ASX: **M2R** | 27 November 2024

ASX ANNOUNCEMENT

SEDEX MINERALISATION CONFIRMED AT CHAIN POOL

- **Soil sampling outlines 700m long geochemical anomaly with similarities to known Sedimentary Exhalative (SEDEX) deposits**
- **Several key indicators for significant SEDEX mineralisation including location on major global-scale geological feature**

Miramar Resources Limited (ASX:M2R, "Miramar" or "the Company") is pleased to advise that soil sampling at the Chain Pool Project, in the Gascoyne region of Western Australia, has outlined a 700m long anomaly at the Joy Helen prospect which exhibits similarities to known Sedimentary Exhalative (SEDEX) Pb-Zn-Ag deposits including the high-grade Lady Loretta deposit in Queensland.

Miramar's Executive Chairman, Mr Allan Kelly said the Chain Pool Project was also located close to a major global-scale geological feature which is also known to host all large SEDEX base metal deposits in Australia (Figure 1).

"We originally pegged the Chain Pool Project due to the presence of mapped Durlacher Supersuite granite, which is the same unit that hosts the Yangibana and YIN rare earth deposits, but we quickly realised the potential for other deposit types," he said.

"Our initial rock chip sampling confirmed the historic high-grade mineralisation at Joy Helen and now, the results of our recent soil sampling have almost doubled the potential strike length of the prospect," he said.

"Significantly, recent data collected at Chain Pool compares favourably with published data from known SEDEX deposits," he said.

"We look forward to systematically progressing the opportunity at Chain Pool," he said.

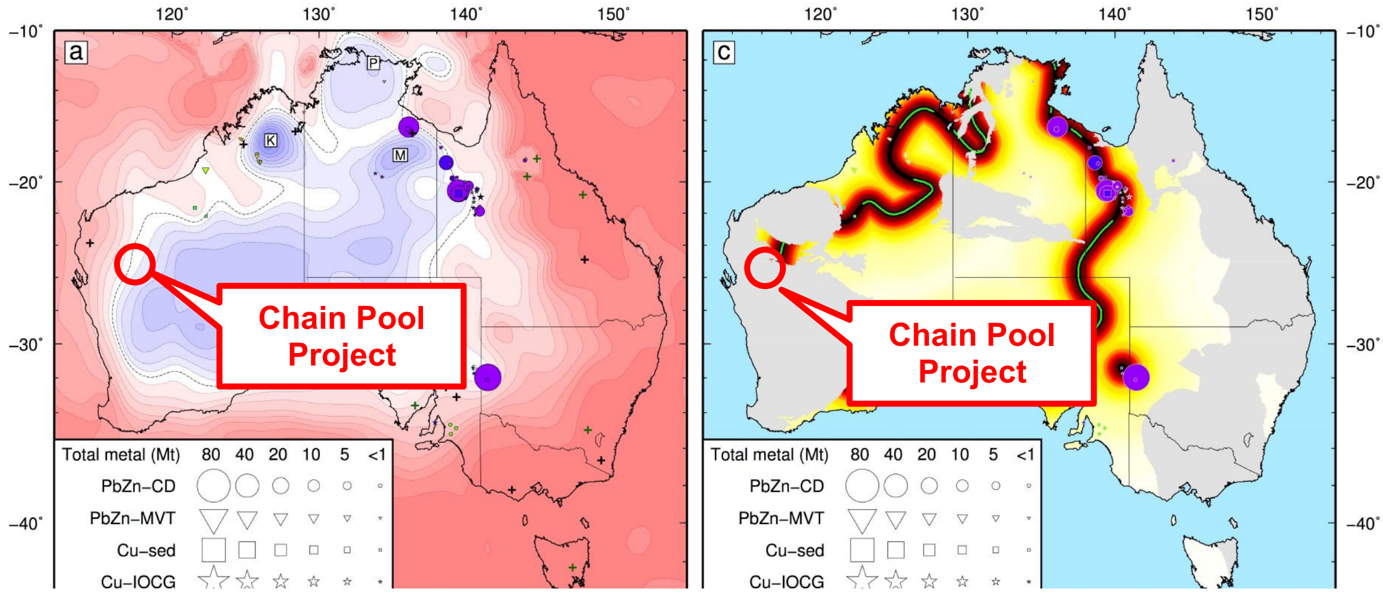

***Figure 1.** Distribution of sediment-hosted (and IOCG) deposits in relation to lithospheric thickness. (a) Australian Lithosphere/Asthenosphere Boundary (LAB): dashed contour = 170 km LAB depth, (c) Mineral potential heat map based on proximity to the 170 km LAB contour (Czarnota et al, 2020).*

Soil sampling results

The Company recently completed a grid soil survey at the Chain Pool Project which aimed to outline the potential extent of sediment-hosted copper-lead-silver-zinc mineralisation at the Joy Helen workings.

Soil samples were collected at a 50m spacing along 100m-spaced east-west lines, roughly perpendicular to the assumed strike direction of the mineralisation, based on the orientation of the historic workings and limited published data.

The results highlighted anomalism in several elements commonly associated with SEDEX mineralisation.

Copper (Cu) and Lead (Pb) form large anomalies to the west of the workings (Figure 2). Given the mineralisation is apparently sub-horizontal and dips gently to the WNW, it is possible that these elements are highlighting mineralisation down-dip and beneath shallow cover.

Manganese Oxide (MnO) and Thallium (Tl) outline NE-trending anomalies (Figure 3).

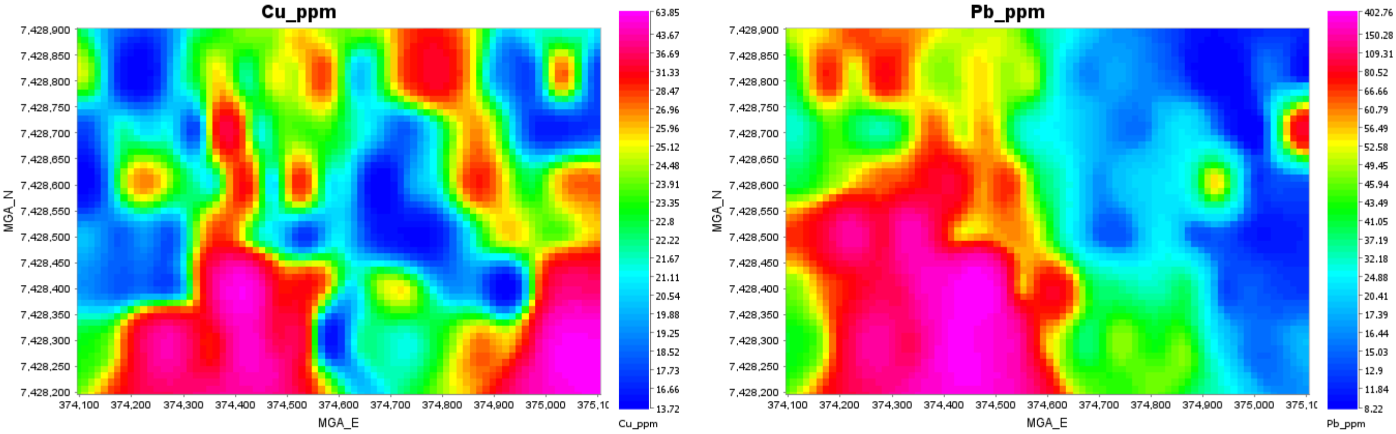

Figure 2. *Gridded soil results for Cu and Pb.*

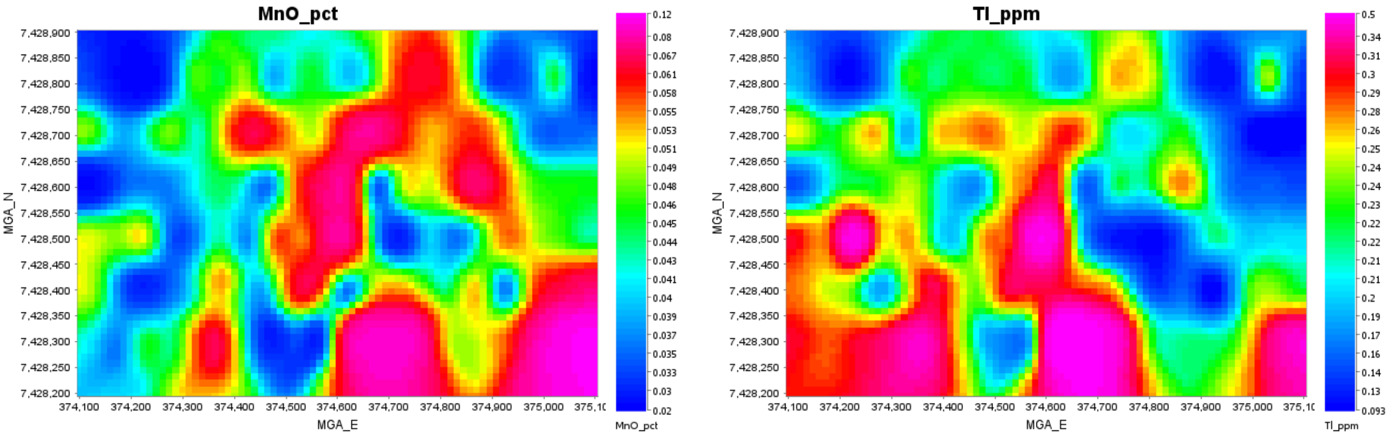

Figure 3. *Gridded soil results for MnO and Tl.*

Comparisons with the Lady Loretta Zn-Pb-Ag deposit

Data from the recent soil survey at Chain Pool has been compared with published data from the high-grade Lady Loretta sediment-hosted Zn-Pb-Ag deposit in Queensland.

The Lady Loretta deposit was discovered in 1969 by diamond drilling which intersected 7.6 m of 21.2% Pb beneath a Pb-Zn-Ag soil anomaly (Cox et al, 1977).

According to Large and McGoldrick (1998): "*the Lady Loretta orebody is surrounded by a zinc-rich siderite halo up to 50m thick which gives way to an ankerite/ferroan dolomite halo a further 50-100m away, followed by low-iron dolomitic sediments*".

The Chain Pool soil samples have been classified as "sideritic", "ankeritic" or "dolomitic" based on their multi-element geochemistry, and, when plotted, the sideritic halo forms a coherent northeast-trending zone which follows the line of workings and continues towards the historic high-grade sample within the Nature Reserve (Figure 4).

As observed at Lady Loretta, the siderite halo is surrounded by a broader ankerite halo.

Like Lady Loretta, at Chain Pool:

- CaO and MgO values both show depletion within the siderite halo, whilst FeO is enriched
- MnO and Tl outline NE- trending anomalies following the siderite halo (Figure 3)

At Lady Loretta, Large and McGoldrick developed two indices that could be used as geochemical vectors towards SEDEX deposits:

- "SEDEX Metal Index" - defined as Zn + (100 x Pb) +(100 x Tl)
- "SEDEX Alteration Index" – defined as (FeO + (10 x MnO)/100) / (FeO + (10 x MnO) + MgO)

They proposed that these two indices could be used to identify favourable sedimentary units and/or provide vectors towards ore, as summarised in Table 1.

Table 1. Summary of geochemical vectors from Lady Loretta Deposit (Large et al, 1998)

Factor	Dominant carbonate	Zn	Pb	MnO	Tl	Alteration Index	Metal Index
Identification of favourable sedimentary units		>70ppm		>0.2%	>4ppm	>40	>3000
Dolomite halo	dolomite	<30ppm	<20ppm	<0.01%	<2ppm	10-40	<3000
Ankerite halo	ankerite	20-200ppm	<70ppm	0.01–0.04%	2-50ppm	38-60	2000-7000
Siderite halo	siderite	100ppm to 5%	10-1000	0.01-0.11%	2-50ppm	60-100	2000-30,000
Zn-Pb ore	siderite	>5%	>1000	0.1-0.4%	>50ppm	80-100	>80,000

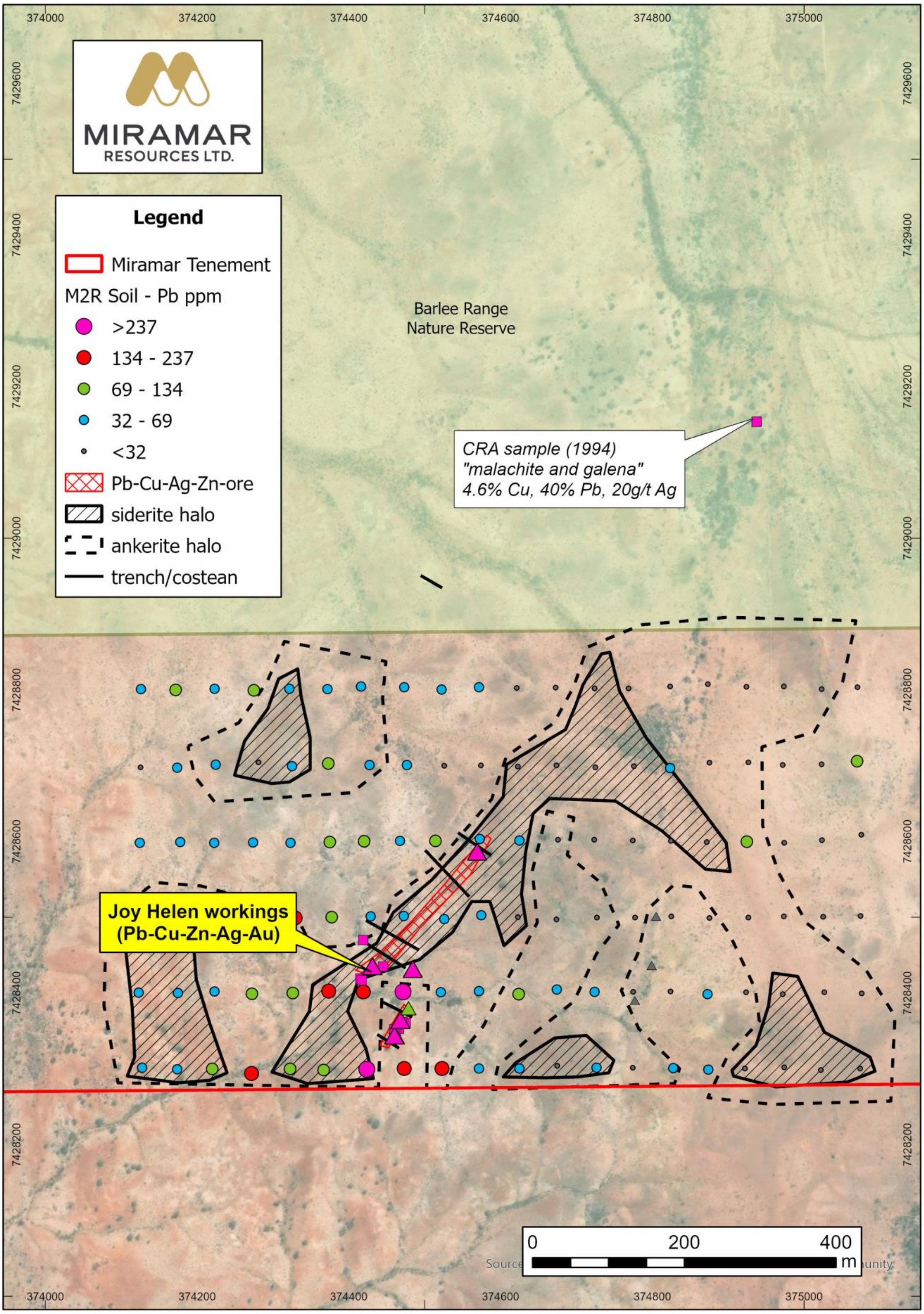

Figure 4. *Joy Helen prospect showing carbonate alteration halos and lead (Pb) in soils.*

At Chain Pool:

- the SEDEX Metal Index anomaly threshold is approximately 5000, indicating a favourable sedimentary unit and proximity to ore, but is truncated just northeast of the workings (Figure 5).
- the "SEDEX Alteration Index" forms a northeast trending anomaly with a threshold of approximately 80, above a background of 40 (Figure 6), and mirrors the siderite halo shown in Figure 4.

Together, the two indices suggest that the high-grade Joy Helen copper-lead-silver-zinc mineralisation may continue to the northeast under cover where it has not yet been tested with drilling.

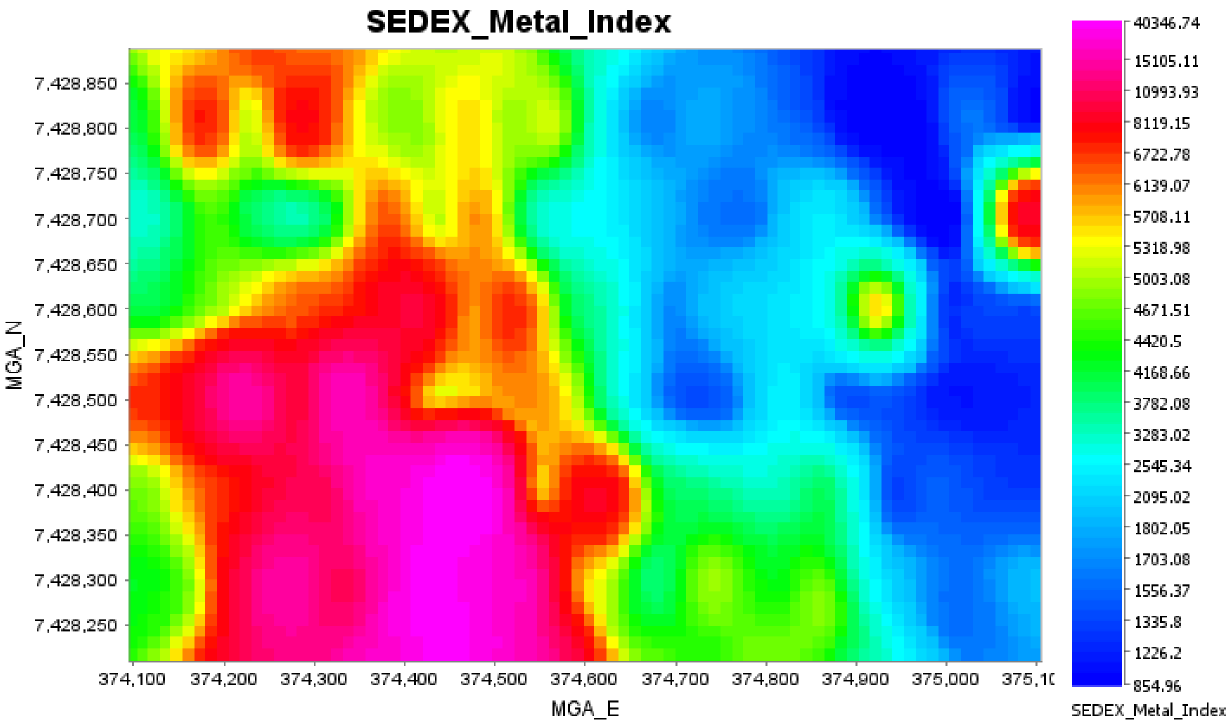

Figure 5. *Gridded "SEDEX Metal Index".*

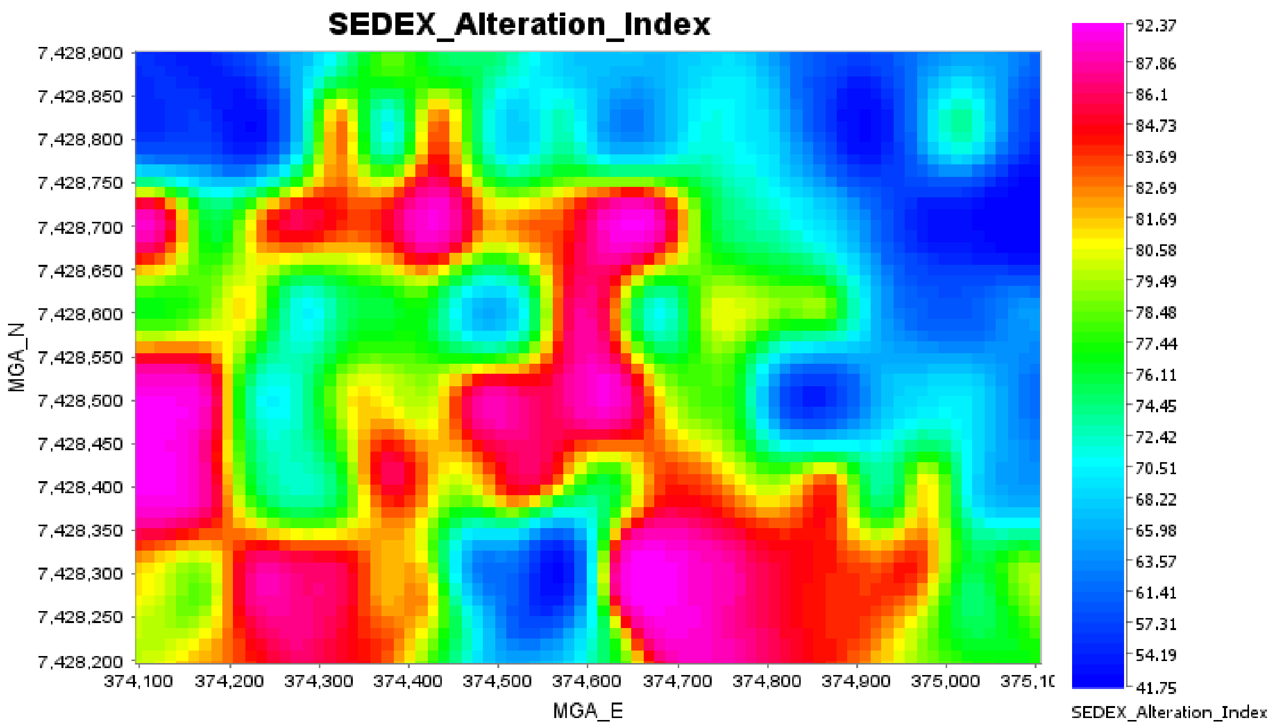

Figure 6. *Gridded "SEDEX Alteration Index".*

SEDEX deposits and key targeting criteria

Sedimentary Exhalative (SEDEX) base metal deposits constitute many of the world's great ore deposits, including the Sullivan mine in Canada, Cannington, George Fisher, Mount Isa, and HYC in Australia, Red Dog in Alaska, and Rammelsberg in Germany.

The deposits are characterized by beds and laminations of sulphides that commonly comprise sphalerite, galena, pyrite and pyrrhotite +/- chalcopyrite and barite.

SEDEX deposits occur in rift-generated sedimentary basins, represented by the giant Proterozoic mineralized basins of northeastern Australia; or Atlantic-type continental margins. The basins contain older clastic sediments overlain by a thick sequence of “sag-phase” sediments, including black shales and calcareous mudstones. The deposits often form adjacent to platform carbonates at basin margins.

The Chain Pool project is located at the western edge of the Edmund Basin within the Irregully Formation, the basal unit of the Edmund Basin, which consists of a 3km thick sequence of rift breccias overlain by dolomitic sandstone and siltstone interpreted as a fringing carbonate-platform deposit on the basis of its onlapping relationship with basement rocks.

Czarnota et al (2020) found that “*85% of sediment-hosted base metal deposits, including all giant deposits (>10 Mt of metal), occur within 200 kilometres of the transition between thick and thin lithosphere*,” which, in Australia, roughly translates to the 170km lithosphere thickness line (Figure 1).

The Chain Pool Project lies on the northwestern edge of this boundary, approximately 180km from the 170km Lithosphere/Asthenosphere Boundary (LAB) contour.

As such, the Chain Pool Project displays many of the key ingredients for the formation of a significant SEDEX deposit.

Next Steps

The Company is planning further work at Chain Pool including:

- Infill soil and rock chip sampling along the Joy Helen trend
- Permitting for a maiden aircore drilling programme at Joy Helen
- Further systematic rock chip sampling of the Mundine Well dolerite dykes

For more information on Miramar Resources Limited, please visit the company’s website at www.miramarresources.com.au, 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.

REFERENCES:

Cox, R., and Curis. R., 1977. "*The discovery of the Lady Loretta zinc-lead-silver deposit, northwest Queensland, Australia — A geochemical exploration case history."* Journal of Geochemical Exploration Volume 8 (1977).

Czarnota, K., Hoggard, M.J., Richards, F.D., The, M., Huston, D.L., Jacques, A.L., and Ghelichkan, S., 2020. "*Minerals on the edge: sediment-hosted base metal endowment above steps in lithospheric thickness*". Exploring for the Future: Extended Abstracts, Geoscience Australia.

Large, R. R., and McGoldrick, P. J., 1998. "*Lithogeochemical halos and geochemical vectors to stratiform sediment hosted Zn-Pb-Ag deposits, 1. Lady Loretta Deposit, Queensland*" Journal of Geochemical Exploration, 63 (1998).

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 Chain Pool Project, including JORC Table 1 and 2 information where applicable, was included in the following ASX Announcements:

- 18 July 2024 - "*High-grade copper, lead and silver results from new Gascoyne Project*"
- 27 August 2024 - *"Chain Pool tenement granted"*
- 30 October 2024 - *"Exploration Underway at Chain Pool Project"*
- 21 November 2024 – *"Copper and Gold Mineralisation at Chain Pool"*

About the Chain Pool Project

The Chain Pool Project is located approximately 275km northeast of Carnarvon, in the Gascoyne region of Western Australia and consists of a single 100%-owned Exploration Licence, E08/3676.

The Project straddles the boundary between a Durlacher Supersuite granite, which hosts the Yangibana and YIN REE deposits, and the Edmund Basin, including the high-grade "Joy Helen" copper-lead-silver-zinc occurrence.

The Project has been crosscut by later N-S trending dolerite dykes of the 750Ma "Mundine Well Suite" which hosts Ni-Cu-Co-PGE sulphide mineralisation within the "Money Intrusion" further south.

Miramar applied for E08/3676 in December 2023 and it was granted in August 2024.

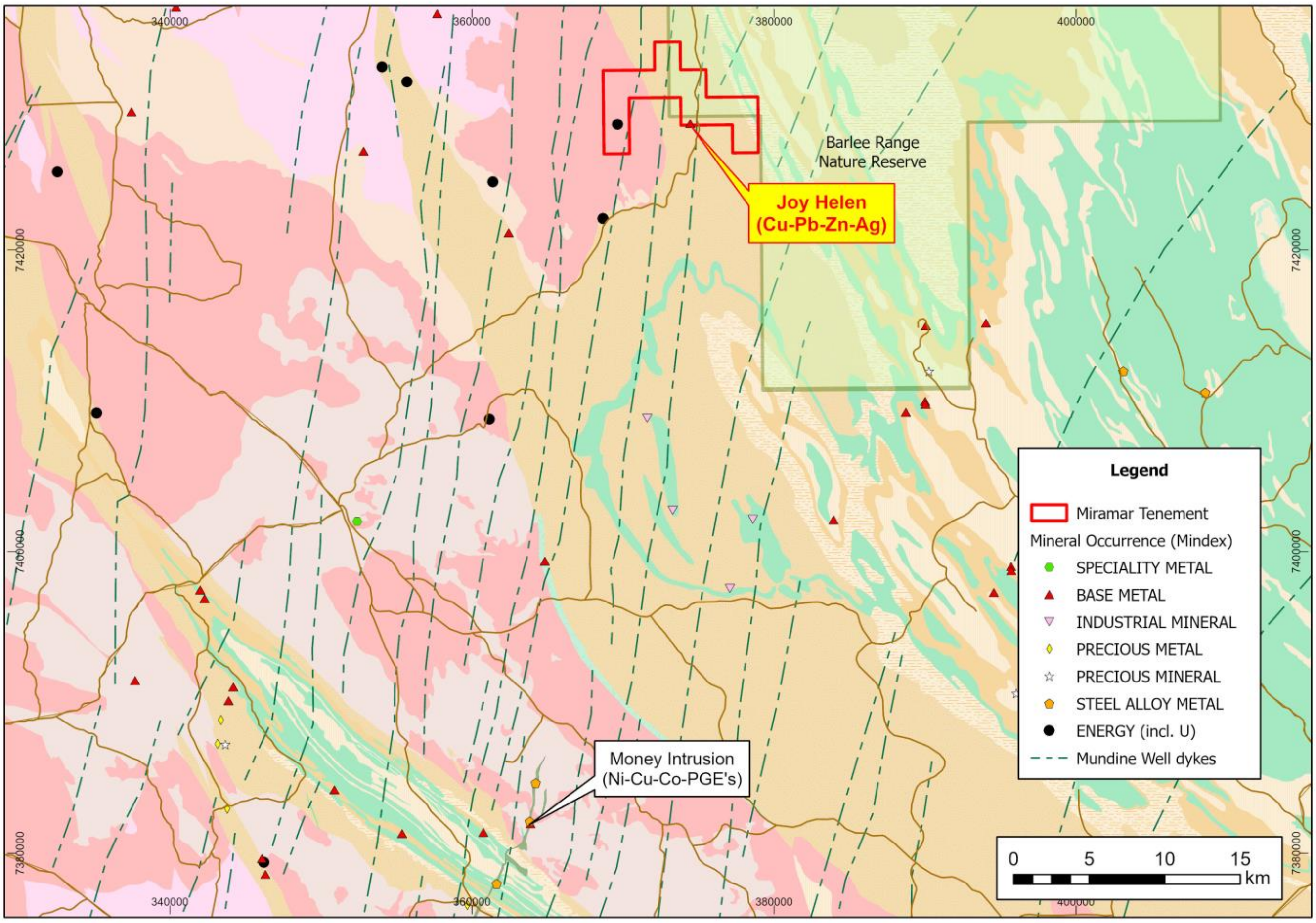
Initial reconnaissance rock chip sampling around the Joy Helen workings in July 2024, prior to the grant of the tenement, returned several high-grade results, including:

- **5.49% Cu, 42.0% Pb and 73.48g/t Ag**
- **5.43% Cu, 36.7% Pb, 36g/t Ag and 0.27% Zn**

Subsequent rock chip sampling confirmed and extended the known mineralisation.

The Project has potential for various styles of mineralisation including:

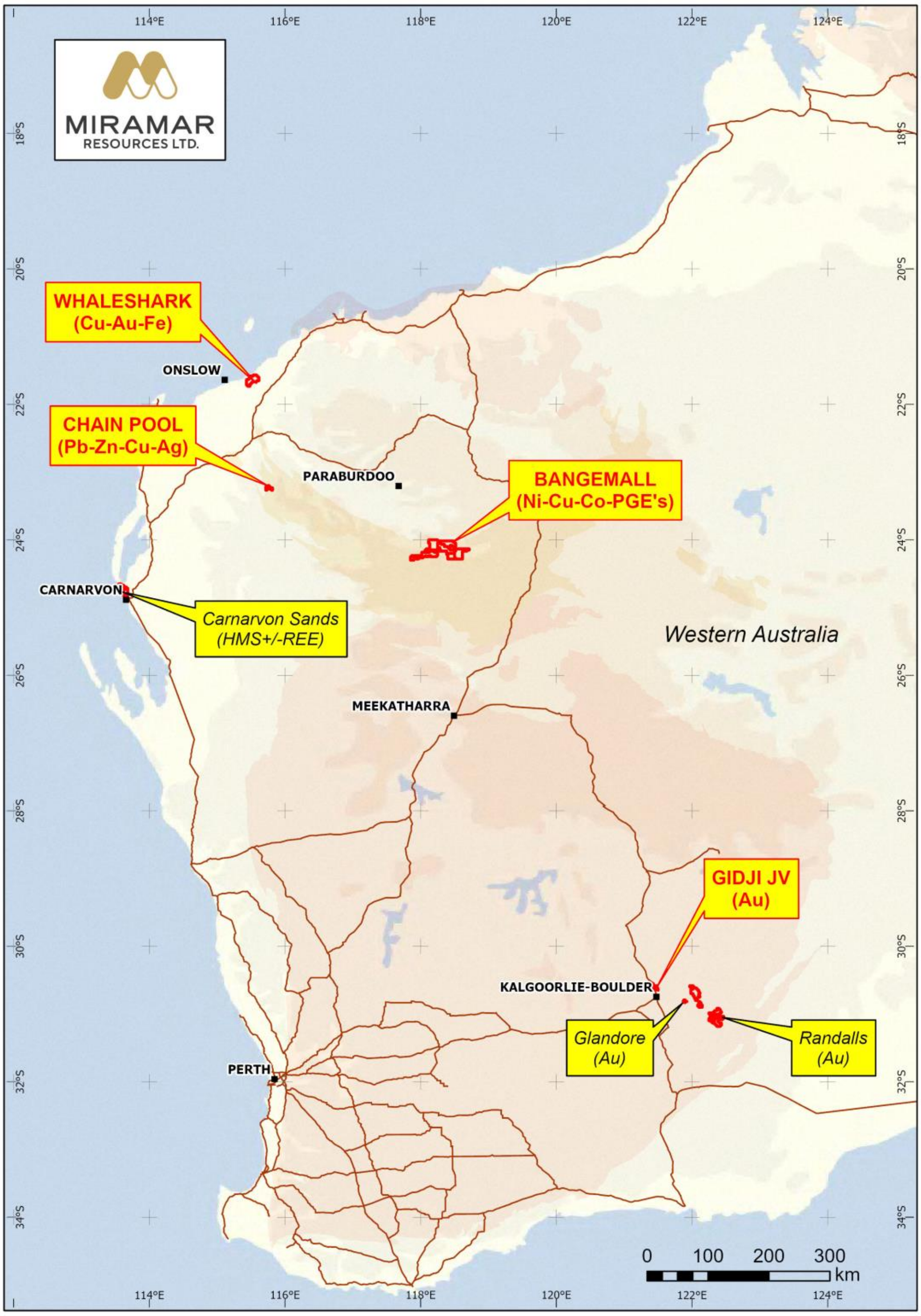
- SEDEX Pb-Zn-Ag mineralisation hosted in the Irregully Formation, similar to the Abra deposit
- Carbonate-hosted "Mississippi Valley Type" (MVT) Pb-Zn mineralisation
- Mafic intrusion-hosted magmatic Ni-Cu-Co-PGE sulphide mineralisation hosted in dolerite dykes of the 755Ma Mundine Well Suite



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 – Chain Pool soil sampling

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.*	• Samples totaling approximately 50g were collected at each site
Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diametre, 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).*	• No drilling data provided
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.*	• No drilling data provided
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*	• No drilling data provided

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.*	• No drilling data provided • Each sample was pulverized to -75um in its entirety • No sub-sampling
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 (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.*	• Samples were analysed for 48 elements by 4-acid digest followed by ICPMS • Samples with over range Ba were re-assayed by ore grade analysis • QA/QC samples were added at a frequency of 1 sample per 25 samples
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.*	• Historic rock chip sample result have been confirmed with recent sampling
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.*	• Sample locations recorded using handheld GPS and recorded in MGA Zone 50S
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*	• Soil samples were collected at 50m spacing along 100m spaced east-west lines • Sample lines are roughly perpendicular to mineralisation and geology • Sample spacing is deemed suitable for initial reconnaissance

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.*	• No assumptions can be made
Sample security	• *The measures taken to ensure sample security.*	• All samples transported from site 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
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• E08/3676 is 100% owned by MQ Minerals Pty Ltd, a 100% owned subsidiary of Miramar Resources Limited
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Previous exploration conducted by CRA, Herald Resources and Dominion Mining Limited comprised limited rock chip sampling
Geology	• *Deposit type, geological setting and style of mineralisation.*	• SEDEX or Mississippi Valley Type Pb-Zn-Ag-Cu mineralisation • Potential for Ni-Cu-Co-PGE mineralisation in Mundine Well dolerite dykes
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*	• No drilling data presented

Criteria	JORC Code explanation	Commentary
	clearly explain why this is the case.	
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.* • *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.*	• No aggregation conducted
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').*	• No drilling data presented
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.*	• Figures 1 shows the location of all soil samples • Figures 2 and 3 show results for various elements of interest
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 1 shows all results for Pb. • Figures 2 and 3 show results for selected elements of interest
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 rock chip sampling and infill soil sampling will be completed • Planning for grid aircore drilling campaign