

Quarterly Activities Report

Period ending 30 September 2024

Head Office: Suite 3, Level 1, 5 Gardner Close Milton Queensland 4064 T: 07 3847 2887 E: manager@superiorresources.com.au

Summary

Steam Engine Gold Project

- A Scoping Study on the viability of a toll treatment as well as a standalone processing operation was completed and reported. The study indicated robust economics for both scenarios and also identified significant scalability upsides in the event that modest additional tonnages of open-pittable Resources are identified by further drilling.
- As a result of the robust Scoping Study outcomes, a Feasibility Study was commenced during the reporting period.
- Results from Stage 1 of the 2024 Resource expansion and exploration drilling program were reported during the period.
- New zones of gold mineralisation were identified at the northern ends of the Steam Engine and Eastern Ridge lodes.
- Re-examination of data from a sub-audio magnetic (SAM) geophysical survey commissioned by the Company highlighted a potential southern extension of the main Steam Engine Lode, including several other previously unknown potential lode zones.
- Advanced 3D modelling of the SAM geophysical data was partially completed. Analysis of preliminary models are being progressed.
- A Phase 2 drilling program commenced on 18 October 2024, comprising 40 RC holes for a total of approximately 3,000 metres of drilling.

Bottletree Copper Prospect (Greenvale)

- 3D inversion modelling of a high-resolution ground gravity survey highlighted two large prominent gravity anomalies located 400m south of 2022 to 2023 drilling.
- The gravity anomalies are potentially caused by the core of the Bottletree porphyry Cu-Au system.
- A central gravity anomaly is coincident with the porphyry core target that was modelled in 2023 from drill core observations.
- The Company was awarded a \$300,000 Collaborative Exploration Initiative (CEI) critical minerals grant for the drilling of two deep holes targeting a modelled porphyry core during the 2024 field season. The government has extended the timeframes for completion of drilling of the CEI holes.

Superior Resources Limited

ASX:SPQ

Board

Carlos Fernicola – Chairman Peter Hwang – Managing Director Simon Pooley – Non-Exec Director Carlos Fernicola – Company Secretary

Securities

Ordinary Shares – 2,169,863,798 Top 20 holders: 33% issued capital

Summary

Superior Resources Limited is a Brisbane based ASX-listed mineral explorer with a portfolio of large copper exploration projects, including a developing portfolio of nickel-cobalt projects in northern Queensland. The projects also include large targets for Mount Isa style copper and lead-zinc-silver deposits and uranium deposits in northwestern Queensland and exploration projects in northeast Queensland for VMS and porphyry style copper-gold-silvermolybdenum deposits.

Share Registry

Link Market Services Level 15, 324 Queens Street Brisbane, QLD, 4000

Web Site

www.superiorresources.com.au

Contact

Peter Hwang (07) 3847 2887

Carlos Fernicola (07) 3831 4172

manager@superiorresources.com.au

T +61 7 3847 2887

E manager@superiorresources.com.au

A Suite 3, Level 1, 5 Gardner Close, Milton, QLD 4064 PO Box 2309, Milton, QLD 4064 Superior Resources Limited ASX:SPQ. | ACN 112 844 407



PROJECT LOCATIONS



Figure 1. Location map showing the Company's current portfolio of projects.

GREENVALE PROJECT



Figure 2. Regional aerial magnetics over the Greenvale Project area showing the newly recognised porphyry province (amber tenements) and the magmatic Ni-Cu-PGE sulphide province (tenements outlined in green). The approximate boundary between the two provinces is indicated by the white dashed line.



STEAM ENGINE GOLD PROJECT

The Steam Engine Gold Project (**SEGP**) is a unique gold deposit located between several actively explored Tier 1-potential porphyry Cu-Au-Mo prospects and a proven, but barely explored magmatic sulphide Ni-Cu-PGE province within the Company's 100%-owned Greenvale Project in northeast Queensland (**Figs. 1 to 3**).

On 4 June 2024 the Company announced the forward strategy for progressing the SEGP towards expedited development and revenue generation. The SEGP presents the Company with an opportunity to generate revenue in the short to medium term and provides considerable upside potential to grow the Resource base into a substantial deposit.

SEGP Summary:

- Gold lode system with good continuity developed on several parallel mineralised structures with high grade gold shoots and bonanza grade zones;
- Mineral Resource Estimate¹ (MRE) currently stands at:
 - 4.18 Mt @ 1.5 g/t Au for 196,000oz Au (Stand-Alone Processing scenario); and
 - o 2.72 Mt @ 2.0 g/t Au for 171,000oz Au (Toll Treatment scenario);
- Scoping Study based on extracting and producing approximately 55,000oz Au (Toll Treatment scenario) and 89,000oz Au (Stand-Alone Processing) indicates robust cases for both low scenarios with pre-tax overall cash flows of approximately \$46M (Toll Treatment) and \$71M (Stand-Alone Processing), based on a gold price of A\$3,250²;
- Feasibility Study progressing in parallel with Resource expansion drilling;
- The deposit has only been drilled to shallow levels with average vertical depths of 90 metres at the Steam Engine Lode and 35 metres at the Eastern Ridge Lode. The MRE is developed over a total of 1.2 kilometres of mineralised structures that have a total strike length of at least 10 kilometres; and
- Highly anomalous **SAM geophysical targets**, recent identification of **new gold mineralisation shoots** at the northern end of each lode and **new structures** indicate additional expansion potential.

Current Activity Summary:

- **Stage 2 Resource expansion drilling program** following up SAM targets and new gold shoots. Stage 1 program commenced on 4 July 2024 and was completed at the end of that month;
- **Feasibility Study** work units progressing, including ore beneficiation testing program, waste rock geochemical assessments and environmental studies; and
- SAM 3D geophysical inversion modelling continuing and being interpreted.

¹ Refer to Table 3 for JORC (2012) Mineral Resource confidence category breakdown and original ASX announcement: "*Material upgrade in Steam Engine Resource to 196,000 oz Au with 80.6% increase to Measured and Indicated categories*", dated 11 April 2022. The Company is not aware of any new information or data that materially affects the MRE as presented and all material assumptions and technical parameters underpinning the estimates in the original market announcement continue to apply and have not materially changed.

² Refer to Appendix 1, original ASX announcement: "*Positive Steam Engine Gold Scoping Study*", dated 16 September 2024. The Company confirms that all the material assumptions underpinning the production target and the forecast financial information derived from the production target in the original ASX announcement continue to apply and have not materially changed.





Figure 3. Plan map of the Steam Engine Gold Project area showing mapped geology and gold lodes, outlines of the Mineral Resource envelopes and potential lode extension zones.

2024 SCOPING STUDY

Consistent with the Company's strategy of realising near-term revenue generation and in response to the historically high gold price environment, the Company revised its 2021 Scoping Study with updated input parameters. The revision was considered necessary in light of the following key factors:

- significantly higher gold price assumption of A\$3,250/oz (2021: A\$2,200/oz);
- significantly upgraded Mineral Resource (60.7% increase);
- significant increases in capital and operating cost assumptions (i.e. adopting more conservative modelling); and
- new pit optimisations resulting in extraction of only approximately 55,000oz, or 32% of the current total Toll Treatment Mineral Resource (2021 study based on 70,000oz) and approximately 89,000oz, or 45% of the current total Stand-Alone Processing Mineral Resource.



Scoping Study Outcomes

The Scoping Study has confirmed the potential for a compelling opportunity to develop the SEGP as a low CAPEX, near-term mining and Toll Treatment operation with substantial production upside from any additional Resources that may be identified. If additional Resources are identified, a Stand-Alone Processing Plant operation becomes highly attractive.

Table 1 summarises the Base Case physical and financial evaluation of a Toll Treatment scenario and a Stand-Alone Processing Plant scenario based on a gold price assumption of A\$3,250 and the mining of 863k tonnes of ore at 2.34g/t Au to recover ≈55,000 ounces of gold (Toll Treatment scenario) and 2.13 million tonnes of ore at 1.53g/t Au to recover ≈89,000 ounces of gold (Stand-Alone Processing). The modelled production figures represent approximately 32% and 45% of the Total Mineral Resources for the Toll Treatment and Stand-Alone Processing scenarios, respectively.

Parameter	Toll Treatment	Stand-Alone Processing
Financial Summary		
Overall Cash Flow (pre-tax)	≈A\$46M	≈A\$71M
NPV _{7%} (discounted, pre-tax)	≈A\$38M	≈A\$42M
Internal Rate of Return (IRR) (pre-tax)	104%	25%
All-in Sustaining Costs (AISC) ¹	≈A\$2,325 /oz	≈A\$1,980 /oz
Payback Period	≈1.5 years	≈4.25 years
Gold Price Assumption		50 /oz
Funding		
Total CAPEX (Pre-Production and Closure)	≈A\$6M	≈A\$63M
Funding Required ²	≈A\$13M	≈A\$61M
Return on Capital (pre-tax)	≈764%	≈119%
Physical Outputs		
Processing Period	≈2.6 years	≈4.6 years
Total Ore	863 kt	2,133 kt
Ore Grade	2.34 g/t	1.53 g/t
Metallurgical Recovery – Gold	82% Steam Engine /	95% Eastern Ridge
Gold Produced and Sold	≈55,000 oz	≈89,000 oz

¹ AISC calculated in accordance with the 2018 World Gold Council Updated Guidance Note.

² Includes pre-production CAPEX plus operating losses until profits are generated.

Note: Scoping Study information set out in this report is a summary of information contained in original ASX announcement: *"Positive Steam Engine Gold Scoping Study"*, dated 16 September 2024. The Company confirms that all the material assumptions underpinning the production target and the forecast financial information derived from the production target in the original ASX announcement continue to apply and have not materially changed.



Base-case economic modelling indicates that the Project will deliver robust financial metrics for both the Toll Treatment and Stand-Alone Processing scenarios.

The purpose for assessing the two scenarios was to assist in determining the most beneficial development pathway for the SEGP.

Upside Scenario (@A\$3,500 /oz gold price)

On the basis of a sustained positive outlook for the price of gold over the near to intermediate term, the Scoping Study also considered an upside scenario based on a gold price of **A\$3,500**. The impact on the Project economics is significant (**Table 2**). Under the Toll Treatment scenario, ore tonnes increases by 11% and the pre-tax overall cash flow increases by **45% to ≈\$67M**. The NPV increases by **46% to ≈\$55M**. Under the Stand-Alone Processing scenario, ore tonnes increases by 8% and the pre-tax overall cash flow increases by **47% to ≈\$104M**. The NPV increases by **58% to ≈\$66M**.

	Toll Tre	eatment	Stand-Alone Processing					
Scenario	Base Case @ A\$3,250 /oz	Upside Case @ A\$3,500 /oz	Base Case @ A\$3,250 /oz	Upside Case @ A\$3,500 /oz				
Financial Summary	Financial Summary							
Overall Cash Flow (pre-tax)	≈A\$46M	≈A\$67M	≈A\$71M	≈A\$104M				
NPV _{7%} (discounted, pre-tax)	≈A\$38M	≈A\$55M	≈A\$42M	≈A\$66M				
Internal Rate of Return (IRR) (pre-tax)	104%	128%	25%	30%				
All-in Sustaining Costs (AISC) ¹	≈A\$2,325 /oz	≈A\$2,339 /oz	≈A\$1,980 /oz	≈A\$1,994 /oz				
Payback Period	≈1.5 years	≈1.3 years	≈4.3 years	≈3.1 years				
Gold Price Assumption	A\$3,250 /oz	A\$3,500 /oz	A\$3,250 /oz	A\$3,500 /oz				
Funding								
CAPEX (Pre-Production and Closure)	≈A\$6M	≈A\$6M	≈A\$63M	≈A\$63M				
Funding Required ²	≈A\$13M	≈A\$12M	≈A\$61M	≈A\$61M				
Return on Capital (post-tax)	≈764%	≈1,108%	≈119%	≈175%				
Physical Outputs								
Processing Period	≈2.6 years	≈2.8 years	≈4.6 years	≈4.9 years				
Total Ore	863 kt	958 kt	2,133 kt	2,305 kt				
Ore Grade	2.34 g/t	2.31 g/t	1.53 g/t	1.49 g/t				
Metallurgical Recovery – Gold	:	82% Steam Engine /	95% Eastern Ridge					
Gold Produced and Sold	≈55,000 oz	≈61,000 oz	≈89,000 oz	≈96,000 oz				

Table 2. Key Outcomes – Upside Scenario compared to Base Case Scenario

¹ AISC calculated in accordance with the 2018 World Gold Council Updated Guidance Note.

² Includes pre-production CAPEX plus operating losses until profits are generated.



Sensitivity Analysis

The Base Case Project economics were subjected to a sensitivity analysis on the basis of a +/-15% change in key parameters (**Figs. 4 and 5**). Changes in the Australian dollar gold price and average gold grade result in the largest impact to project economics under both the Toll Treatment and Stand-Alone Processing scenarios.



Figure 4. Sensitivity analysis on the *Toll Treatment scenario* showing the effects of a $\pm 15\%$ variability in key parameters on the base case \$46M Pre-Tax Cash Flow.



Figure 5. Sensitivity analysis on the *Stand-Alone Processing scenario* showing the effects of a ±15% variability in key parameters on the base case \$71M Pre-Tax Cash Flow.



Under the Toll Treatment scenario, haulage distance and haulage unit costs are the most sensitive parameters after gold price and grade, with mining unit costs having a similar impact.

The significant deleterious effects of haulage on the economics are not a factor under the Stand-Alone Processing scenario. This enables a significantly greater amount of ore to be mined and milled, resulting in the Stand-Alone Processing option producing 62% more gold than the Toll Treatment scenario. The overall cashflow is also significantly higher under the Stand-Alone Processing scenario, despite the higher capital and operating costs.

Mineral Resource Estimate

The Scoping Study is based on the April 2022 Mineral Resource Estimate³, which was conducted in accordance with JORC (2012) by a Competent Person.

The Steam Engine and Eastern Ridge Lodes within the SEGP have only been drilled to shallow levels with average vertical depths of 90 metres at the Steam Engine Lode and 35 metres at the Eastern Ridge Lode. A high-quality Mineral Resource with a significant portion in the JORC 2012 Measured confidence category was established on the two lodes in 2022 (**Table 3**; **Figs. 6 to 9**). The high degree of confidence in the Mineral Resource enables ready progression to feasibility and mining studies.

The SEGP is characterised by a significant high grade ore zone that dominates the Steam Engine Lode. Bonanza grade gold mineralisation occurs within this zone.

Model	Classification	Tonnes	Grade (g/t Au)	Ounces (Au)
STAND-ALONE PROCESSING	MEASURED	800,000	2.1	53,000
MODEL	INDICATED	1,420,000	1.5	68,000
(0.25 g/t Au block grade cut-off)	INFERRED	1,960,000	1.2	75,000
TOTAL		4,180,000	1.5	196,000
	MEASURED	590,000	2.6	49,000
TOLL TREATMENT MODEL (1.0 g/t Au block grade cut-off)	INDICATED	1,020,000	1.9	62,000
	INFERRED	1,110,000	1.7	60,000
TOTAL		2,720,000	2.0	171,000

Table 3. Steam Engine Gold Project Mineral Resource Estimates (JORC, 2012)

The MRE incorporates results from a total of 314 drill holes for 22,733 metres of drilling, with the Steam Engine Lode accounting for 16,182 metres of drilling and the Eastern Ridge Lode, 3,983 metres. The estimation process considered two scenario models, requiring the modelling of two separate MREs:

- 1. High Grade Model Toll Treatment model; and
- 2. Low Grade Model Owner-operated on-site processing plant model.

³ Information in this report relating to Mineral Resource Estimates (MRE) and associated block models is a summary of information contained in original ASX announcement: "*Material upgrade in Steam Engine Resource to 196,000 oz Au with 80.6% increase to Measured and Indicated categories*", dated 11 April 2022. The Company is not aware of any new information that materially affects the MRE as presented and all material assumptions and technical parameters underpinning the estimates in the original market announcement continue to apply and have not materially changed.





Figure 6. Steam Engine and Eastern Ridge *Toll Treatment* block models showing Base Case optimised pit shells and gold grade categories.



Figure 7. Steam Engine and Eastern Ridge *Toll Treatment* block models showing Base Case optimised pit shells and Measured, Indicated and Inferred Mineral Resource confidence classifications.





Figure 8. Steam Engine and Eastern Ridge *Stand-Alone Processing* block models showing base case optimised pit shells and gold grade categories.



Figure 9. Steam Engine and Eastern Ridge *Stand-Alone Processing* block models showing base case optimised pit shells and Measured, Indicated and Inferred Mineral Resource confidence classifications.



SEGP RESOURCE EXPANSION POTENTIAL

Almost all exploration work to date at the SEGP has been focussed on Resource definition and expansion drilling of the two historically known lode zones, the Steam Engine Lode and the Eastern Ridge Lode. During 2020 and 2021, the Company conducted intense drilling campaigns with the aim of establishing and expanding a JORC, 2012-compliant Mineral Resource. The drilling campaigns enabled the incorporation of 314 drill holes totalling 22,733 metres of drilling into the most recent Mineral Resource Estimate that was completed during 2022.

Gold mineralisation at the SEGP is contained within significant geological structures that, to varying degrees, comprise localised shear zones. These mineralised structures are highlighted geochemically by anomalous zones of elevated Au-in-soil geochemistry (**Fig. 10**).



Figure 10. Plan image showing gridded Au soil geochemistry over background RTP airborne magnetics data. The Steam Engine and Eastern Ridge lode Mineral Resource outlines are shown as white polygons together with areas of potential new lode zones. The Southern Zone, Windmill East and Origin mineralised zones are also shown.

The SEGP Mineral Resource is developed over a total of 1.2 kilometres of this structure. Gold-in-soil geochemistry indicates that gold mineralisation exists along structures with a total strike length of at least 10 kilometres (**Fig. 10**). It is evident that significant potential exists to extend gold lode mineralisation along strike to the north and south of the Steam Engine and Eastern Ridge lodes (**Fig. 10**). Strong gold mineralisation also exists over a large area at the Windmill East and Origin Prospects, with rock chip assays up to 65.9 g/t Au.



SUB-AUDIO MAGNETICS SURVEY

Analysis of data acquired by a recent sub-audio magnetics (**SAM**) geophysical survey over the Steam Engine and Eastern Ridge lodes indicates that the SAM geophysical technique may be particularly effective at identifying more intensely mineralised gold lodes as well as lodes that have significant depth extent to the mineralisation. Late channel responses from the total field electromagnetics (**TFEM**) component of the SAM survey appears to effectively highlight the Steam Engine and Eastern Ridge lodes and in particular, depth extensions to the high-grade zones within the lodes (**Fig. 11**).

Strikingly, the TFEM has highlighted a potential southern extension of the Steam Engine Lode. Such an extension was previously thought to not exist. Furthermore, several other previously unknown potential lode zones with significant depth extent are also highlighted by the SAM TFEM data (**Fig. 11**). This is an important finding and if new lodes are present at these locations, a rapid and substantial expansion of the Steam Engine Resource may result.



Figure 11. Image of late channel (Channel 16) SAM total field electromagnetics (TFEM) responses over the Steam Engine and Eastern Ridge lodes. Discrete areas of low SAM TFEM response are coincident with the most intensely mineralised parts of the gold lodes. A possible southern extension to the Steam Engine Lode is visible as well as other potential lode zones.



2024 STAGE 1 DRILLING PROGRAM

Results from the Scoping Study indicate that substantial uplifts in overall cash flow and NPV outcomes will result from modest increases in the total open-pittable Resources. Based on those outcomes, expansion of shallow gold Resources became a parallel objective (together with conducting a Feasibility Study) for progressing the SEGP.

The 2024 drilling program was designed to expedite the expansion of new areas of shallow gold mineralisation along strike of the current Mineral Resource envelope and to also target high priority new lode zones. Reversecirculation (**RC**) drilling at the SEGP commenced with a Stage 1 program comprising Resource expansion holes at the northern ends of the Eastern Ridge and Steam Engine lodes (**Fig. 12**). In total, the Phase 1 program resulted in the completion of 32 RC holes for 2,614 metres of drilling (**Table 4**).

Table 4. 2024 Steam Engine Drilling Program Phase 1 Statistics

Steam Engine		Eastern Ridge	Totals
Holes	16	16	32
Metres	1,230	1,384	2,614

Stage 1 drill results

The 32 RC drill holes that were drilled at the Steam Engine and Eastern Ridge lodes vary in total depths, ranging from 35 to 180 metres. Significant intersections include⁴:

STEAM ENGINE LODE

SRC215:

- 12m @ 1.03g/t Au from 10m
 incl 4m @ 2.00g/t Au from 11m
- 6m @ 1.68g/t Au from 30m
 incl 4m @ 2.08g/t Au from 31m

SRC220:

- 8m @ 1.73g/t Au from 79m
 incl 1m @ 5.62g/t Au from 83m
 SRC206:
- 7m @ 1.38g/t Au from 16m incl 1m @ 4.67g/t Au from 22m

SRC216:

8m @ 1.06g/t Au from 37m
 incl 1m @ 2.90g/t Au from 43m

SRC217:

10m @ 0.96g/t Au from 94m
 incl 5m @ 1.41g/t Au from 99m
 incl 2m @ 2.26g/t Au from
 102m

EASTERN RIDGE LODE

SRC202:

12m @ 3.29g/t Au from 71m
 incl 5m @ 7.65g/t Au from 73m
 incl 2m @ 17.09g/t Au from 74m

SRC203:

6m @ 2.35g/t Au from 59m
 incl 3m @ 4.26g/t Au from 59m
 incl 1m @ 9.08g/t Au from 59m

SRC193:

 3m @ 1.72g/t Au from 103m incl 1m @3.20g/t Au from 104m

SRC195:

1m @ 7.18g/t Au from 4m incl **1m @3.20g/t Au** from 104m

⁴ Refer to ASX Announcements: "Discovery of a multi-lode gold shoot at northern end of the Steam Engine Lode from Phase 1 program", dated 3 October 2024; and "Steam Engine Project drill program: Results revealing a second high grade Au shoot at Eastern Ridge Lode, dated 23 September 2024.





Figure 12. Map of part of the Steam Engine and Eastern Ridge lodes showing surface geology, lode outcrops (red), reported Stage 1 drill holes (in blue) and planned, but to be drilled holes (in pink). Pre-2024 drill holes are shown in black.

Observations

The Stage 1 results have identified potential new gold shoots at the northern ends of each of the Steam Engine and Eastern Ridge lodes. At the northern end of the Steam Engine Lode, a newly recognised stacked, multi-lode gold shoot zone has been identified (**Figs. 13 to 15**). This shoot zone indicates a potential strengthening of the mineralising system or a complex strain zone that may develop into a greater volume of lode or bulk mineralisation at the northern end of the lode.

At the Eastern Ridge Lode, a new high-grade zone that thickens with depth has potential to develop into a highgrade shoot with further drilling. The mineralisation in this part of the lode appears to show a shallow plunge towards the northwest and indicates further mineralisation potential at this northern end of the Eastern Ridge Lode. Importantly, the results demonstrate a significant thickening of mineralisation together with significantly increased grade with depth (**Figs. 16 and 17**).



A particularly notable observation is the identification of a potentially new lode zone located about 80 metres to the west of the Eastern Ridge Lode. This zone was intersected in 6 of the 16 holes drilled (SRC192, 195, 198, 199, 203 and 204). Each of the 6 holes are step-out holes designed to extend the existing Mineral Resource envelope down-dip.

The new zones of mineralisation at the northern end of each of the lodes are significant as they are located outside and to the north of the optimised pit that was modelled from the 2022 Mineral Resource for the purposes of the recent Scoping Study⁵ (Figs. 14, 15 and 17). The location of these results within the 2022 Mineral Resource (Toll Treatment) model indicates that a positive impact can be expected on project development economics.



Figure 13. Cross sections through the new gold shoot zone at the northern part of the Steam Engine Lode looking NNE⁶. Section through holes SRC213, SRC214 and SRC220 (blue trace) and planned Phase 2 drill hole (pink trace) (left). Section through SRC215 (blue trace), pre-2024 hole SRC154 (black trace) and planned Phase 2 drill holes (pink trace) (right). Averaged grades for each of the intersections of new significant hangingwall lodes are shown as grade categories on the left side of the drill hole traces. Logged geological lithologies are coded on the right side of the drill hole traces.

⁵ Refer to ASX announcement "Positive Steam Engine Gold Scoping Study", dated 16 September 2024.

⁶ Refer to ASX announcement "Discovery of a multi-lode gold shoot at northern end of Steam Engine Lode from Phase 1 program", dated 3 October 2024.



Figure 14. Long section view of the Steam Engine Lode looking ESE, showing the Mineral Resource block model (Toll Treatment model) with block grade categories, 2024 Phase 1 drill holes (blue trace), pre-2024 drill holes (black trace) and Phase 2 planned RC holes (pink trace). The Scoping Study revenue factor 1.0 optimised pit shell is also shown (shaded)⁷.



Figure 15. Long section view of the Steam Engine Lode looking ESE, showing the Scoping Study revenue factor 1.0 optimised pit shell, 2024 Phase 1 drill holes (blue trace), pre-2024 drill holes (black trace) and Phase 2 planned RC holes (pink trace). Au intersections (0.4g/t Au cut-off) are also shown along drill hole traces⁸.

⁷ Mineral Resource block model originally published on ASX Market Announcements Platform on 11 April 2022 ("*Material upgrade in Steam Engine Resource to 196,000 oz Au with 80.6% increase to Measured and Indicated categories*") and is reproduced in this report without any modification. The Company is not aware of any new information that materially affects the MRE as presented and all material assumptions and technical parameters underpinning the estimates in the original market announcement continue to apply and have not materially changed. Optimised pit shell was generated as part of the recent Scoping Study, originally published on ASX Market Announcements Platform on 16 September 2024 ("*Positive Steam Engine Gold Scoping Study*"). The Company confirms that all the material assumptions underpinning the production target and the forecast financial information derived from the production target in the original ASX announcement continue to apply and have not materially changed.

⁸ Refer to ASX announcement "Discovery of a multi-lode gold shoot at northern end of Steam Engine Lode from Phase 1 program", dated 3 October 2024.





Figure 16. Cross sections of the Eastern Ridge Lode at drill holes SRC202 (left) and SRC203 (right), viewed NNE and showing gold intersections and alteration zones (olive bar along drill holes traces)⁹.



Figure 17. Long section view of the central part of the Eastern Ridge Lode, viewed ESE and showing the optimised pit as modelled for a toll treatment mining and processing scenario under the recent Scoping Study, interpreted plunge of high-grade mineralisation shoots (red arrows), 2024 reported drill holes (blue traces), Au intersections and grade categories, and proposed holes (pink traces) and pre-2024 holes (black traces). Note that the high-grade gold intersections in SRC202 and SRC203 lie outside the optimised pit.

⁹ Refer to ASX announcement "Steam Engine Project Drill Program: Results revealing second high grade Au shoot at Eastern Ridge Lode", dated 23 September 2024.



2024 STAGE 2 DRILLING PROGRAM

The Phase 2 RC drilling program commenced on 18 October 2024 and was designed to follow up positive results from the Phase 1 program. Each of the Phase 2 planned holes are targeting new lode zones as follows (refer to summary in **Table 5 and Fig. 18**):

- new gold shoot discoveries from the Phase 1 Program at the northern end of the Steam Engine and Eastern Ridge lodes;
- sub-audio magnetic (SAM) geophysical targets at the southern end of the Eastern Ridge Lode; and
- maiden drill testing of the Windmill East lode.

	Steam Engine	Eastern Ridge	Windmill East	Total	Subject to visuals
Holes	17	17	6	85	45
Metres	1,500	1,200	300	3,000	2,300

Table 5. Phase 2, 2024 Steam Engine RC Drilling Program Summary



Figure 18. Plan view of the Steam Engine Lode (left) and Eastern Ridge Lode (right) showing the lode outcrop, planned Phase 2 RC drill holes (red drill traces), completed Phase 1 RC holes (green traces), pre-2024 drill holes (grey). Gridded Auin-soil geochemistry also shown as well as late channel (Channel 16) SAM total field electromagnetics (TFEM) chargeability data in the background.



BOTTLETREE (PORPHYRY Cu-Au-Mo)

The results of 3D geophysical modelling of high-resolution ground gravity data were reported to the market during the market on 1 August 2024.

Gravity Survey and Modelling

A high-resolution ground gravity survey was completed over the Bottletree Project area during the latter half of 2023, covering an area of approximately 7km² with gravity station acquisition on a 100m x 100m grid configuration.

Terrain correction and modelling of the gravity data using UBC 3D inversion modelling software produced a 3D gravity model that has enabled a detailed analysis of rock density variations across the project area, including at depth.

Ground or airborne gravity surveys are a valuable tool for the exploration of a range of ore deposit systems and have been instrumental in the discovery of many large porphyry copper deposits. By measuring gravity factors, bulk rock densities can be modelled and interpreted over a broad area. Rock densities are variable depending on numerous factors such as the rock type (e.g. sandstone, granite, ironstone), the degree and type of alteration and various forms of mineralisation.

Gravity Model Observations

Prior to the gravity survey, no information was available to provide a characterisation of the rock density architecture within the project area.

The 3D inversion modelling on the Bottletree gravity data has defined two distinct gravity-high features (**Fig. 19**).

Central Gravity Anomaly

The highest priority anomaly, which is more centrally located within the survey area, is striking, as it is coincident with the porphyry core target that was determined in 2023. The 2023 porphyry core target (**Fig. 20**) was based on:

- limited vectoring from porphyry indicators identified in drill core;
- hydrothermal alteration zonation patterns across the prospect area; and
- outcropping gossans at the target location.

The central gravity anomaly, located approximately 400 metres to the south of the 2022 and 2023 drill holes, is of moderately high amplitude and extends to significant depths (**Fig. 19**). Importantly, the anomaly is partly associated with a magnetic-high anomaly. The 3D form of the modelled gravity anomaly appears to conform around the 3D geometry and form of the magnetic anomaly (**Fig. 21**).

The gravity and magnetic observations are interpreted to be consistent with features associated with a porphyry system, including alteration, pyrrhotite-pyrite-chalcopyrite mineralisation or alteration associated with secondary magnetite. The two proposed CEI drill holes are considered to appropriately test the central gravity anomaly and do not require any redesign (**Fig. 19**).





Figure 19. Plan showing 3D inversion density models of the central gravity anomaly and the second gravity anomaly as high-density 2.77t/m3 iso-surfaces. Also shown are 2022 – 2023 drill holes (blue trace) and the proposed 2024 drill holes, including QLD government CEI grant holes (pink trace). Aerial magnetic imagery background.



Figure 20. Plan of Bottletree Project area showing the 2023-predicted porphyry core target area (yellow half circle) as modelled from drill hole data. Also shown are the 0.1% Cu mineralisation shells, 2022 – 2023 drill holes and the proposed CEI holes as planned in 2023.



Figure 21. Perspective view (looking north) of Bottletree 3D inversion density model (red polygons) together with 3D modelled aerial magnetics (yellow polygons) showing the close relationship between the two models.

Gravity Response Over Bottletree Prospect Area

Another important observation associated with the central gravity anomaly is that the immediate area of the Bottletree Prospect corresponds with a broad, oval-shaped positive amplitude gravity feature that is about 1.5 kilometres in average diameter (**Fig. 22**).

The positive amplitude zone is interpreted to be related to the Bottletree porphyry system and provides further confidence about the presence and size of the alteration system associated with the porphyry.





Figure 22. Pseudo-coloured plan image of first vertical derivative (1VD) of spherical cap bouguer anomaly from the Bottletree gravity survey data showing a large oval-shaped area coincident with the Bottletree Prospect area. Note the relatively high gravity responses that define the prospect area, with a low gravity response surrounding area.

Second Gravity Anomaly

Notably, the 3D modelling has defined an unexpected large second and potentially higher amplitude gravity anomaly located approximately 100 metres to the northeast of the 2022 and 2023 drill holes (**Figs. 19, 21 and 22**).

This anomaly is particularly interesting as surface geological mapping shows dolerite cropping out at surface over some parts of the anomaly, which prompts an initial interpretation that a dolerite intrusion (typically high density) is the cause of the anomaly.

However, such an interpretation is not supported by the 3D magnetic model (dolerite is characterised by high magnetic susceptibility). The magnetic anomaly is small in size and does not correlate with the large gravity anomaly (**Fig. 21**). Instead, the magnetic anomaly appears to reside in 'embayments' in the shallower parts of the gravity anomaly. Such an interplay between the magnetic anomaly and the gravity anomaly is similarly observed at the central gravity anomaly.

In addition, 2022 drill holes BTDD002 and BTDD003 were drilled from a collar location and at a dip that was expected to intersect the mapped dolerite. Dolerite was not identified in either of the holes.

Furthermore, the 3D inversion modelling indicates that the second gravity anomaly plunges towards the central gravity anomaly and both anomalies may coalesce together at depth (**Fig. 23**).



As a result, the second gravity anomaly is interpreted to be caused by a rock type other than dolerite and potentially, an intrusion that is related to the main Bottletree porphyry system.

The second gravity anomaly is considered to be a high priority target to be drill tested in the next Bottletree drilling program.



Figure 23. Cross section of Bottletree 3D inversion density model across the central gravity anomaly and the second gravity anomaly showing an apparent convergence of the two anomalies at depth.

Queensland Government CEI Grant Program Update

On 8 April 2024, the Company was awarded a \$300,000 Collaborative Exploration Initiative (**CEI**) grant for the drilling of two critical deep diamond core holes at the Bottletree Prospect. The two planned holes total 1,700 metres of drilling. The funding arrangements are on a reimbursement basis.

During the reporting period and in light of the deleterious equity market conditions, the relevant government office sought to vary the timeframes for the completion of the agreed CEI funded activities. As a result, the agreed date for completion of the Bottletree CEI holes has been extended from 18 November 2024 to 15 May 2025.

The Company endeavours to complete the drilling of the CEI holes by the agreed date (as amended).



CORPORATE AND COMMERCIAL

Capital Raise

On 1 August 2024, the Company announced a capital raise campaign comprising a Rights Issue to existing shareholders to raise \$1m and, subject to shareholder approval (which was obtained on 5 September 2024), a Placement on the same terms to raise up to a further \$1m.

The Rights Issue was structured on the basis of a 1 for 14 non-renounceable entitlement offer priced at 0.7c with an attaching unlisted 1 for 2 option. The options are exercisable at 1.5c and expire in two years from the date of issue.

The Rights Issue closed oversubscribed, raising a total of \$1.18m.

117,156,966 shares (and attaching options) remain to be issued under the Placement. The Placement will not be restricted to sophisticated investors.

Investments

Superior maintains an exposure in relation to ASX listed entity, Deep Yellow Limited (ASX:DYL).

As at 30 September 2024, the Company held 74,244 DYL shares with a closing value of \$102,085.

Related Party Matters

Payments to Directors of the Company and related parties during the Quarter totalled \$113,747.64.

ASX Listing Rule 5.3.3

Appendix 1 sets out information that is required under ASX Listing Rule 5.3.3 (for exploration entities).

Peter Hwang Managing Director Contact:

Further Information:

Mr Peter Hwang Ph: (07) 3847 2887 www.superiorresources.com.au manager@superiorresources.com.au



Reporting of Results: The Exploration Results, Mineral Resource Estimations, Scoping Study outcomes and exploration interpretations contained in this report reflect information that has been reported in ASX market announcements as referenced within this report.

Information in this report relating to the Steam Engine Gold Project 2024 Scoping Study is a summary of information contained in original ASX announcement: "Positive Steam Engine Gold Scoping Study", dated 16 September 2024.

Information in this report relating to Mineral Resource Estimates (MRE) and associated block models is a summary of information contained in original ASX announcement: "Material upgrade in Steam Engine Resource to 196,000 oz Au with 80.6% increase to Measured and Indicated categories", dated 11 April 2022. The Competent Person relevant to the original ASX announcement is Mr Kevin Richter.

Information in this report relating to the Bottletree Project is a summary of information contained in original ASX announcement: "Gravity survey highlights porphyry core target and identifies second significant target", dated 1 August 2024. The Competent Person relevant to the original ASX announcement is Mr Peter Hwang.

Reliance on previously reported information: In respect of references contained in this report to previously reported Exploration Results, Mineral Resources, Ore Reserves or Exploration Targets, the Company confirms that it is not aware of any new information or data that materially affects the information, results or conclusions contained in the original reported document. In respect of previously reported Mineral Resource estimates, all originally reported material assumptions and technical parameters underpinning the estimates continue to apply and have not been materially changed or qualified.

In respect of references contained in this report to previously reported Scoping Study results, the Company confirms that all the material assumptions underpinning the production target and the forecast financial information derived from the production target in the original ASX announcement continue to apply and have not materially changed.

Forward looking statements: This document may contain forward looking statements. Forward looking statements are often, but not always, identified by the use of words such as "seek", "indicate", "target", "anticipate", "forecast", "believe", "plan", "estimate", "expect" and "intend" and statements that an event or result "may", "will", "should", "could" or "might" occur or be achieved and other similar expressions. Indications of, and interpretations on, future expected exploration results or technical outcomes, production, earnings, financial position and performance are also forward-looking statements. The forward-looking statements in this presentation are based on current interpretations, expectations, estimates, assumptions, forecasts and projections about Superior, Superior's projects and assets and the industry in which it operates as well as other factors that management believes to be relevant and reasonable in the circumstances at the date that such statements are made. The forward-looking statements are subject to technical, business, economic, competitive, political and social uncertainties and contingencies and may involve known and unknown risks and uncertainties. The forward-looking statements may prove to be incorrect. Many known and unknown factors could cause actual events or results to differ materially from the estimated or anticipated events or results expressed or implied by any forward-looking statements. All forward-looking statements made in this presentation are qualified by the foregoing cautionary statements.

Disclaimer: Superior and its related bodies corporate, directors, officers, employees, agents or contractors do not make any representation or warranty (either express or implied) as to the accuracy, correctness, completeness, adequacy, reliability or likelihood of fulfilment of any forward-looking statement, or any events or results expressed or implied in any forward-looking statement, except to the extent required by law. Superior and its related bodies corporate and each of their respective directors, officers, employees, agents and contractors disclaims, to the maximum extent permitted by law, all liability and responsibility for any direct or indirect loss or damage which may be suffered by any person (including because of fault or negligence or otherwise) through use or reliance on anything contained in or omitted from this presentation. Other than as required by law and the ASX Listing Rules, the Company disclaims any duty to update forward looking statements to reflect new developments.



Appendix 1

DISCLOSURES REQUIRED UNDER ASX LISTING RULE 5.3.3

State	Tenement Name	Tenement ID	Location	Interest	Holder	Comments
QLD	Hedleys 2	EPM15670	Nicholson	100%	SPQ	Granted
QLD	Hedleys South	EPM18203	Nicholson	100%	SPQ	Granted
QLD	Tots Creek	EPM19097	Victor	100%	SPQ	Granted
QLD	Scrubby Creek	EPM19214	Victor	100%	SPQ	Granted
QLD	Cockie Creek	EPM18987	Greenvale	100%	SPQ	Granted
QLD	Cassidy Creek	EPM19247	Greenvale	100%	SPQ	Granted
QLD	Dinner Creek	EPM25659	Greenvale	100%	SPQ	Granted
QLD	Wyandotte	EPM25691	Greenvale	100%	SPQ	Granted
QLD	Cockie South	EPM26165	Greenvale	100%	SPQ	Granted
QLD	Victor Extended	EPM26720	Victor	100%	SPQ	Granted
QLD	Twelve Mile Creek	EPM26751	Greenvale	100%	SPQ	Granted
QLD	Dido	EPM27754	Greenvale	100%	SPQ	Granted
QLD	Arthur Range	EPM27755	Greenvale	100%	SPQ	Granted
QLD	Phantom Creek	EPM27932	Greenvale	100%	SPQ	Granted
QLD	Six Mile Creek	EPM28630	Greenvale	100%	SPQ	Granted
QLD	Lyndhurst	EPM28632	Greenvale	100%	SPQ	Granted
QLD	Middle Creek	EPM28633	Greenvale	100%	SPQ	Granted

Mining tenements held at the end of the quarter and their location

• Mining tenements acquired and disposed of during the end of the quarter and their location

State	Tenement Name	Tenement ID	Location	Interest	Holder	Comments

• Beneficial percentage interests held in farm-in or farm-out agreements at end of the quarter

State	Project Name	Agreement Type	Parties	Interest held at end of quarter by exploration entity or child entity	Comments

Abbreviations:

EPMExploration Permit for Minerals, QueenslandSPQSuperior Resources Limited

Quarterly Activities Report - Period ending 30 September 2024 - Page 26 of 26