

## High-grade lithium and lead-silver-gold in rock chips at the Kilfoyle Project

- **Initial field visit to the newly acquired Kilfoyle Project yields high-grade lithium and lead-silver-gold in surface rock chip samples**
- **Numerous outcropping pegmatites mapped over a broad area with up to 7.16% (White Rocks prospect) and 6.24% (Goosewing prospect)  $\text{Li}_2\text{O}$  in surface sampling**
- **Up to 1.92% lead, 115g/t silver and 1.04g/t gold in surface sampling at the White Rocks prospect**
- **Prospectivity of the Project for multiple styles of mineralisation confirmed**
- **Airborne geophysical survey to be flown this quarter to assist with targeting massive sulphide mineralisation to drill test**

PNX Metals Limited (**ASX: PNX**) (“**PNX**”, “**the Company**”) is pleased to announce that an initial field visit to its new Kilfoyle Project in the Northern Territory has clearly confirmed the prospectivity of these leases for multiple styles of mineralisation. The Kilfoyle Project (includes the “White Rocks” and the “Goose Wing” prospects), is located in the Litchfield area 130km SSW of Darwin, and less than 80km to the west of PNX’s zinc-gold-silver Hayes Creek Project (see ASX announcements 31 May 2018 and 20 June 2018 for further background information).

- **Pegmatite-hosted Lithium-Tantalum – White Rocks & Goose Wing prospects**

Surface rock chip samples returned high grades of lithium up to 7.16%  $\text{Li}_2\text{O}$  at the White Rocks prospect, and up to 6.24%  $\text{Li}_2\text{O}$  at the northern end of the Goosewing trend that also hosts evidence of historic small-scale tin-tantalum workings, indicating a strike of at least 10km in length (Figure 1). Surface rock chip samples were noted to be anomalous in tantalum (up to 412ppm  $\text{Ta}_2\text{O}_5$ ), as well as tin, tungsten and caesium (Table 1).

With several distinct trends and many kilometres of untested strike length of pegmatites occurring within the leases, PNX considers that the potential for economic pegmatite-hosted lithium-tantalum deposits is significant.

Detailed field mapping and systematic sampling will now be completed to determine the extent of this mineral field. The area exhibits strong similarities to the lithium-rich Bynoe pegmatite field located to the north which has demonstrated high grade lithium across several discoveries over the past 24 months

- **VMS-hosted base metals**

The Kilfoyle Project’s southern boundary, which is obscured under shallow flood plain cover, is interpreted to contain the northern extension of the Daly River mineral field, host to several high-grade zinc-rich Volcanogenic Massive Sulphide (VMS) and hydrothermal vein-hosted copper deposits.

During the field reconnaissance visit, surface samples taken at White Rocks returned high grades of lead, silver and gold (1.91% Pb, 115 g/t Ag and 1.04g/t Au) from brecciated stockwork veining within historic mining stockpiles in an area with no known exploration for base metals.

The Daly River Zn-Pb-Ag VMS deposits, which occur in a cluster less than 4km to the south of the project, were discovered by a 1966 aeromagnetic survey due to their high pyrrhotite content and chlorite-magnetite alteration. This style of mineralisation is an ideal target for airborne geophysics and PNX is planning to undertake an aeromagnetic survey over the extension of the Warrs Volcanic Member, the favourable host stratigraphy, to detect potential massive sulphide mineralisation.

- **Nickel-Copper-Cobalt (+/-PGE)**

PNX has been successful with its application for government co-funding to drill test the Woolianna Gabbro, a favourable host for nickel sulphide mineralisation, within the Kilfoyle Project. The model is similar to the Savannah Ni-Co-Cu-PGE deposit, which like Kilfoyle also lies within the Halls Creek Mobile Zone. Soil sampling data has highlighted a consistent trend of anomalous Ni-Cu-Co-PGE coincident with the gabbro and its possible extension undercover. During the field visit, small weathering-resistant units of gabbroic rocks were observed in outcrop. Evidence of hydrothermal vein-style mineralisation was also noted within this unit which is similar to the Daly River copper deposits along strike to the south. Co-funded drilling of these targets will occur after the aeromagnetic survey has been completed.

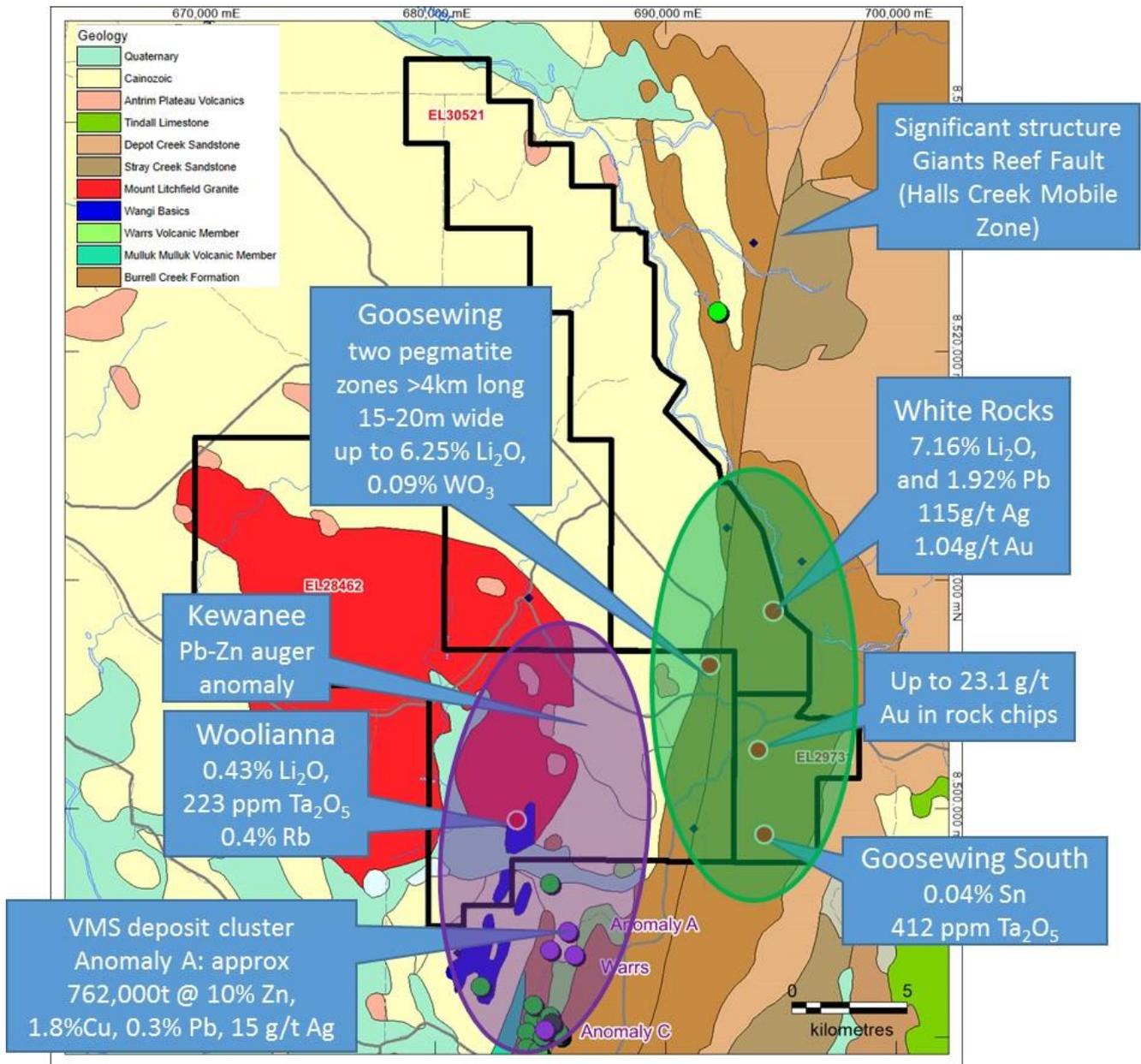
## **Managing Director Comment**

PNX Managing Director James Fox said:

*“We are very encouraged by the results and information gathered during initial reconnaissance work at the Kilfoyle Project which provide strong justification for adding the project to our portfolio. The Project is within a highly mineralised province of the NT, where historic mining has occurred.*

*Surface sampling has confirmed the multi-commodity potential within the Kilfoyle leases including pegmatite hosted lithium-tantalum, VMS hosted base and precious metals and Nickel-Copper-Cobalt in the Woolianna Gabbro.*

*Our next steps at Kilfoyle will include detailed surface mapping and systematic sampling followed by an aeromagnetic survey and drilling of key prospects once the aeromagnetic survey results have been interpreted. This work will commence this quarter.”*



**Figure 1:** Kilfoyle Project – Showing Prospective Areas and zones of interest (Green = Lithium-Tin-Tantalum-Gold) (Purple = Nickel-Copper-Cobalt & Zinc-Lead VMS).

Green dots = copper deposits, Purple = VMS, Red = Sample Locations

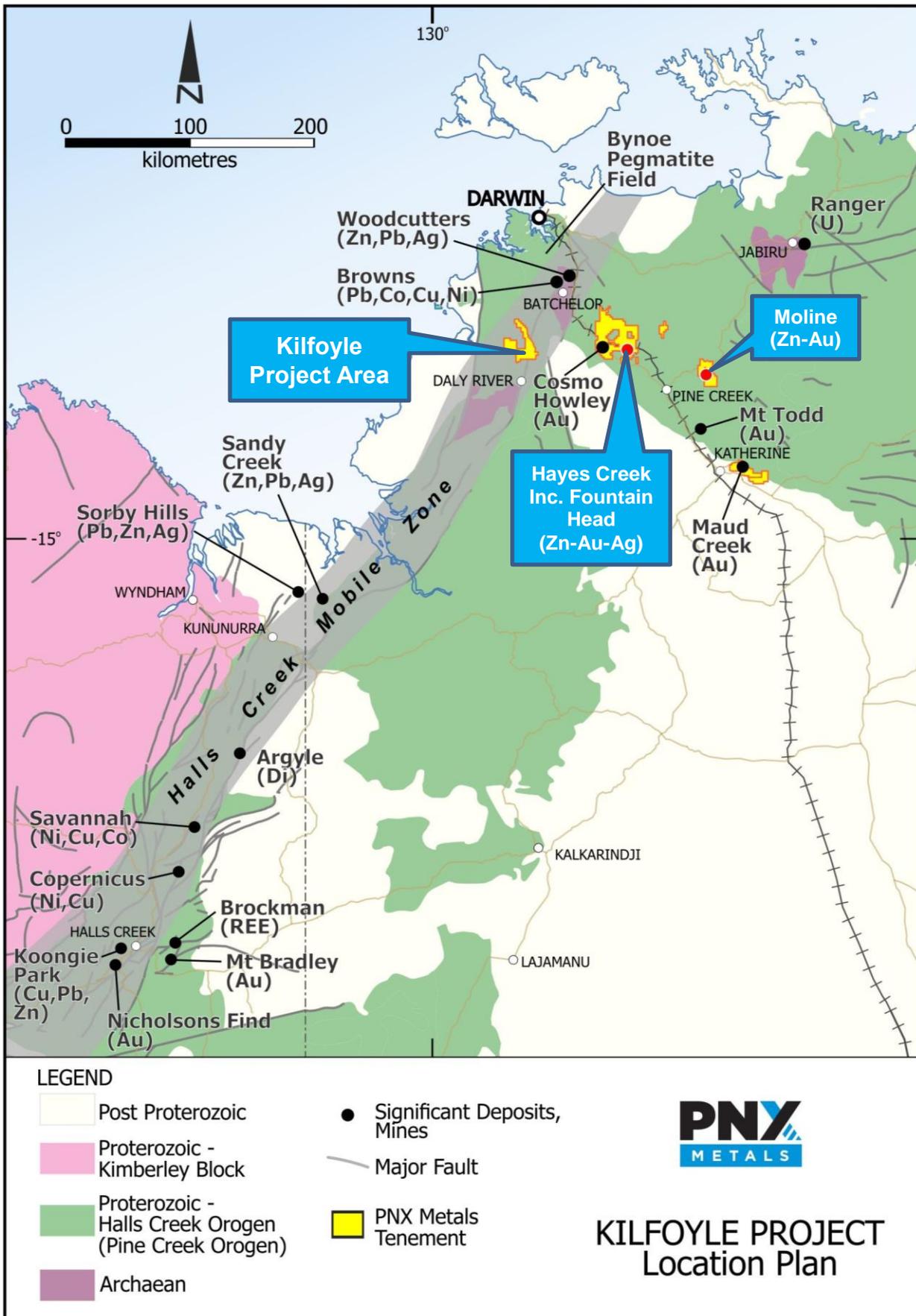


Figure 2: NT Project locations

**Table 1:**

Area	Sample ID	Easting MGA94 _52	Northing MGA94 _52	Au ppm	Pb ppm	Ag ppm	Li* ppm	Cs ppm	Sn ppm	Ta ppm	W ppm
Black Creek	KRK001	696506	8503394	0.02	-	-	-	-	-	-	-
White Rock	KRK002	695059	8508423	L	L	L	33294	0.76	36.65	35.13	27.3
White Rock	KRK003	695059	8508423	1.06	1919	115		1.24	81.95	4.37	16.71
Near White Rock	KRK004			L	-	-		1.60	2.73	2.00	16.68
White Rock South	KRK005	696068	8507044	L	-	-		8.12	11.22	0.36	276.32
White Rock South	KRK006	692659	8507665	L	-	-		52.34	74.72	3.66	107.4
Woolianna Gabbro	KRK009	683588	8499375	L	-	-		13.49	6.88	0.65	9.28
Woolianna Gabbro	KRK010	683596	8499380	L	-	-		643.18	761	28.51	286.38
Woolianna Gabbro	KRK011	683702	8499159	L	-	-		434.57	15.71	182.95	39.15
Chinese Workings	KRK012	692173	8498568	0.04	-	-		2.27	55.84	1.21	23.65
Chinese Workings	KRK015	693152	8500240	L	-	-		125.76	420.14	337.33	30.15
Goosewing	KRK017	691873	8506144	0.15	-	-	28988	1.91	37.81	52.78	27.18
Goosewing	KRK018	691823	8505997	L	-	-	8352	1292.12	151.63	21.6	718.01

\*Note: To convert Li to Li<sub>2</sub>O multiply by 2.153

#### Competent Person's Statement

The information in this report that relates to Exploration Results is based on information compiled by Mr Andrew Bennett, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy (AusIMM). Mr Bennett has sufficient experience relevant to the style of mineralisation and the 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 Bennett is a full time employee of PNX Metals Ltd and consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

For further information please visit the Company's website [www.pnxmetals.com.au](http://www.pnxmetals.com.au) or contact:

James Fox

Managing Director & CEO

Telephone: +61 (0) 8 8364 3188

# JORC Code, 2012 Edition – Table 1

## Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <li>• <i>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 downhole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</i></li> <li>• <i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i></li> <li>• <i>Aspects of the determination of mineralisation that are Material to the Public Report.</i></li> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• All samples were collected by hand from outcropping rocks or stockpiled rock dumps</li> <li>• Approximately 2 kg were collected at each sample site</li> <li>• Samples are considered as point measurements are are not considered to be representative of strike or depth extent</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <li>• <i>Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).</i></li> </ul>	<ul style="list-style-type: none"> <li>• n/a</li> </ul>
Drill sample recovery	<ul style="list-style-type: none"> <li>• <i>Method of recording and assessing core and chip sample recoveries and results assessed.</i></li> <li>• <i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i></li> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• n/a</li> </ul>
Logging	<ul style="list-style-type: none"> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• n/a</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>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.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul style="list-style-type: none"> <li>Individual samples are placed in individual sample bags and clearly identified prior to submission to the laboratory for assay</li> <li>No subsampling was performed in the field</li> <li>Samples are crushed and pulverized to – 100 microns, each sample is roll mixed on a rubber mat after pulverizing, a barren flush is pulverized between each sample</li> <li>The sample sizes are appropriate for the grain size of the material being sampled and the reconnaissance nature of the work</li> </ul>
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>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.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Samples were submitted to Northern Australian Laboratories (NAL) in Pine Creek, Northern Territory</li> <li>After crushing and pulverizing, the samples are subjected to a four acid digest (considered a total digest for the elements of interest) and read using ICP-MS and OES for a suite of 21 elements (lab methods G400M and G400I). High grade lithium samples were verified with the an independent peroxide fusion method. A sub-sample of the pulverized sample is also submitted for conventional fire assay for gold (FA50).</li> <li>NAL have internal QAQC procedures, including certified reference materials, duplicates and blanks, results of which are reviewed by NAL prior to reporting to PNX</li> </ul>
Verification of sampling and assaying	<ul style="list-style-type: none"> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul style="list-style-type: none"> <li>The only adjustment made to the data is the conversion of elements to oxides. Those elements conversion were Li to Li<sub>2</sub>O (x 2.153), Ta to Ta<sub>2</sub>O<sub>5</sub> (x1.221), W to WO<sub>3</sub> (x1.261), Sn to SnO<sub>2</sub> (1.27), Cs to Cs<sub>2</sub>O (1.06)</li> </ul>
Location of data points	<ul style="list-style-type: none"> <li>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.</li> <li>Specification of the grid system used.</li> </ul>	<ul style="list-style-type: none"> <li>The rock chips were located using a Garmin hand-held GPS unit and are considered accurate to within about 10m. All coordinates are quoted using the GDA94 datum and projected to MGA zone 52</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>
Data spacing and distribution	<ul style="list-style-type: none"> <li>Data spacing for reporting of Exploration Results.</li> <li>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.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul style="list-style-type: none"> <li>The sample are reconnaissance in nature and so sample spacing is very variable.</li> <li>The data is not suitable for use in a mineral resource estimate and is not intended for such use</li> </ul>
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>The sample are reconnaissance in nature and cover different styles of mineralisation, so any biasing effect caused by orientation is yet to be determined</li> </ul>
Sample security	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>Collection of the samples was carried out by PNX and samples are submitted to the laboratory by the same people</li> <li>No third parties have been allowed access to the samples</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul style="list-style-type: none"> <li>No audits have been carried out at this point</li> <li></li> </ul>

## 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	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>The samples are located within Exporation Licences EL30521, EL29731 and EL28462 currently held by May Drilling Pty Ltd</li> <li>The samples situated within Perpetual Pastoral Lease, NT Portion 2681 part of Litchfield Station.</li> <li>The Leases are in good standing and no known impediments exist</li> <li></li> </ul>
Exploration done by other parties	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>The project area has been explored by numerous previous titleholders. The most active of these were Kewanee Australia Pty Ltd in the 1970's, Geopeko (late 1980's-early 1990's), Troy Resources (mid 1990's to 2000's) and more recently, May Drilling Pty Ltd. Some alluvial tin-tantalum workings are evident within the</li> </ul>

Criteria	JORC Code explanation	Commentary
		project area, as are some old Chinese diggings.
Geology	<ul style="list-style-type: none"> <li>• <i>Deposit type, geological setting and style of mineralisation.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The main potential and targeted deposits are:</li> <li>• Pegmatite hosted Li-Ta (similar to Bynoe pegmatite field)</li> <li>• VMS hosted base metals (extension of Daly River deposits such as Anomaly A and Warrs) within the Warrs Volcanic Member</li> <li>• Ni-Co-Cu-PGE orthomagmatic intrusion related deposits (similar to Savannah) within the Woolianna Gabbro</li> <li>• Epithermal vein-hosted gold (typical Pine Creek mineralisation)</li> <li>•</li> </ul>
Drill hole Information	<ul style="list-style-type: none"> <li>• <i>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:</i> <ul style="list-style-type: none"> <li>○ <i>easting and northing of the drill hole collar</i></li> <li>○ <i>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i></li> <li>○ <i>dip and azimuth of the hole</i></li> <li>○ <i>down hole length and interception depth</i></li> <li>○ <i>hole length.</i></li> </ul> </li> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• n/a</li> </ul>
Data aggregation methods	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>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.</i></li> <li>• <i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i></li> </ul>	<ul style="list-style-type: none"> <li>• n/a</li> </ul>
Relationship between mineralisation widths and intercept	<ul style="list-style-type: none"> <li>• <i>These relationships are particularly important in the reporting of Exploration Results.</i></li> <li>• <i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i></li> <li>• <i>If it is not known and only the down hole lengths are reported, there</i></li> </ul>	<ul style="list-style-type: none"> <li>• n/a</li> </ul>

Criteria	JORC Code explanation	Commentary
<i>lengths</i>	<i>should be a clear statement to this effect (e.g. 'down hole length, true width not known').</i>	
<i>Diagrams</i>	<ul style="list-style-type: none"> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>Refer to the main body of this announcement</li> </ul>
<i>Balanced reporting</i>	<ul style="list-style-type: none"> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>All matters of importance have been included</li> </ul>
<i>Other substantive exploration data</i>	<ul style="list-style-type: none"> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>All relevant information has been included</li> </ul>
<i>Further work</i>	<ul style="list-style-type: none"> <li><i>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></li> <li><i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></li> </ul>	<ul style="list-style-type: none"> <li>Systematic soils sampling</li> <li>Aeromagnetic survey</li> <li>RC drilling (co-funded) of Woolianna Gabbro</li> </ul>