		the deposit where ultrafine clays (-38microns) are present. Overall metallurgical recovered grade from the mining schedule is 69.9% of the mined contained grade. Historical production has met recovery at 69.6%.
	• *Any assumptions or allowances made for deleterious elements.*	Site personnel have also corroborated the presence of sulphur and overall silver recovery. Accordingly silver recovery has been modified by sulphur grade within the resource model.
	• *The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the ore body as a whole.*	The following observations and assumptions are based on operational plant data over the period April 2022 - January 2023 and are supported by laboratory test work findings. 1. Bimodal particle size distribution featuring fine weathered aluminosilicate clays (-38 µm) and coarser limestone and quartz sediments. 2. Subeconomic Ag grades in -38 µm fractions coupled with low recoveries. 3. Amenability of clays to separation in dewatering/desliming hydro cyclones. 4. Deslime cyclone feed p80 of 3-4 mm. 5. An estimated 50:50 mass split in the Deslime cyclones, contingent on the proportions of fine clay and coarser sediments in the cyclone feed. 6. Approximately 5-10% Deslime cyclone overflow (COF) mass >38 µm and 20-30% Deslime cyclone underflow (CUF) mass <38 µm, contingent on the proportions of fine clay and coarser sediments in the cyclone feed. 7. An estimated 25:75 Ag split in the Deslime cyclones, such that 25% Ag in the scrubbed clay-rich stream is sent to tails via deslime COF and 75% is processed via deslime CUF. 8. Clays - 65% overall Ag CIL recovery. 9. Limestones – 80% overall Ag CIL recovery
	• *For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?*	No minerals defined by a specification for this study.
Environmental	• *The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.*	Approval was last granted for mining operations in 2015, and these are still valid. An amendment to this will most likely need to be submitted before operations can recommence, outlining the latest plan for operations. Waste rock will include PAF material. Classification will be completed based on Sulphur grades within the resource model. A PAF cell will need to be designed for each waste rock dump. Details of which will need to be included in the amendment. The current TSF capacity is expected to hold approximately 700,000 tonnes of processed ore, about 12 months production. A current survey of the TSF is required

Criteria	JORC Code explanation	Commentary
		to confirm this number and should be completed as part of the scope currently in front of AECOM to sign off on the Stage 2 lift. Another upstream or centre lift design will need to be progressed in the very near future.
Infrastructure	• *The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.*	It is anticipated the process plant and surrounding infrastructure is operationally capable. Upgrades within the first year will include additional camp rooms, a TSF lift, and addition of a deslime plant. As part of the Mining operations, a site Mining office and muster room will be installed, along with a required heavy machinery workshop, washdown bay, fuel go bay and stores area (for equipment parts, etc). General drainage of the mining office and workshop areas will be designed with oil separators, oil and grease waste disposal pods and general waste disposal bins. Fuel will be supplied through a trans tank fuel farm, while on site accommodation and on site messing will be undertaken in the current facilities. (Currently in an upgrade from a 70 to approx. 120 room camp) Explosives as required will be supplied by contractor ex Cobar.
Costs	• *The derivation of, or assumptions made, regarding projected capital costs in the study.*	Capital costs have been estimated from a combination of engineering quotes, known prices, existing y costs and estimates based on recent projects executed within the industry. The economic analysis for pit optimisation is based on cash costs excluding capital. Capital and administration costs are then added back into financial analysis during mine scheduling.
	• *The methodology used to estimate operating costs.*	Costs are current as of May 2024. Operating costs – Mining and Process Current wage rates. Projected fuel price Current contract rates for equipment hire, drilling contractor and explosive supplier. Current explosives costs and estimates of requirements for blast hole drilling, blasting, excavation and processing based on the varying rock types. Current work rates and OEM specs for excavator productivity. Allocated truck hours based on haul distant and estimated cycle times. Assumed amount for overhaul to ROM locations based on these inputs. Current Prices for Processing Consumables Current prices for power and estimated usage Current onsite administration cost and a portion of head office costs.

Criteria	JORC Code explanation	Commentary
	• *Allowances made for the content of deleterious elements.*	Allowances for cost have been included via the form of modified metallurgical recovery.
	• *The source of exchange rates used in the study.*	All costs and prices have been based in Australian dollars. Where a USD conversion is required, a factor of 0.67 has been applied.
	• *Derivation of transportation charges.*	Silver doré bars will be produced on site. Transport costs are included in the charges supplied by the refining company.
	• *The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.*	Processing operating costs outlined above.
	• *The allowances made for royalties' payable, both Government and private.*	Royalties payable to the NSW State Government have been considered. Applied to 4% of revenue minus processing and part admin costs - net 2.4% of revenue assumed. There are no other royalties due.
Revenue factors	• *The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.*	Assume 100% ore mining recovery of the regularised Model. Selling costs and Royalties included in ore costs. No deleterious metals present that incur smelter penalties beyond the anticipated charges. A base silver price of AUD$ 47.80 per ounce excluding royalties in this Ore Reserve assessment. Exchange rates, royalties and transport charges dealt with above.
	• *The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.*	The silver price is based within a range of spot price from the last 6 months, as published by ABC Bullion. Spot price has ranged from AUD$35.75 to $48.72 per ounce. Current futures contracts are available for US$31.44 sell price (AUD $46.92) for delivery in 18 months.
Market assessment	• *The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.*	There is a transparent quoted derivative market for the sale of silver. The silver doré will be sent to a local bullion refiner at commercial rates for refining. The silver will be sold on either the spot market, or a hedging facility with forward sales contracts will be put in place, to secure a floor in silver prices.
	• *A customer and competitor analysis along with the identification of likely market windows for the product.*	N/A There is a transparent quoted derivative market for the sale of silver
	• *Price and volume forecasts and the basis for these forecasts.*	N/A There is a transparent quoted derivative market for the sale of silver
	• *For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.*	N/A – not assessing industrial minerals

Criteria	JORC Code explanation	Commentary
Economic	• *The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.*	The operation is expected to operate at a processing rate of 1.2 MTPA. The preliminary analysis carried out did not estimate the NPV, but rather simple cash flow based on a variety of possible silver prices. For all deposits, the optimal pit shell was chosen as that with the highest discounted cash flow from the Whittle Pit Optimisation. The pits were designed from the chosen shell. Pit designs where then back calculated for undiscounted return using the whittle input costs to ensure profitability within limits. Scheduling of mine physicals was then completed. Capital costs were allocated evenly over the 12 months preceding mine production. Cash flow was determined using the whittle inputs and associated mining costs per period. A discount rate was applied and NPV calculated from the simple cash flows, excluding tax. The project is cash positive for silver prices above AUD $42 per ounce. At the assumed silver price, a payback period on capital is estimated to occur within 18months.
	• *NPV ranges and sensitivity to variations in the significant assumptions and inputs.*	Sensitivity analysis was included in the Whittle optimisations. Tested inputs included pit wall angle, metallurgical recovery, gold price, block model cell size (dilution and ore loss) and operating costs. Variations of up to 10 % were completed for these inputs where practicable and positive cash flows were returned for cases with silver price at or higher than AUD $47.80 per ounce before royalty.
Social	• *The status of agreements with key stakeholders and matters leading to social licence to operate.*	• The Wonawinta site is located on flat grazing land wholly owned by Manuka Resources. • The land was previously sheep grazing land that was gifted as a soldier settlement block. • All key stakeholder agreements are in place. The Company has close working relationships with the local communities. • There is no anticipated claims through native title or heritage requirements.
Other	• *To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:*	
	○ *Any identified material naturally occurring risks.*	No naturally occurring risks have been identified for the site.
	○ *The status of material legal agreements and marketing arrangements.*	Produced silver doré will be sold into the spot or futures market.
	○ *The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be*	The current operation is situated on a granted Mining Lease which expires in 2032. Approvals are in place from prior operations. These approvals are still in place for

Criteria	JORC Code explanation	Commentary
	received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.	all four pits. Approvals include: • EPL (Number 20020) for Wonawinta the project which states processing of up to 2Mtpa and all the rest of the usual activities required for mining at the site • Excerpts from the recently approved Rehabilitation Management Plan showing the approvals (DA's, WAL's, etc) in place and images showing all proposed pit development sitting within approved disturbance footprints, community consultation tables and leases. • The NSW Resources Regulator, Manuka Mine forward program to Nov 2025. In essence nothing material needs to be done to modify any current approval to recommence mining as the original conditions which considered four pits have not varied. Site is in good order from a resource regulator perspective with nothing outstanding from that department from their past site visits. No native title on the site as it was previously a soldier settlement block after the war. The AHIP was granted in January 2012. It remains in place. Prior to restart of operations, minor approvals will need to be applied for to include, • DA for camp modifications. • Dam Safety approval mods for the next TSF lift. • Road intersection improvements for the main road to site. Due to the previous operating history, the project location and ownership, and existing approvals it is not anticipated that there will be any issues with ESG approvals for recommencement of operations.
Classification	• *The basis for the classification of the Ore Reserves into varying confidence categories.*	The classification of the Wonawinta Silver Project:2024 Silver Ore Reserve Statement has been carried out in accordance with the recommendations of the JORC code 2012.
	• *Whether the result appropriately reflects the Competent Person's view of the deposit.*	Yes. The Wonawinta silver deposit is robust at listed silver price and above based on costs current at May 2024.
	• *The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).*	No *Probable Ore Reserves* are derived from Measured Mineral Resources. All Measured Mineral Resources have been converted to Proved Ore Reserves.
Audits or reviews	• *The results of any audits or reviews of Ore Reserve estimates.*	The Ore Reserves estimates have been completed by Competent Persons external to Manuka Resources. No further review has been conducted.
Discussion of relative accuracy/	• *Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of*	The resource block models from which the mining reserve has been derived was based on a geostatistical estimation completed by Mr Ian Taylor who is satisfied with the resource categories quoted. Within the reserve estimation process the effects of

Criteria	JORC Code explanation	Commentary
confidence	*statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.* ○ *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* ○ *Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.* ○ *It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	included dilution have been accounted for. No statistical quantification of confidence limits has been generated. Estimates are global by deposit. Through Whittle optimisation, the Ore Reserve is most sensitive to unfavourable changes in factors that influence revenue. These include mining dilution and ore loss, processing recovery, and silver price. Processing recovery has been based upon included sulphur grades and metallurgical testwork, benchmarked to previous production. Mining dilution and ore loss have been tested to within industry benchmarks for global values. Silver price is reported daily.

ASX Announcement
29 October 2024

ASX: MKR

CLARIFICATIONS- JORC TABLE 1

SECTIONS 1 TO 3

SECTION 1. Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	• 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. • Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. • Aspects of the determination of mineralisation that are Material to the Public Report.	• Reverse circulation (RC), diamond coring (core) and aircore (AC) drilling undertaken by Cobar Consolidated Resources Limited (CCR) was used to obtain over 76% of the samples and Manuka Resources Ltd (MKR) have obtained 15% of the samples used in the current resource estimate. • Grade control RC drilling by Black Oak Minerals (BOK) in 2015 is also included. The remaining samples were sourced from diamond and RC undertaken by previous explorers Geopeko, CBH, Savage, Pasminco and Triako. The drilling database within the resource area comprises 2163 RC and 13 pre-collared core holes and 49 diamond core holes. Also, in the database (not used in the resource estimate) are 920 rotary air blast holes, 148 Air Core holes and 10,472 blast holes. • RC and AC samples were predominantly collected over one metre intervals and subsampled utilising a rig-mounted cyclone/ cone splitter to provide a 1.5kg to 3.0kg assay sample. Diamond core (NQ, HQ) was halved with a diamond saw, PQ core was ¼ cored. In highly weathered material a hammer and chisel were used to provide representative sub-samples. Aircore samples were sub-sampled every metre using a two-tier riffle splitter. MRK drill core was photographed in the splits before placement into core trays. • Measures taken to ensure the sample representivity included routine monitoring of sample recovery and RC field duplicates. Assay quality control measures included duplicates, blanks and certified reference standards. In addition, the laboratories undertook their own duplicate sampling as part of their own internal QA processes. The available QAQC data demonstrate that the sampling and assaying are of appropriate quality for use in the current estimates. • MKR used portable XRF readings to determine intervals to be sent for analysis, blank holes in the database showed no silver in the pXRF readings.
Drilling techniques	• Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg 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).	• All RC drilling used face sampling bits. • Core holes were drilled PQ triple tube (83mm core diameter), HQ (63mm core diameter) triple tube was trailed. The diamond holes were surveyed using a multi-shot camera and core orientations undertaken using an Ace orientation tool. The core was photographed in detail, and the core remaining after sampling was used in its entirety for metallurgical test work.
Drill sample recovery	• Method of recording and assessing core and chip sample recoveries and results assessed. • Measures taken to maximise sample recovery and ensure representative nature of the samples. 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.	• RC drilling was closely monitored by field geologists and used face-sampling bits, and generally had sufficient air capacity to provide dry, high recovery samples. The RC drilling rigs usually had access to booster compressors. • For RC holes visual estimates were made of recovery and wetness. It is estimated that less than 2% of samples were damp or wet. • Diamond drilling core recovery was estimated from recovered core lengths and showed an average recovery of 89% within mineralised sections. • The available sample recovery data shows generally reasonable recoveries and no relationship between recovery and assay grade, and no indication of significant biases due to sample loss.
Logging	• Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and	• All RC and AC samples were logged for lithology, texture, grainsize, colour, alteration, regolith and wetness. In addition core holes were geotechnically logged and had density determinations undertaken. Logging of holes drilled by explorers prior to MKR was undertaken in a

Criteria	JORC Code explanation	Commentary
	metallurgical studies. • Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. The total length and percentage of the relevant intersections logged.	similar manner. MKR and CCR routinely photographed all diamond core and RC chip trays. • All the resource drilling has been qualitatively logged with appropriate detail, to support the current Mineral Resource estimates, and metallurgical and mining studies.
Sub-sampling techniques and sample preparation	• If core, whether cut or sawn and whether quarter, half or all core taken. • If non-core, whether riffled, tube sampled, rotary split, 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 sub-sampling stages to maximise representivity of samples. • Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling. Whether sample sizes are appropriate to the grain size of the material being sampled.	• RC hole logs were reviewed and the samples scanned with a field portable XRF analyser prior to the selection of mineralised or potentially mineralised intervals for laboratory analysis. Remaining samples were stored pending receipt of analytical results. The sampled intervals were extended if required. • Sub-sampling of RC holes was undertaken using a rig-mounted rotary or riffle splitter to provide a 1-3kg lab sample. Less than two percent of the samples were damp or wet. • Harder sections of PQ core were filleted (CCR) or ¼ cored (MKR) with a diamond saw. Clay sections of core were sampled with a hammer or chisel, or by filleting with an angle grinder. In all cases the sampled portion represented about 20% of the core or 2kg per linear metre. • All samples were sent to an external laboratory (mostly ALS Global - Orange) for preparation and analysis. Samples were dried, crushed and pulverised to get 85% passing a 75um sieve to provide a 0.5g sample for aqua regia digestion with an ICP-AES finish. • RC field duplicates undertaken on a 1:40 basis showed acceptable variation and repeatability. • Samples sizes are appropriate to the grain size of the silver mineralisation which is predominantly very fine.
Quality of assay data and laboratory tests	• The nature, quality and appropriateness of the assaying and laboratory procedures used and 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 (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.	• Samples from RC and diamond drilling were sent to ALS laboratories for preparation and analyses. No information from geophysical methods or hand held XRF devices are used in resource estimations, except to confirm holes are barren, as opposed to assays pending. • Aqua-regia analyses are considered to be a total extraction given the style of mineralisation. MKR's BOKs and CCR's samples were analysed by ALS Global, an accredited commercial laboratory in Orange, NSW. After oven drying, (and jaw crushing of core samples and RC samples with coarse material), the samples were pulverised to at least 85% passing 75 microns. Sub-samples were digested by aqua regia and analysed by ICP for silver, lead, zinc, iron, sulphur, manganese, calcium and magnesium. When results were above upper detection limits the analyses were repeated using a multi-acid digestion and ICP. Quality control methods included field duplicates, coarse blanks and certified standards. Three control samples were inserted for every 20 to 30 samples. The laboratories also maintain their own process of QA/QC utilising standards, repeats and duplicates. • QAQC procedures and results for MRK's drilling are available and were reviewed by MA. • QAQC procedures and results for pre-CCR and BOK drilling are not available, although QAQC samples are present in the assay databases. The pre-CCR/BOK drilling only informs a small proportion of the resources. • The quality control measures have established that the assaying is of appropriate precision and accuracy for the current estimates.
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	• Reported significant intersections were reviewed by geological staff onsite, and checked by senior geological management, including the Exploration/Geology Manager • Six diamond holes and two RC holes were drilled to twin earlier RC and aircore holes, with satisfactory results. • Geological logging data and sampling information is

Criteria	JORC Code explanation	Commentary
	metallurgical studies. • Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. The total length and percentage of the relevant intersections logged.	similar manner. MKR and CCR routinely photographed all diamond core and RC chip trays. • All the resource drilling has been qualitatively logged with appropriate detail, to support the current Mineral Resource estimates, and metallurgical and mining studies.
Sub-sampling techniques and sample preparation	• If core, whether cut or sawn and whether quarter, half or all core taken. • If non-core, whether riffled, tube sampled, rotary split, 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 sub-sampling stages to maximise representivity of samples. • Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling. Whether sample sizes are appropriate to the grain size of the material being sampled.	• RC hole logs were reviewed and the samples scanned with a field portable XRF analyser prior to the selection of mineralised or potentially mineralised intervals for laboratory analysis. Remaining samples were stored pending receipt of analytical results. The sampled intervals were extended if required. • Sub-sampling of RC holes was undertaken using a rig-mounted rotary or riffle splitter to provide a 1-3kg lab sample. Less than two percent of the samples were damp or wet. • Harder sections of PQ core were filleted (CCR) or ¼ cored (MKR) with a diamond saw. Clay sections of core were sampled with a hammer or chisel, or by filleting with an angle grinder. In all cases the sampled portion represented about 20% of the core or 2kg per linear metre. • All samples were sent to an external laboratory (mostly ALS Global - Orange) for preparation and analysis. Samples were dried, crushed and pulverised to get 85% passing a 75um sieve to provide a 0.5g sample for aqua regia digestion with an ICP-AES finish. • RC field duplicates undertaken on a 1:40 basis showed acceptable variation and repeatability. • Samples sizes are appropriate to the grain size of the silver mineralisation which is predominantly very fine.
Quality of assay data and laboratory tests	• The nature, quality and appropriateness of the assaying and laboratory procedures used and 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 (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.	• Samples from RC and diamond drilling were sent to ALS laboratories for preparation and analyses. No information from geophysical methods or hand held XRF devices are used in resource estimations, except to confirm holes are barren, as opposed to assays pending. • Aqua-regia analyses are considered to be a total extraction given the style of mineralisation. MKR's BOKs and CCR's samples were analysed by ALS Global, an accredited commercial laboratory in Orange, NSW. After oven drying, (and jaw crushing of core samples and RC samples with coarse material), the samples were pulverised to at least 85% passing 75 microns. Sub-samples were digested by aqua regia and analysed by ICP for silver, lead, zinc, iron, sulphur, manganese, calcium and magnesium. When results were above upper detection limits the analyses were repeated using a multi-acid digestion and ICP. Quality control methods included field duplicates, coarse blanks and certified standards. Three control samples were inserted for every 20 to 30 samples. The laboratories also maintain their own process of QA/QC utilising standards, repeats and duplicates. • QAQC procedures and results for MRK's drilling are available and were reviewed by MA. • QAQC procedures and results for pre-CCR and BOK drilling are not available, although QAQC samples are present in the assay databases. The pre-CCR/BOK drilling only informs a small proportion of the resources. • The quality control measures have established that the assaying is of appropriate precision and accuracy for the current estimates.
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	• Reported significant intersections were reviewed by geological staff onsite, and checked by senior geological management, including the Exploration/Geology Manager • Six diamond holes and two RC holes were drilled to twin earlier RC and aircore holes, with satisfactory results. • Geological logging data and sampling information is

SECTION 2. Reporting of Exploration Results

Criteria	JORC 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.	• ML1659 is held by Manuka Resources Limited (MKR) MKR is holder of 7 exploration licences in the district. The exploration Licences are EL 6155, EL 6302, EL6623, EL 6482, EL 7515, EL 8498 and EL 7345. • The property Manuka, on which the resources are situated, is owned by MRL. • The resources occur in the Western Lands Leases of NSW where Native Title has been extinguished. However, where disturbance could occur by mining operations or drilling, Aboriginal heritage surveys are undertaken in consultation with traditional owners. • The Company notes that no land within the licence area may be classified as sensitive land. No further approvals other than those required under the Mining Act 1992 are required.
Exploration done by other parties	• Acknowledgment and appraisal of exploration by other parties.	• Stream sediment sampling by Geopeko in 1989 resulted in the discovery of significant base metal sample values. Drilling programs (RAB, RC and diamond) were carried out by Geopeko, CRA, Savage Resources, Pasminco and Triako. Follow up work by CCR resulted in definition of the Wonawinta silver - lead deposits. BOK completed some RC grade control drilling in one open pit.
Geology	• Deposit type, geological setting and style of mineralisation.	• The Wonawinta silver-lead-zinc project, is a carbonate-hosted Pb-Zn-Ag deposit with affinities to MVT-style mineralisation. The primary host is the dolomitised upper fossiliferous portion of the Booth Limestone member of the Early Devonian Winduck Group. • Oxide Ag-Pb-Zn mineralisation is developed as a gently-dipping blanket up to 160m wide and averaging 13m thick on and around the contact between the Booth Limestone and an overlying thick quartz-kaolinite-illite-muscovite clay sequence. Discrete silver minerals are rare with the bulk of the silver associated with lead and iron oxides and sulphates, and lead and zinc carbonates and dolomite. Primary mineralisation consists of vein, breccia and replacement style marcasite, galena and sphalerite. • The NNW-trending, strata-bound Wonawinta deposit extends for about 6km along the western flank of the Wonawinta Anticline.
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 • dip and azimuth of the hole • 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.	• Drillhole data and results are too numerous to list. No new exploration results are included in this announcement. • Summary drillhole information was prepared and first disclosed under the JORC Code 2004. It is not being reported in detail according to the JORC Code 2012 on the basis that the information has not materially changed since it was originally reported. • Drilling by MKR has been publicly disclosed under the JORC Code 2012 on an ongoing basis as appropriate.
Data aggregation methods	• In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated. • Where aggregate intercepts incorporate short lengths of high grade results and longer lengths	• No new exploration results are included in this announcement.

Criteria	JORC Code explanation	Commentary
	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.*	
Relationship between mineralisation widths and intercept lengths	• *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.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	• *The resource drilling is dominated by steep to vertical holes drilled perpendicular or at a high angle to gently dipping mineralisation*
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.*	• *Appropriate diagrams in relation to the deposit, including plans and cross sections, accompany previous public announcements.*
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.*	• *It is not practical to list individual drill holes and intersections due to the high number of drill holes concerned. No new exploration results are included in this report.*
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.*	• *No exploration data has been collected or is considered material to this announcement.*
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale 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.*	• *MKR intend to develop further infill drilling and resource extension drilling budget as a result of this update to the Mineral Resource Estimate* • *Manuka Resources has commenced an initial 16 hole program as proof of concept for base metal sulphides hosted within the Booth Limestone. This program will be reported on in due course.*

SECTION 3. Estimation and Reporting of Mineral Resources

Criteria	JORC Code explanation	Commentary
Database integrity	• Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes. • Data validation procedures used	• Resources were estimated from drill hole data in a MS Access format database linked to Geovia Surpac. Consistency checking between and within these files showed no significant inconsistencies. • Historic data were supplied as CSV files exported from a Micromine database. Supplied data is assumed validated and checked for data corruption, based on historic resource estimation reports that detail validation checks. Random checks of assay values in database against original assay certificates did not find any inconsistencies. All data was imported into an Access database linked to Surpac mining software and checked for errors in collar locations, down hole depths and intervals.
Site visits	• Comment on any site visits undertaken by the Competent Person and the outcome of those visits. • If no site visits have been undertaken indicate why this is the case.	• The competent person has visited the site on three occasions in March 2016, August 2020 and in December 2020 for one to two days to examine the geological setting of the deposit, observe drilling activities including sampling logging and the core storage facility.
Geological inter-pretation	• Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit • Nature of the data used and of any assumptions made. • The effect, if any, of alternative interpretations on Mineral Resource estimation. • The use of geology in guiding and controlling Mineral Resource estimation. • The factors affecting continuity both of grade and geology	• Geological setting and mineralisation controls of the deposit have been confidently established from drill hole logging and geological mapping, including development of a robust three-dimensional model of the major rock units. • Geological and mineralisation interpretation was carried out on approximately 10 m spaced sections in the pit areas and 25 m spaced sections away from the pit areas, oriented with the main drilling direction. • Resources were estimated within a mineralised domain wireframe capturing the zone of continuous mineralisation grading more than approximately 10 g/t silver. Intercepts of lesser grade were sometimes included to aid continuity. • The domains are flat lying and comprise a main, generally north-south trending zone, and two smaller subsidiary zones. The main zone was subdivided into seven mineralised domains on the basis of the tenor of silver grades, data spacing and mineralisation orientation. • Drill hole logging and sampling, surface mapping and grade control including blast hole sampling were all used to help build the geological and mineralisation models to a high degree of confidence. The mineralised domain displayed very good continuity between sections. • Lithological wire-frames interpreted from drill hole logging were used to assign densities to the estimates. • Due to the confidence in understanding of mineralisation controls and the robustness of the geological model, investigation of alternative interpretations is unnecessary.
Dimensions	• The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource	• The main mineralised zone extends over approximately 6.5 km of strike with an average width of approximately 380 m. • Thickness of the mineralised domains averages around 13 m with an average of around 36 m of barren overburden. Estimated resources extend to around 100 m depth.

Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.* • *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* • *The assumptions made regarding recovery of by-products.* • *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).* • *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* • *Any assumptions behind modelling of selective mining units.* • *Any assumptions about correlation between variables.* • *Description of how the geological interpretation was used to control the resource estimates.* • *Discussion of basis for using or not using grade cutting or capping.* • *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	• *Silver resources were estimated by Ordinary Kriging within unfolded model space that preserved the stratiform nature of mineralisation. Lead, calcium, iron and sulphur grades were estimated by Ordinary Kriging.* • *Continuity of silver grades was characterised by variograms modelled for the main mineralised domains.* • *Silver, lead and zinc Lead estimates for each domain included upper cuts of between 2.5 and 5% which generally approximate the 98.5th percentile of each dataset.* • *Mineralised domains boundaries were generally extrapolated around 20 m across strike and up to 100 m along strike from drill holes.* • *Some areas of mineralisation are broadly sampled with up to approximately 240 m between drill traverses. In these areas, the estimates are extrapolated to around 120 m from drilling (1/2 the drill spacing).* • *The mineralised domains used for resource estimation are consistent with geological interpretation of mineralisation controls.* • *Geovia Surpac software was used for data compilation, domain wire-framing, coding of composite values, and resource estimation.* • *The estimation techniques are appropriate for the mineralisation style.* • *Available information suggests that the blast hole samples poorly represent grade and were not used in to estimate grade of the Mineral Resource. (they were used to help define the extents of mineralisation)* • *With allowance for these deficiencies in the production data, the current estimates reconcile reasonably with production.* • *Estimated resources include only silver and lead grades, with no assumptions about recovery of by-products.* • *The resource model includes estimates of sulphur, iron and calcium grades within the mineralised domains.* • *Resources were estimated into varying block sizes depending on drill spacing: 10 x 10 x 2.5 m where RC grade control exists; 40 x 40 x 10 where only wide-spaced exploration drill lines exist, and 20 x 20 x 5 in all other areas.* • *Estimation of silver, lead, zinc, iron, and sulphur occurred in un-fold space, composite locations and blocks were unfolded using the midpoint of the mineralised domain as a reference surface. Calcium grades were estimated without-unfolding.* • *The estimation included a four pass search strategy with a limitation on the maximum number of samples per drill hole. Major axis search distances ranged from 50 m to 75 m, with a semi-major ratio between 1 and 2.2 and a minor ratio between 1 and 3.8.* • *The modelling did not include any specific assumptions about correlation between variables.* • *Wire-framed interpretations of key rock units were used to assign densities to the estimates.* • *Model validation included visual comparison of model estimates and composite grades, and trend (swath) plots, along with comparison with production estimates.* • *Available information suggests that mined grade control ore outlines have included significant misclassification and comparison between production and model estimates are not definitive.*
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content*	• *Tonnages were estimated on a dry basis*

Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• *A cut-off grade was applied according to actual mining and processing methods and their associated costs, recoveries, state royalties and silver price (AU$30/oz in this case). A cut-off grade of 20 g/t was used for any material that could potentially be mined by open pit methods.*
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	• *No mining factors have been applied to the in-situ grade estimates for mining dilution or loss as a result of the grade control or mining process. No metallurgical factors have been applied to the in situ grade estimates* • *Open Pit Mining is a considered a likely scenario for extracting the mineral resources.*
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made*	• *Actual silver recoveries based on plant performance since July 2011.*
Environmental factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made*	• *No specific issues beyond normal requirements for open pit mining in NSW*
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.*	• *Densities were applied to the estimates by rock type. Densities of 2.0, 2.0, 2.4 and 2.6 t/bcm were applied to oxide clay, sulphide clay, oxide limestone and sulphide limestone respectively.* • *These values were derived from 153 immersion density measurements of oven dried drill core from six diamond holes* • *MKR have obtained 31 calliper measurements of oven dried drill core from 13 diamond holes over Bimble and Belah. Reading ranged from 1.69 to 2.74, oxidised and reduced clay samples average 1.96 and fresh samples averaged 2.44*

Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.* • *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* • *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• *Resource classification is based on data quality, drill density, number of informing samples, kriging efficiency, conditional bias slope, average distance to informing samples and deposit consistency (geological continuity).* • *Measured resources adopt the following guidelines. Blocks are dominantly estimated with a minimum of 12 composites, the nearest drill hole within 20m and the average distance to all informing samples approximately 30m or less. Krige efficiencies for measured mineral resources are dominantly higher than 0.5. The conditional bias slope recorded is greater than 0.8. Measured Mineral Resource are estimated in the first kriging run.* • *Indicated resources are defined as those portions of the deposit estimated with a drill spacing of 40 m x 40 m that demonstrate a reasonable level of confidence in the geological continuity of the mineralisation. The following estimation statistics were used as a guideline to assist defining grade continuity. Indicated blocks have been estimated with a minimum of 6 samples, and within 40m of a drill hole, and an average distance to all informing composites of 80 m. Krige efficiencies of blocks within the indicated category fall within the range of 0.25 to 0.4. Lower efficiency blocks may be included if a structural trend is present. Indicated resources may be estimated in the first or second kriging run.* • *Inferred resources are defined as those portions of the deposit estimated with a drill spacing of greater than 40 m x 40 m, and include areas drilled on a 250 m x 100 m sections or those portions of the deposit with a smaller number of intersections (including limited blocks estimated in pass 4) but demonstrating a reasonable level of geological continuity.* • *The resource classification accounts for all relevant factors.*
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates*	• *The resource classifications reflect the Competent Person's views of the deposit.*
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• *The Resource estimate for the Manuka deposit is considered robust and is representative of the global tonnes and grade contained within the area of the deposit tested by drilling. The interpretations of geology and mineralisation are well constrained and support high confidence in the estimate.* • *Confidence in the relative accuracy of the estimates is reflected by the classification of estimates as Measured, Indicated and Inferred.* • *With allowance for some deficiencies in the grade control production data, the current estimates reconcile reasonably with production undertaken by past tenement holders.*