

13 May 2024

## Melrose leaching test work generates up to 90% scandium recoveries

### Highlights

- Two further sighter leach tests focused on maximising scandium recovery at atmospheric pressures from Melrose laterite-hosted mineralisation returns recoveries of 62.6% and 90.1% scandium respectively
- Latest results represent significant improvement on previous best scandium recovery of 40%
- Improvement in scandium recovery attributed to increased acidity (sulphuric acid) and addition of reagents (NaCl)
- Rimfire has engaged highly experienced hydrometallurgist Mr Boyd Willis as Process Consultant to guide future metallurgical studies
- All activities fully funded by Rimfire's exploration partner - GPR

**Commenting on the announcement, Rimfire's Managing Director Mr David Hutton said:** *"The results of the further sighter leach tests are highly encouraging and build on the previous test results.*

*Having demonstrated that we can recover up to 90.1% of the scandium into a "pregnant" solution by leaching Melrose mineralised material at atmospheric pressures, our attention is now turning to maximising the extraction of scandium from solution.*

*Rimfire is conducting a review of existing publicly available extraction technologies and has engaged highly experienced hydrometallurgist Mr Boyd Willis as Process Consultant to guide this work.*

*Mr Willis' engagement provides Rimfire with invaluable metallurgy capability to complement our highly experienced geological team. We feel that the latest metallurgical results together with recent drilling results from the Murga and Melrose Scandium Prospects, as well as the calibre of our technical team, reinforce Rimfire's position as unique ASX exposure to scandium".*



RIMFIRE PACIFIC MINING LTD

ASX: RIM

"Critical Minerals Explorer"

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Rimfire Pacific Mining (**ASX: RIM**, “Rimfire” or “the Company”) is pleased to advise that 2 further leaching tests conducted on scandium - mineralised laterite material from the Melrose prospect have significantly improved the recovery of scandium into solution compared to previous leaching tests.

The Melrose Scandium Prospect which is located 75 kilometres northwest of Parkes in central NSW - *Figures 1 and 2*).

## **Metallurgical Test work**

The two latest leach tests (LT09 and LT10) were undertaken by Perth specialist metallurgical services group - Independent Metallurgical Operations Pty Ltd (IMO) and follow on from eight (8) leach tests (LT01 to LT08) previously undertaken by IMO for Rimfire.

To underpin all the leaching tests, 260 kg of mineralised PQ three quarter diamond drill core from holes FI2397 – 2400 previously drilled by Rimfire at Melrose was supplied to IMO in Perth last year (*see Rimfire’s ASX Announcement dated 4 March 2024*).

All interval samples were combined to generate one Master Composite. The Master Composite was crushed to P100 50 mm, homogenized, and then representatively split into ten (10) subsamples in preparation for metallurgical test work.

Assaying of a representative sub-sample of the Master Composite returned the following head assay grades; 0.33% nickel, 0.12% cobalt, and 380ppm scandium (*see Rimfire’s ASX Announcement dated 4 March 2024*).

Two subsamples from the Master Composite were used for LT09 and LT10 (1 each).

The previous 8 tests focused on **recovering a combined nickel – cobalt – scandium product** into solution with LT08 achieving the highest extractions of 89.3% for cobalt, 87.5% for manganese, 58.1% for nickel and 39.9% for scandium (*see Rimfire’s ASX Announcement dated 4 March 2024*).

At the time, the higher extractions of nickel and scandium were attributed to an increase in acid strength.

Following the completion of LT08, the latest leaching tests (LT09 and LT10) were carried out with a particular emphasis on **maximising scandium recovery into solution**. Both tests were acid-chloride whole-of-ore leach tests carried out at atmospheric pressure and at 82°C.

The acid-chloride component consisted of sulphuric acid of 98% H<sub>2</sub>SO<sub>4</sub> being diluted in distilled water and NaCl (salt) dosed to 35 g/l as the source of chloride ions.

A P<sub>100</sub> 75 µm grind size was applied to the LT09 to LT10 samples.

The metal recovery and solution grades results presented in *Tables 1 and 2* reveal that after 48 hours, LT09 achieved recoveries into solution of 51.3% for cobalt, 67.4% for nickel and 62.6% for scandium, and LT10 achieved recoveries into solution of 92.5% for cobalt, 90.4% for nickel and 90.1% for scandium

The improvement in LT09 and LT10 performance compared to LT08 is attributed to leaching in very high concentrations, and large quantities of acid [2.6 M H<sub>2</sub>SO<sub>4</sub> and 5.2 M H<sub>2</sub>SO<sub>4</sub> respectively] at 82°C and potentially, the addition of NaCl as a reagent.

The acid dosages for LT09 and LT10 were deliberately set high and resulted in consumptions of 602 kg H<sub>2</sub>SO<sub>4</sub> / dry tonne of ore (LT09) and 1,604 kg H<sub>2</sub>SO<sub>4</sub> / dry tonne of ore (LT10).

It is noted that the acid consumptions used in LT09 and LT10 were used in the tests to better understand conceptual leaching parameters (“parameter boundaries”).

**Table 1: LT09 Metal Extractions and Grades (H<sub>2</sub>SO<sub>4</sub> – NaCl System at 82°C – Fine Grind)**

Time	Extraction						
	Al	Co	Fe	Mg	Mn	Ni	Sc
(hours)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
48	30.6%	51.3%	39.2%	81.9%	57.9%	67.4%	62.6%
Time	Pregnant Solution Grades						
	Al	Co	Fe	Mg	Mn	Ni	Sc
(hours)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
48	7,277	287	74,295	4,307	3,345	1,040	122

**Table 2: LT10 Metal Extractions and Grades (H<sub>2</sub>SO<sub>4</sub> – NaCl System at 82°C – Fine Grind)**

Time	Extraction						
	Al	Co	Fe	Mg	Mn	Ni	Sc
(hours)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
48	80.1%	92.5%	85.9%	85.4%	90.9%	90.4%	90.1%
Time	Pregnant Solution Grades						
	Al	Co	Fe	Mg	Mn	Ni	Sc
(hours)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
48	14,657	373	124,489	3,250	3,802	1,002	130

## Significance of the results and next steps

The results of the two additional leaching tests show that the recovery of scandium into solution at atmospheric pressures can be significantly improved with increased acidity and the addition of NaCl as a reagent.

Having demonstrated that up to 90.1% of the scandium can be recovered into a “pregnant” solution by leaching Melrose mineralised material at atmospheric pressures, our attention is now turning to maximising the subsequent extraction of scandium (metal and / or oxide) from the pregnant solution.

Rimfire is conducting a review of existing publicly available extraction technologies and has engaged highly experienced hydrometallurgist Mr Boyd Willis as Process Consultant to guide this work.

Boyd has 40+ years’ process engineering experience, including 31 years in complex hydrometallurgical processes for base metal and scandium recovery, including 26 years in nickel laterite ore processing and 10 years in scandium hydrometallurgy. Boyd has been involved in over 30 laterite nickel projects and his experience spans project definition, process development, design and coordination of detailed testing and pilot programs, process modelling and study management up to PFS and DFS level.

To generate bulk sample material for future metallurgical studies, Rimfire has recently drilled 4 diamond drill holes (206 metres) at Melrose and is planning (subject to regulatory approval) to undertake diamond drilling at the Murga prospect late June 2024 Quarter.

Mineralised half core samples from both locations will be composited into separate bulk samples in preparation for future test work.

## Scandium Market Significance

For further information (and a downloadable Scandium Fact Sheet), readers are encouraged to visit Rimfire’s website <https://www.rimfire.com.au/scandium-the-path-to-innovative-solutions-and-sustainable-technologies>

The purchase of the Owendale Scandium Project (which lies 10 kilometres north of Murga and Melrose) by Rio Tinto Ltd.’s dedicated scandium business unit Element North 21 (<https://www.elementnorth21.com/>) highlights growing market interest in Australian scandium projects (see *Platina Resources’ ASX Announcement dated 28 April 2023*).

Renamed the “Burra Project” the acquisition aligns with Rio Tinto’s strategic goal to grow in materials essential for the low-carbon transition and as the demand for cleaner, lighter, and more durable materials continues to rise, Rio expect the use of scandium to continue to grow along



with this demand (<https://www.riotinto.com/en/news/releases/2023/rio-tinto-acquires-high-grade-scandium-project-in-australia>).

The location of Rio Tinto's Burra Project in relation to Rimfire's Fifield and Avondale Projects is shown in *Figure 1*.

The global demand for Scandium is increasing with its usage as one of the primary materials in Hydrogen electrolysis solid oxide fuel cell technology as well as being used in the manufacture of lightweight and high-strength scandium - aluminium alloys.

Scandium is included in both Australia's 2023 Critical Minerals List and the United States Geological Survey's (USGS) 2022 List of 50 mineral commodities critical to the economy and national security of both countries. (<https://www.industry.gov.au/publications/australias-critical-minerals-list> and <https://www.usgs.gov/news/national-news-release/us-geological-survey-releases-2022-list-critical-minerals>).

Incorporation of scandium in materials has environmental benefits across multiple industrial sectors, particularly in decarbonisation of energy. One pathway to mitigate greenhouse gas emissions is to generate electricity using hydrogen or synthetic liquid fuels, which are more efficient than combustion engines. This application currently represents the single largest use for scandium (<https://straitsresearch.com/report/scandium-market>).

A competing demand for scandium (that is increasing) is its usage in the manufacture of high-strength aluminium alloys. When applied as an addition to aluminium alloys, scandium can produce stronger, more corrosion resistant, and more heat tolerant, weldable and 3D printable aluminium products.

Aluminium alloys are used extensively in the global transportation industry. Aircraft manufacturers are particularly interested, with the two leading global aircraft manufacturers increasingly working to incorporate scandium aluminium alloys into their future designs and manufacturing processes. Aircraft designers believe use of these alloys can reduce aircraft weights by 15 to 20%. Additionally, the ability to employ weldable structures promises similar cost reduction potential.

It's also important to note that the United States is totally dependent on imports of scandium primarily from Europe, China, Japan, and Russia to meet its domestic needs (*USGS Scandium Fact Sheet 2022*) and as such **rising demand for scandium is supply constrained**.

Rimfire believes that advanced manufacturers are looking to secure long-term supplies of scandium within favourable jurisdictions like Australia before committing to the greater use scandium-alloyed aluminium materials in their products.

Rimfire's Fifield and Avondale Projects are ideally positioned to take advantage of the growing demand for scandium and offer significant opportunities both in terms of deposit size and grade.

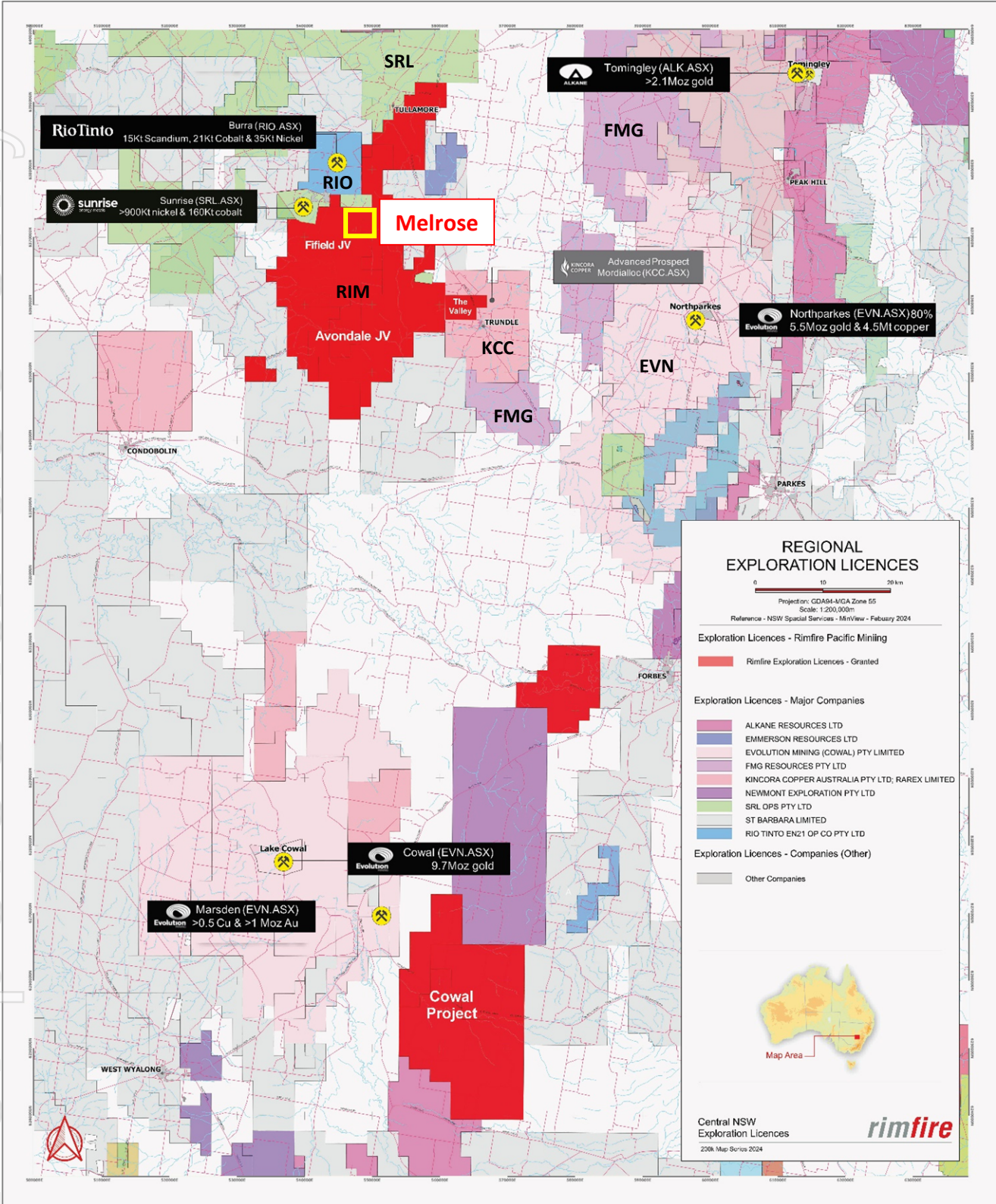


Figure 1: Rimfire Project Locations and key prospects.



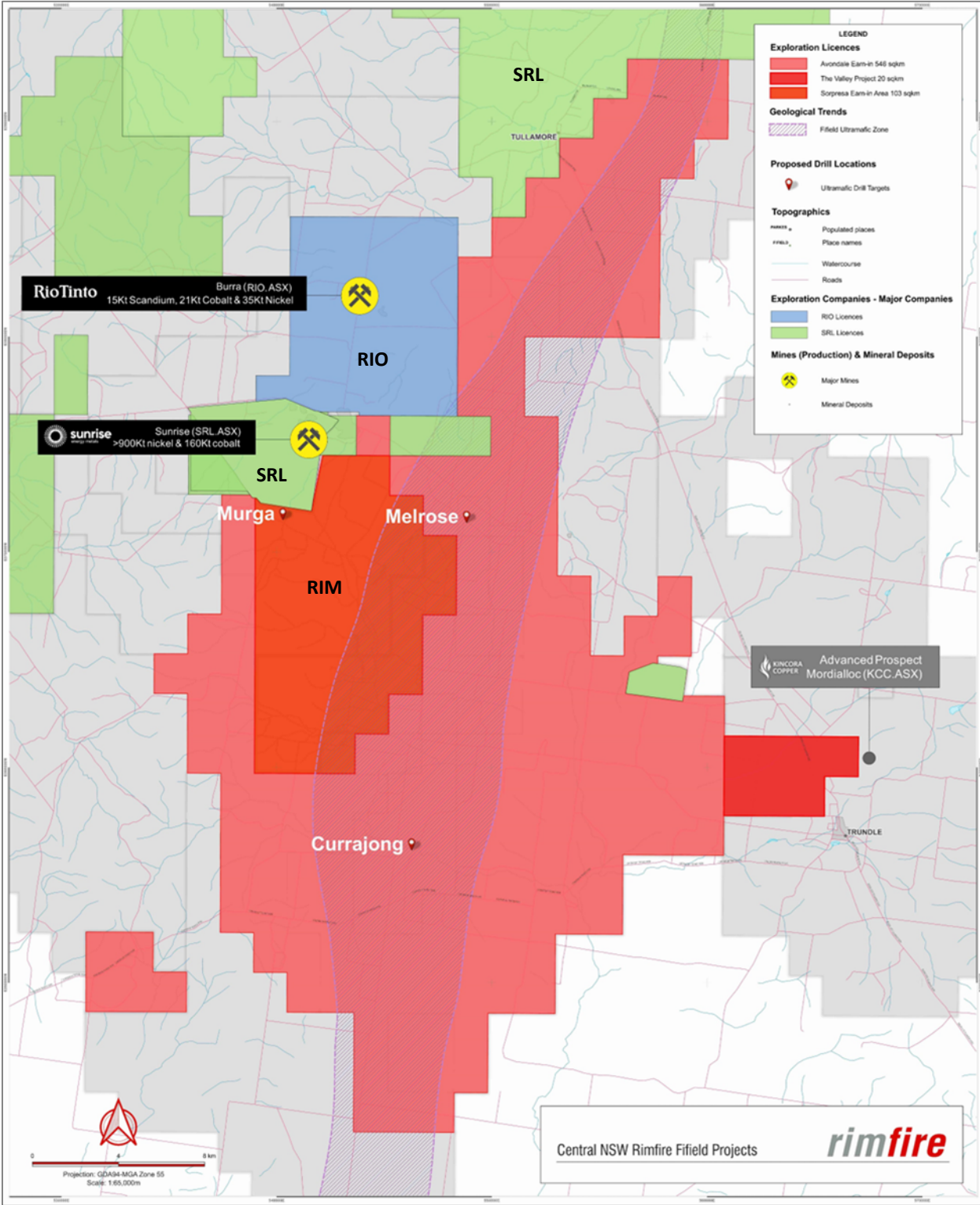
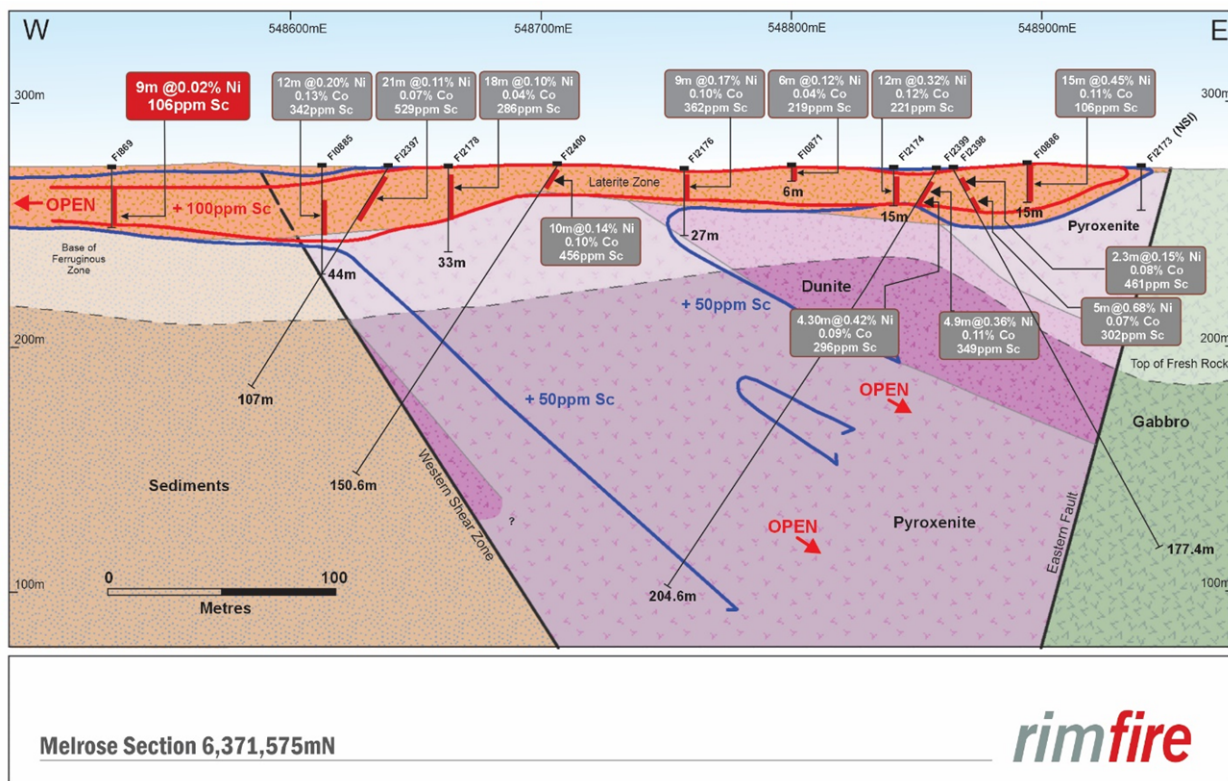


Figure 2: Rimfire Fifiel and Avondale Project Locations and competitors (Rio Tinto – blue and Sunrise Energy Metals – green).



**Figure 3: Melrose prospect geological cross section.**

This announcement is authorised for release to the market by the Board of Directors of Rimfire Pacific Mining Limited.

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## JORC Reporting

### Table 2: JORC Code Reporting Criteria

#### Section 1 Sampling Techniques and Data – Diamond Drilling and Metallurgical Test Work

Criteria	JORC Code explanation	Commentary
<p><b>Sampling techniques</b></p>	<p>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.</p>	<p>This ASX Announcement details further metallurgical test work undertaken by Rimfire Pacific Mining Limited on a bulk sample of mineralised laterite material from the Melrose nickel cobalt scandium prospect.</p> <p>The results and details of the diamond drill holes that formed the metallurgical bulk sample were previously released to the ASX in an Announcement dated 20 October 2023.</p> <p>Initial metallurgical results were previously released to the ASX in an Announcement dated 4 March 2024.</p> <p>At the time of drilling, each diamond drillhole was geologically logged and photographed. Each diamond hole was cut, and half core samples were collected and submitted to ALS Orange for analysis for precious metals (Au, Pt, Pd) using ALS method PGM MS23L and base metals (Ni, Co, Sc) using ALS methods ME-XRF12n and ME-ICP61.</p> <p>The nickel, cobalt and scandium intercepts quoted in this Report have been calculated using data obtained from the ME-XRF12n method.</p> <p>To facilitate metallurgical test work, the following 3/4 drill core intervals were collected and submitted to Independent Metallurgical Operations Ltd (IMO);</p> <ul style="list-style-type: none"> <li>• FI2397; 14 to 26.2 metres</li> <li>• FI2398; 4 to 23 metres</li> <li>• FI2399; 6 to 26 metres</li> <li>• FI2400; 5 to 12 metres</li> </ul> <p>All interval samples were combined to generate one (1) Master Composite. The Master Composite was representatively split into sub-samples in preparation for metallurgical test work.</p> <p>Analysis of metallurgical samples and leachates was conducted at Intertek Pty Ltd on behalf of IMO using the following methods;</p>



Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>Al, Co, Cr, Fe-sol, Mg, Mn, Ni, Sc, and Si by ICP/OES (mg/l) – solutions only</li> <li>Al<sub>2</sub>O<sub>3</sub>, CaO, Cr<sub>2</sub>O<sub>3</sub>, Cu, Fe<sub>2</sub>O<sub>3</sub>, K<sub>2</sub>O, LOI, MgO, MnO, MgO, Na<sub>2</sub>O, Ni, P<sub>2</sub>O<sub>5</sub>, SO<sub>3</sub>, Sc, SiO<sub>2</sub>, TiO<sub>2</sub>, and Zn (%) by lithium borate fusion and XRF (method – FB1/XRF)</li> </ul>
	Include reference to measures taken to ensure sample representativity and the appropriate calibration of any measurement tools or systems used.	<p>To ensure sample representivity, the entire drillhole has been cut and sampled for analysis. Blank samples and reference standards were inserted into the sample sequence for QA/QC.</p> <p>The sample intervals collected for metallurgical test work were deemed (on the basis of original drill hole assay data) to be representative of high-grade nickel - cobalt - scandium mineralisation based on drillhole assays.</p>
	<p>Aspects of the determination of mineralisation that are Material to the Public Report.</p> <p>In cases where ‘industry standard’ work has been done this would be relatively simple (e.g., ‘reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay’). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g., submarine nodules) may warrant disclosure of detailed information.</p>	<p>To ensure sample representivity, and because the geology of each drilling location is largely unknown (due to no previous drilling beneath the base of weathering), the entire length of each diamond drillhole was cut and sampled for analysis.</p> <p>Industry standard preparation and assay was conducted by the following parties:</p> <ul style="list-style-type: none"> <li>ALS Pty Ltd in Orange, NSW, including sample crushing and pulverising prior to subsampling for an assay sample of diamond drill core.</li> <li>Independent Metallurgical Operations Ltd (IMO) in their Perth laboratories. Crushing and splitting of metallurgical bulk sample with assaying of solids and solutions undertaken by Intertek Pty Ltd on behalf of IMO.</li> </ul>
<b>Drilling techniques</b>	Drill type (e.g., core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g., core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).	All drillholes referred to in this ASX Announcement are diamond drill holes, the specifications of which are included Rimfire’s ASX Announcement dated 4 March 2024.
<b>Drill sample recovery</b>	Method of recording and assessing core and chip sample recoveries and results assessed.	For the diamond drilling referred to in this ASX Announcement, rock quality and core recovery details were included in the geological logging procedure. All diamond drill core was photographed as well.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	To ensure sample representivity, and because the geology of each drilling location is largely unknown (due to no previous drilling beneath the base of weathering), the entire drillhole has been

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Criteria	JORC Code explanation	Commentary
		cut and sampled for analysis. To ensure sample representivity for metallurgical test work, drillhole assay and geological data was used to select high-grade mineralisation from Melrose. Also, the bulk sample that was used for metallurgical test work was a composite from four drill holes not a single hole.
	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.	It is not known whether a relationship exists between sample recovery and grade.
<b>Logging</b>	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 metallurgical studies.	Core samples were geologically and geochemically logged to a level of detail sufficient to support appropriate Mineral Resource estimation, although that was not the objective of the diamond drilling referred to in this ASX Announcement. All diamond drill core was photographed.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	Geological logging of diamond drill core is largely qualitative by nature.
	The total length and percentage of the relevant intersections logged.	Relevant intersections were geologically logged in full.
<b>Sub-sampling techniques and sample preparation</b>	If core, whether cut or sawn and whether quarter, half or all core taken.	Each diamond drillhole was geologically logged and photographed. Each diamond hole was cut, and half core samples were collected and submitted to ALS Orange for analysis. The bulk combined sample submitted to IMO comprised 3/4 core material from the diamond drillholes.
	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	Not Applicable as only core samples were obtained from the diamond drilling.
	For all sample types, the nature, quality, and appropriateness of the sample preparation technique.	For the diamond drilling, half core samples were collected and submitted to ALS for sample preparation and analysis using industry standard and appropriate techniques. For the metallurgical test work, the samples were combined to generate one (1) Master Composite.  The Master Composite was crushed to to P100 50 mm, homogenized and then representatively split into sub-samples in preparation for metallurgical test work.  This technique is considered appropriate.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	To maximise representativity of samples, individual half core samples were collected every metre throughout the entire length of the drillhole.  For the metallurgical test work, the sample preparation was conducted under the direction of

Criteria	JORC Code explanation	Commentary
		IMO staff 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.	To ensure that diamond drill core sampling was representative of the in-situ material, individual half core samples were collected every metre throughout the entire length of the drillhole. Additionally retained half core can be subsequently resampled (3/4 core) to verify initial results if needed.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	The sample sizes (typically ~ 2kg) of half core are considered appropriate to the grainsize of material being sampled.  The sample sizes (typically ~ 30kg) of crushed homogenised and split bulk sample for metallurgical test work is considered appropriate to the grainsize of material being sampled.
<b>Quality of assay data and laboratory tests</b>	The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.	The methods used by ALS to analyse the half core samples for precious and base metals are industry standard. The ME-ICP61 method is a partial technique while the XRF12n method (used for the diamond drill results in this Report is considered to be total technique.  The methods used by IMO and Intertek to analyse samples and leachates are industry standard and are considered to be total technique
	For geophysical tools, spectrometers, handheld XRF instruments (pXRF), etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.	Not applicable as no geophysical tools were used or results of using geophysical tools were included in this Report.
	Nature of quality control procedures adopted (e.g., standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e., lack of bias) and precision have been established.	Certified standards were submitted along half core samples to the laboratory. In addition, the nickel cobalt scandium diamond drilling results included in this Report were reported on the basis of the ME-XRF12n analytical method and confirmed by results obtained using the ME-ICP61 method.  Certified standards were used by Intertek whilst carrying out assaying of solids and solutions provided by IMO.
<b>Verification of sampling and assaying</b>	The verification of significant intersections by either independent or alternative company personnel.	The significant drilling intersections included in this Report have been verified by both Rimfire's Exploration Manager and Managing Director.  The metallurgical results included in this Report have been verified by Dr Andrew Dowling, who is employed by IMO as a Senior Metallurgist and who has the Competent Person for metallurgical results in this Report.

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Criteria	JORC Code explanation	Commentary
	The use of twinned holes.	Not applicable as no twinned holes drilled.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Diamond drilling data was recorded on field sheets at the sample site. Field data was entered into an excel spreadsheet and saved on Cloud server. Geological logging was recorded directly in LogChief program during drilling and backed up on Cloud server. Assay results are typically reported in a digital format suitable for direct loading into a Datashed database with a 3 <sup>rd</sup> party expert consulting group.
	Discuss any adjustment to assay data.	Metallurgical data was recorded onto worksheets and propriety databases at IMO. All relevant data was provided in hardcopy form to Rimfire along with a covering report.
	Discuss any adjustment to assay data.	There has been no adjustment to assay data.
<b>Location of data points</b>	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	Sample locations are recorded using handheld Garmin GPS with a nominal accuracy +/- 3m.
	Specification of the grid system used.	GDA94 Zone 55.
	Quality and adequacy of topographic control.	Handheld GPS, which is suitable for the early stage and broad spacing of this exploration.
<b>Data spacing and distribution</b>	Data spacing for reporting of Exploration Results.	The location and spacing of diamond drillholes discussed in this Report are given in <i>Table 1</i> and various figures of this Report
	Whether the data spacing, and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.	The data spacing and distribution of diamond drilling referred to in this Report is not sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s).
	Whether sample compositing has been applied.	As outlined in this Report, for the purposes of conducting metallurgical leaching test work, a Master Composite sample was prepared by IMO from half core samples provided by Rimfire from diamond drillholes FI2397 – FI2400.
<b>Orientation of data in relation to geological structure</b>	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	Mineralisation at Melrose occurs within a flat lying laterite horizon. Diamond holes were drilled at a high angle to the laterite. The preparation of a Master Composite sample for metallurgical work from 4 diamond drillholes effectively achieves unbiased sampling.
	If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	The relationship between the drilling orientation and the orientation of key mineralised structures is considered not to have introduced a sampling bias.
<b>Sample security</b>	The measures taken to ensure sample security.	Half core drill samples double bagged and delivered directly to the IMO laboratory via a commercial freight company.

Criteria	JORC Code explanation	Commentary
<b>Audits or reviews</b>	The results of any audits or reviews of sampling techniques and data.	The sampling techniques and data was reviewed by senior company personnel including the Exploration Manager, Managing Director and IMO personnel with no issues identified.

## Section 2 Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
<b>Mineral tenement and land tenure status</b>	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.	Reported results all from Exploration Licence EL8543 at Fifield NSW which is wholly - owned by Rimfire Pacific Mining Limited. The tenement forms part of the Company's Avondale Project which is subject to an Earn In and Joint Venture Agreement with Golden Plains Resources Pty Ltd (GPR) whereby GPR can earn up to a 75% interest by completing expenditure of \$7.5M over 4 years. All samples were taken on Private Freehold Land. No Native Title exists. The land is used primarily for grazing and cropping.
	The security of the tenure held at the time of reporting along with any known impediments to obtaining a license to operate in the area.	The tenement is in good standing, and all work is conducted under specific approvals from NSW Department of Planning and Energy, Resources and Geoscience.
<b>Exploration done by other parties</b>	Acknowledgment and appraisal of exploration by other parties.	The Melrose Prospect where the diamond drilling was conducted has not been previously explored by third parties. Rimfire undertook air core drilling at Melrose during the first half of 2022.
<b>Geology</b>	Deposit type, geological setting and style of mineralisation.	The target area lacks geological exposure, available information indicates the bedrock geology across the project is a dominated by a central body of ultramafic intrusive and stepping out to more felsic units on the margins. The deposit type/style of mineralisation is a flat lying ferruginous and laterised zone developed on top of ultramafic hosting anomalous Ni-Co-Sc. Historic drilling has shown that the host ultramafic is platiniferous.
<b>Drill hole Information</b>	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: <ul style="list-style-type: none"> <li>easting and northing of the drill hole collar</li> <li>elevation or RL of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth.</li> </ul>	All drillhole specifications are included within <i>Table 1</i> of this ASX Announcement. All collar locations are shown on the figures included with this ASX Announcement.  Details of the metallurgical test work undertaken by IMO are detailed in this Report.



Criteria	JORC Code explanation	Commentary
	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 explain why this is the case.	Not applicable as no drill hole information has been excluded.
<b>Data aggregation methods</b>	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g., cutting of high grades) and cut-off grades are usually Material and should be stated.	The following low cut off grades have been used in determining the reported drill hole intercepts. No top cuts have been used. <ul style="list-style-type: none"> <li>Nickel (1,000 ppm – 0.1%)</li> <li>Cobalt (500 ppm – 0.05%)</li> <li>Scandium (150 ppm – 0.015%)</li> </ul>
	Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low-grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.	Length weighting has been applied when calculating intercepts for drill hole intervals that are not made up of equal sample lengths. The length weighting formula is as follows: Length weighted grade equals the sum of all the individual assay values multiplied by their respective sample lengths, divided by the sum of the sample lengths.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No metal equivalents have been reported. Where an intercept quotes a platinum + palladium value (Pt + Pd), the value is simply the sum of the individual platinum value and the individual palladium value for respective samples.
<b>Relationship between mineralisation widths and intercept lengths</b>	These relationships are particularly important in the Reporting of Exploration Results.	The drill results included in this Report occur within a flat (horizontal) lying zone and given all the diamond drill holes are angled, the significant intercepts are considered to represent downhole widths.
	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 (e.g., 'down hole length, true width not known').	
<b>Diagrams</b>	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.	Included within this Report
<b>Balanced reporting</b>	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced avoiding misleading reporting of Exploration Results.	All results are included in this Report.

Criteria	JORC Code explanation	Commentary
<b>Other substantive exploration data</b>	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.	There is currently no other substantive exploration data that is meaningful and material to report.
<b>Further work</b>	The nature and scale of planned further work (e.g., tests for lateral extensions or depth extensions or large-scale step-out drilling).	Planned further work is discussed in this Report but will comprise further metallurgical test work and JORC Resource drilling at Melrose.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Not applicable at this stage

## About Rimfire

Rimfire Pacific Mining (**ASX: RIM**, “Rimfire” or the “Company”) is an ASX-listed Critical Minerals exploration company which is advancing a portfolio of projects within the highly prospective Lachlan Orogen and Broken Hill districts of New South Wales, comprising;

The 100% - owned Broken Hill Cobalt Project located immediately west of Broken Hill, NSW and includes;

- Bald Hill, where Rimfire’s recent drilling successfully intersected high-grade cobalt (Co) in sulphide mineralisation - see *Rimfire ASX Announcement dated 18 September 2023 [Broad zones of high-grade cobalt at Bald Hill](#)*, and
- Railway Extension, which is interpreted along strike extension to Cobalt Blue Holdings’ Railway Cobalt Deposit (COB: ASX).

The 100% - owned Valley and Cowal Projects located west of Parkes and Orange in central NSW:

- The Valley Project - located 35km west of the Northparkes Copper Gold Mine where Evolution Mining (EVN: ASX) has just acquired an 80% interest in the mining operation for up to US\$475M – see *Evolution Mining ASX Announcement dated 5 December 2023 [Acquisition of an 80% interest in Northparkes Copper Gold Mine](#)*, and
- The Cowal Project - located to the east of Evolution’s Lake Cowal Copper / Gold mine (EVN: ASX), which includes the newly acquired Porters Mount Project - see *Rimfire ASX Announcement dated 11 September 2023 [Acquisition of Porters Mount Project](#)*

Rimfire has two additional projects in the Lachlan Orogen which are being funded by Rimfire’s exploration partner - Golden Plains Resources (GPR):

- Avondale Project (GPR earning up to 75%) & Fifield Project (GPR earning up to 50.1%)
- ✓ Both projects are prospective for high-value critical minerals – scandium, cobalt, nickel, gold, and PGEs - which are essential for renewable energy, electrification, and green technologies.
- ✓ Adjacent to both projects is the;
  - development ready Sunrise Energy Metals Nickel Cobalt Scandium Project (ASX:SRL), and

- Platina Scandium Project (Owendale Scandium Deposit), which was acquired by Rio Tinto (ASX:RIO) – see *RIO News Release dated 28 April 2023* [Rio Tinto acquires high-grade scandium project in Australia](#)
- ✓ The Fifield Project hosts the historic Platina Lead mine, the largest historic producer of Platinum in Australia.

For more information on the Avondale and Fifield Earn In and Joint Venture Agreements see:

[ASX Announcement: 4 May 2020 - Rimfire enters \\$4.5m Earn-in Agreement](#)

[ASX Announcement: 25 June 2021 - RIM Secures \\$7.5m Avondale Farm Out](#)

## **Competent Persons Declaration**

The information in this announcement that relates to **metallurgy and metallurgical test work** has been reviewed by Dr Andrew Dowling. Dr Dowling is not an employee of the Company but is employed by Independent Metallurgical Operations (IMO) who are providing services as a consultant.

Dr Dowling is a fellow of the AusIMM (FAusIMM) and has sufficient experience with the style of processing response and type of deposit under consideration, and to the activities undertaken, to qualify as a competent person as defined in the 2012 edition of the “Australian Code for the Reporting of Exploration 21 Results, Mineral Resources and Ore Reserves” (The JORC Code).

Dr Dowling consents to the inclusion in this report of the contained technical information in the form and context as it appears.

The information in the report to which this statement is attached that relates to **Exploration and Resource Results** is based on information reviewed and/or compiled by David Hutton who is deemed to be a Competent Person and is a Fellow of The Australasian Institute of Mining and Metallurgy.

Mr Hutton has over 30 years’ experience in the minerals industry and is the Managing Director and CEO of Rimfire Pacific Mining. Mr Hutton has sufficient experience that is relevant to the style of mineralisation and type of deposits under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the ‘Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves’.

Mr Hutton consents to the inclusion of the matters based on the information in the form and context in which it appears.

## **Forward looking statements Disclaimer**

This document contains “forward looking statements” as defined or implied in common law and within the meaning of the Corporations Law. Such forward looking statements may include, without limitation, (1) estimates of future capital expenditure; (2) estimates of future cash costs; (3) statements regarding future exploration results and goals.

Where the Company or any of its officers or Directors or representatives expresses an expectation or belief as to future events or results, such expectation or belief is expressed in good faith and the Company or its officers or Directors or representatives, believe to have a reasonable basis for implying such an expectation or belief.

However, forward looking statements are subject to risks, uncertainties, and other factors, which could cause actual results to differ materially from future results expressed, projected, or implied by such forward looking statements. Such risks include, but are not limited to, commodity price fluctuation, currency fluctuation, political and operational risks, governmental regulations and judicial outcomes, financial markets, and availability of key personnel. The Company does not undertake any obligation to publicly release revisions to any “forward looking statement”.