ASX ANNOUNCEMENT



BANGEMALL CONFIRMED AS NEW NICKEL-COPPER PROVINCE - AMENDED

- Micro-XRF analysis highlights disseminated pentlandite and chalcopyrite in multiple drill holes at the Mount Vernon Ni-Cu-Co-PGE Project
- Bangemall confirmed as a major new mafic-hosted magmatic nickel-copper-PGE province in which Miramar has a dominant land position

Miramar Resources Limited (ASX:M2R, "Miramar" or "the Company") is pleased to advise that further mineralogical analysis of samples from EIS co-funded RC drilling at the Company's 100%-owned Mount Vernon Project has confirmed the presence of disseminated nickel (Ni) and copper (Cu) sulphides (pentlandite and chalcopyrite respectively) in multiple drill holes.

Miramar's Executive Chairman, Mr Allan Kelly said the new data confirmed the Bangemall as a major new nickel-copper mineral province with the potential to host large mafic-hosted magmatic Ni-Cu-Co-PGE sulphide deposits and where Miramar has first-mover status and a dominant land position.

"We targeted the Bangemall region on the basis of several regional-scale data sets which indicated the potential for Norilsk-style mafic intrusion hosted magmatic Ni-Cu-Co-PGE mineralisation," he said.

"We now have proof that an extensive volume of mafic magma carrying nickel and copper has assimilated sulphate minerals and then undergone differentiation to produce mafic cumulate rocks containing disseminated nickel and copper sulphides," he said.

"This new data shows that the same processes that formed the giant Norilsk deposits in Siberia have also occurred within the Bangemall region," he added.

"Now that we have proven our initial concepts, the aim is to find out where those sulphides have may accumulated to form an economic mineral deposit," he said.



Figure 1. Mount Vernon Project showing drill holes and nickel and copper sulphide occurrences.



Micro-XRF analysis

Following the successful trial of "Micro-XRF" analysis on selected samples from the EIS co-funded RC drilling programme completed at Mount Vernon in August 2024, the Company has completed systematic analysis on a suite of 159 samples across 7 of the 9 holes drilled at Mount Vernon.

The 159 samples were selected on the basis that they contained "mafic cumulate" rocks and are a subset of drill samples that were assayed and previously reported to the ASX in October 2024.

The aim of the analysis was to determine the major mineralogy of the samples including olivine, pyroxenes, plagioclase and sulphides, and determine any trends in that mineralogy.

For each 1-meter sample, approximately 50g of material was selected, which normally comprised 2-3 large RC drill chips. The samples are mounted in a plastic tray containing sugar with no other sample preparation required. The cell size for each sample is approximately 2cm x 3cm.

The "M4 Tornado Plus" unit scans each sample using with a resolution of 100um, giving several thousand readings per sample, with a 30ms dwell time per reading.

The Tornado unit records the spectra for each reading and then converts those spectra to elemental and mineralogical data which is used to create a 2-dimensional "map" of the sample showing all minerals present. The data from each sample is then summarised to produce mineral percentages for each sample which, in the case of drill samples, can then be plotted downhole.



Figure 2. shows an example of Micro-XRF data for MVRC003 (80-81m).

Figure 2. Example Micro-XRF data for MVRC003 (80-81m) showing sample photograph, mineral "map" and mineral abundances. (Field of view is approximately 2cm x 3cm).



The new Micro-XRF results highlight the presence of fine disseminated pentlandite and chalcopyrite, along with more abundant pyrrhotite, in multiple samples across all 7 holes analysed.

Figure 3 shows a summary of pentlandite and chalcopyrite results for all 7 holes, with the previously reported Ni and Cu assay results shown in Figure 4 for comparison.

The average ratio of chalcopyrite to pentlandite is roughly 3:1, which is similar to that seen at Norilsk, and there is zonation of the sulphides downhole which is consistent with differentiation of the dolerite sills and also similar to that seen at Norilsk.



Figure 3. Micro-XRF data showing pentlandite and chalcopyrite downhole (in wt%). (Note that only samples containing mafic cumulate rocks were analysed by Micro-XRF).

Analysis of the major mineralogy shows that most of the mafic cumulate samples can be classified as "olivine gabbronorite" (Figure 5), which has formed through the differentiation of the dolerite sills and, significantly, is the same lithology that hosts the large Nebo-Babel Ni-Cu-Co-PGE deposits in the West Musgraves of Western Australia.

In addition, samples from several holes contain gypsum, in some cases up to 7.5%, which appears to have been assimilated from evaporite sediments (stromatolitic dolomite etc) that the dolerite sills have intruded through before final emplacement and crystallisation.

Along with sulphides such as pyrite, sulphate minerals such as gypsum and anhydrite are thought to be key sources of the external sulphur needed to form Norilsk-style nickel-copper sulphide deposits.





Figure 4. Nickel and copper assay results (4-acid/IPMS) for the 7 holes analysed by Micro-XRF.



Figure 5. Classification of all 159 samples using olivine(OI), plagioclase (Plag) and pyroxene (Px), and showing most samples plotting as "olivine gabbronorite"

The new data confirms that the mafic magma which created the dolerite sills has carried nickel and copper sulphides (pentlandite and chalcopyrite), whilst the presence of mafic cumulate rocks indicates the potential for depositional sites where these nickel-copper sulphides could have accumulated into a significant deposit (Figure 6).

This data shows that the same processes that formed the giant Norilsk deposits in Siberia have apparently also occurred within the Bangemall region, as postulated by the GSWA (Figure 7), and confirms the Bangemall as a new Proterozoic mafic-hosted magmatic nickel-copper province with the potential to host multiple large deposits (Figure 8).

Miramar was the first-mover in the Bangemall and has secured a dominant landholding in the region.



Next Steps

The Company has now proved its initial concepts about the Bangemall and is excited about the potential to discover a large mafic-hosted magmatic Ni-Cu-Co-PGE deposit within its Bangemall tenement holding.

Further work is planned including:

- Signing up to the CSIRO's "Indicator Minerals for Magmatic Nickel Sulphides" Study
- Applying for EIS funding for detailed magnetic and electromagnetic surveys to cover Trouble Bore and the recently granted tenement applications
- Completing a diamond drill hole at the high-priority Trouble Bore EM target, which was previously co-funded under Round 29 of WA Government's Exploration Incentive Scheme (EIS)

For more information on Miramar Resources Limited, please visit the company's website at <u>www.miramarresources.com.au</u>, follow the Company on social media (Twitter @MiramarRes and LinkedIn @Miramar Resources Ltd) or contact:

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This announcement has been authorised for release by Mr Allan Kelly, Executive Chairman, on behalf of the Board of Miramar Resources Limited.

Reference:

Barnes, S. J. Cruden, A. R., Arndt, N. and Saumur, B., 2015 "*The mineral system approach applied to magmatic Ni-Cu-PGE sulphide Deposits.*" Ore Geology Reviews.

Morris, P. A., and Pirajno F., 2005, "Mesoproterozoic sill complexes in the Bangemall Supergroup, Western Australia: geology, geochemistry, and mineralization potential" GSWA, Report 99.





Figure 6. Schematic cross-section of a mafic dike-sill system, showing development of Noril'sk-style Ni-Cu-Co-PGE mineralisation. (after Barnes et al, 2015)



Figure 7. Schematic longitudinal section of the Warakurna Large Igneous Province (LIP) showing potential for various mineral deposit types (Morris and Pirajno, 2005).





Figure 8. Archaean cratons (pink) and surrounding Proterozoic orogens of Western Australia showing mafic intrusion hosted magmatic Ni-Cu-Co-PGE deposits.



About Micro-XRF Analysis (Source: Portable Spectral Services)

Samples were analysed using a Bruker M4 TORNADO PLUS micro-XRF system under a 2-mbar vacuum. The scanning parameters included a 100-micron step size per pixel with a 30 ms/pixel dwell time. The system operated at 50 keV and 600 μ A with a Rh anode X-ray tube. Elemental fluorescence data was processed using AMICS (Automated Mineral Identification and Characterization System) to classify and quantify mineral phases.

Randomly selected sub-samples were analysed loose and unprepared, with no crushing, powdering, or polishing, ensuring non-destructive analysis and preserving sample integrity.

Analyses were conducted alongside Portable Spectral Services' (PSS) internal reference materials, and the instrument is calibrated weekly to Bruker factory settings to ensure consistency and accuracy.

The micro-XRF system detects elements in the range of Na to U, with AMICS processing enabling automated mineral classification and quantification of mineral area percentages.

The combination of micro-XRF and AMICS provides high-resolution, mineral-specific data, enhancing the understanding of mineralogical compositions and associations. While micro-XRF does not directly measure elemental concentrations in weight percent, AMICS delivers mineral classification and area quantification, offering valuable contextual information for resource evaluation.

The non-destructive nature of the analysis allows for sample reanalysis and integration with other analytical techniques where required. Potential spectral overlaps and matrix effects are mitigated through AMICS processing and systematic calibration protocols.



COMPETENT PERSON STATEMENT

The information in this report that relates to Exploration Targets or Exploration Results is based on information compiled by Allan Kelly, a "Competent Person" who is a Member of The Australian Institute of Geoscientists. Mr Kelly is the Executive Chairman of Miramar Resources Ltd. He is a full-time employee of Miramar Resources Ltd and holds shares and options in the company.

Mr Kelly 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 Kelly consents to the inclusion in this Announcement of the matters based on his information and in the form and context in which it appears.

Information on historic and recent exploration results from the Bangemall Projects, including JORC Table 1 and 2 information where applicable, was included in the following ASX Announcements:

- 12 December 2024 "Nickel & Copper Sulphides Confirmed at Mount Vernon"
- 31 October 2024 "Bangemall Project Exploration Update"
- 10 September 2024 "Bangemall Project Update"
- 16 August 2024 "EIS Co-Funded Drilling Underway at Bangemall Projects"
- 29 April 2024 "Miramar Secures EIS Funding for Bangemall Ni-Cu-Co-PGE Drilling"
- 19 March 2024 "Bangemall Ground EM Surveys Outline Multiple Drill Targets"
- 6 March 2024 "Strong EM Conductors Identified at Mt Vernon Project"
- 22 February 2024 "Bangemall Ni-Cu-PGE Exploration Update"
- 13 February 2024 "Multiple EM Conductors Outlined at Mount Vernon"
- 8 February 2024, "Multiple Large Uranium Targets in Bangemall"
- 5 February 2024 "Bangemall Exploration Update"
- 15 January 2024 "Ground EM Survey Underway at Mount Vernon"
- 2 January 2024 "Tenement Grant Expands Bangemall Project"
- 24 July 2023 "Approval Received for Mount Vernon Drilling"
- 17 July 2023 "Gascoyne Projects Update"
- 21 June 2023 Gascoyne Projects Funded Following Capital Raising"
- 25 May 2023 "High-Priority Ni-Cu-PGE Targets Identified at Mt Vernon"
- 14 March 2023 "Gascoyne Plans Finalised Following Capital Raising"
- 9 March 2023 "Gascoyne Region Exploration Update"
- 17 January 2023 "Multiple Large REE Targets Identified at Dooley Downs"
- "14 November 2022 "Large REE Targets Identified at Dooley Downs"
- 3 October 2022 "Diamond occurrence & uranium targets identified at Bangemall"
- 12 June 2022 "New Ni-Cu-PGE targets identified at Bangemall"
- 3 February 2022 "Multiple Large EM Anomalies Identified at Mt Vernon"
- 25 January 2022 "EM Survey Commenced at Bangemall Ni-Cu-PGE Target"
- 1 September 2021 "Multiple EM Conductors Identified within Bangemall Project"
- 6 January 2021 "Bangemall Ni-Cu-PGE Project Tenement Granted"



About the Bangemall Projects

Miramar's 100%-owned Bangemall Project comprises granted Exploration Licences and Applications covering approximately 1,230 km² within the Gascoyne region of Western Australia.

The Proterozoic Edmund and Collier Basins have been intruded by numerous 1070Ma aged Kulkatharra Dolerite sills, part of the Warakurna Large Igneous Province, and the same age as the Giles Complex which hosts the large Nebo and Babel Ni-Cu deposits in the West Musgraves.

The region has been identified by the Geological Survey of Western Australia, Geoscience Australia and the CSIRO as having high prospectivity for Ni-Cu-PGE mineralisation associated with the Kulkatharra Dolerite sills, similar to the giant Norilsk-Talnakh Ni-Cu-PGE deposits in Russia.

Since 2020, Miramar has built a strategic land position in the Bangemall region, focussing on areas containing key ingredients and/or regional-scale indicators for Proterozoic mafic intrusion hosted Ni-Cu-PGE mineralisation including:

- 1070Ma Kulkatharra Dolerite sills source of Ni, Cu +/- PGE's
- Proximity to major crustal-scale faults potential plumbing systems
- Sulphidic and/or evaporitic sediments potential sulphur source
- Regional-scale geochemical anomalism (GSWA regional geochemistry)
- Regional-scale EM anomalism (2013 Capricorn AEM Survey)





About Miramar Resources Limited

Miramar Resources Limited is an active, WA-focused mineral exploration company exploring for gold, copper and Ni-Cu-PGE deposits in the Eastern Goldfields and Gascoyne regions of WA.

Miramar's aims to create shareholder value through discovery of high-quality mineral deposits and the Company's Board has a track record of discovery, development and production within Australia, Africa, and North America.





JORC 2012 Table 1 – Bangemall Micro-XRF Analysis

Section 1 Sampling Techniques and Data

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

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. In cases where 'industry standard' work has been done this would be relatively simple (eg '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 (eg submarine nodules) may warrant disclosure of detailed information. 	 Individual samples selected from RC sample chip trays 159 samples selected from sections of mafic cumulate rocks in 7 drill holes Approximately 50g of material selected for each sample
Drilling techniques	 Drill type (eg core, reverse circulation, openhole 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). 	RC drilling with hammer bit
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. 	Sample recovery was generally excellent
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 metallurgical studies. Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. The total length and percentage of the 	 Samples were logged for colour, weathering, grain size, geology, alteration and mineralisation where possible

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Criteria	JORC Code explanation	Commentary
	relevant intersections logged.	
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. 	 Samples originally collected from 1m sample piles to achieve approximately 3kg of sample Sub-samples for Micro-XRF were randomly selected from chip trays with approximately 50g per sample No sample preparation has been completed
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 were previously assayed a four- acid digest followed by ICP-MS for multi- element suite and by 50g fire assay for Au, Pt and Pd and reported on in October 2024 QAQC samples were inserted at frequency of 4 QAQC samples (i.e. standard, blank duplicate) per 100 samples 159 samples were selected for Micro-XRF analysis See comments in "About Micro-XRF Analysis" M4 Tornado Plus 100um reading size 30ms dwell time per reading Total sample size 2cm x 3cm
Verification of sampling and assaying	 The verification of significant intersections by either independent or alternative company personnel. The use of twinned holes. Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. Discuss any adjustment to assay data. 	No verification completed
Location of data points	 Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. Specification of the grid system used. Quality and adequacy of topographic control. 	 Hole collar locations were recorded with a handheld GPS in MGA Zone 51S RL was also recorded with handheld GPS but accuracy is variable Information previously reported on 31 October 2024
Data spacing and distribution	 Data spacing for reporting of Exploration Results. Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. Whether sample compositing has been 	 Single RC holes were drilled across various EM anomalies The hole spacing is not sufficient for calculation of a Mineral Resource or Ore Reserve\No sample compositing occurred



Criteria	JORC Code explanation	Commentary
	applied.	
Orientation of data in relation to geological structure	 Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. 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. 	 Drill holes were angled perpendicular to the trend of the main geological units and parallel to previous drill lines. It is highly likely that the mineralized structures trend at a different orientation to the regional geology
Sample security	The measures taken to ensure sample security.	Samples were transported from site directly to the laboratory by Miramar staff
Audits or reviews	 The results of any audits or reviews of sampling techniques and data. 	No audits have been undertaken

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
<i>Mineral tenement and land tenure status</i>	 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. 	 The exploration was conducted on E52/3893 which is owned 100% by MQ Minerals Pty Ltd MQ Minerals Pty Ltd is a wholly owned subsidiary of Miramar Resources Limited
Exploration done by other parties	 Acknowledgment and appraisal of exploration by other parties. 	 Limited historical RC drilling has been conducted for sediment-hosted Pb-Zn mineralisation
Geology	 Deposit type, geological setting and style of mineralisation. 	 The target is Norilsk-style magmatic intrusion hosted Ni-Cu-Co-PGE mineralisation
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. 	 Location of drill holes previously reported in ASX announcement on 31 October 2024 Figure 3 shows downhole Micro-XRF data for all samples showing depth and weight % of pentlandite and chalcopyrite Figure 4 shows previously reported assay data for samples re-analysed by Micro- XRF for comparison

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Criteria	JORC Code explanation	Commentary
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 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. 	 Figure 3 shows pentlandite and chalcopyrite results for all samples
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'). 	Unknown at this stage
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. 	 Figure 1 shows location of all drilling See Figure 3 and 4 for downhole XRF and assay data
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 to avoid misleading reporting of Exploration Results. 	 Figure 3 shows all results for pentlandite and chalcopyrite Figure 4. shows all nickel and copper results
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 other relevant data
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. 	 Further RC, diamond drilling and geophysical surveys planned