

## New Priority Zinc Targets Identified at Moline, NT

- **New large zinc targets identified at the Moline Project 65km to the east of PNX's Hayes Creek zinc-gold-silver Project in the NT, including:**
  - **Waterhole** - significant zinc-lead geochemical anomaly defined over a 1,300m x 400m area
  - **Mango** - strong zinc-lead geochemical anomaly measuring 800m x 100m near a historic base metals mine
  - **Swan** - zinc-lead anomaly approximately 700m in length immediately to the north of a drill intercept of 1m @ 4.66% Zn, 11.37 g/t Au, 95.5 g/t Ag and 0.90% Pb (MORC026 from 45m)
- **Geophysical surveys to commence in order to refine targets ahead of drilling**
- **Base metals exploration drilling scheduled to commence in late October**
- **Hayes Creek DFS ongoing and expected to be completed in 2018**

PNX Metals Limited (**ASX: PNX**) is pleased to announce that a number of new, high priority zinc targets have been identified from within the Moline Project approximately 65km to the east of its Hayes Creek zinc-gold-silver Project (**Hayes Creek**) in the Pine Creek region of the Northern Territory (**NT**). The newly identified prospects are **Waterhole, Mango and Swan**.

Having received over \$3 million from recent, over-subscribed capital raising activities, PNX will accelerate its exploration activities in this under-explored region of the NT. The aim of current exploration is to discover and delineate additional high-value base metals and/or gold deposits to provide a pipeline of growth opportunities to complement the proposed development at Hayes Creek or other existing free gold milling infrastructure in the region. During the recently completed Pre-Feasibility Study (**PFS**), regional and near-mine exploration at Hayes Creek was a secondary priority.

Hayes Creek is currently the subject of a Definitive Feasibility Study (**DFS**) which is progressing well and is expected to be completed in 2018. The PFS<sup>1</sup> forecast annual production of 18,200t zinc, 14,700oz gold, and 1.4Moz silver (39,100t of zinc equivalent) over an initial mine life of 6.5 years. This presents the opportunity for an economically viable, low-cost, high margin zinc and precious metal mine that could create significant value for the Company's shareholders. Near-mine and regional exploration programs are now underway across PNX's ~1,700km<sup>2</sup> Moline, Burnside, and Chessman areas, proximate to the proposed mine infrastructure at Hayes Creek.

<sup>1</sup> Refer ASX announcement 12 July 2017

## Newly Identified Moline Prospects

PNX field teams completed over 3,500 geochemical measurements on soil samples using portable XRF and laboratory soils analysis as a quick and cost-effective method of vetting geological targets. Fieldwork targeted VMS deposits similar to Iron Blow and Mt Bonnie (the deposits that are the subject of the Hayes Creek DFS) as well as polymetallic vein hosted deposits similar to Woodcutters (located 80km south of Darwin) which was discovered as a zinc-lead in soils geochemical anomaly up to 800m long. Woodcutters is a polymetallic vein hosted deposit that produced 4.65Mt averaging 12.28% Zn, 5.65%Pb and 87 g/t Ag. The newly identified prospects are summarised below, and will be followed up with Induced Polarisation (IP) surveys to refine the targets prior to drill testing in the coming months.

### Waterhole

The Waterhole Prospect is the strongest geochemical target identified by PNX to date in its NT Projects and measures **1,300m x 400m** at >500ppm zinc in soils (with associated lead) with a peak value of 1,558ppm zinc. The anomaly is very similar to what was observed over the Woodcutters deposit. The elongated anomaly is oriented along a north-south structure, believed to be the important orientation in controlling the high-grade gold shoots at the historic Moline gold deposits. There is no known historical drilling in this area, situated on the southwestern boundary of ML24173 and EL28616 (**Figure 1**) and as such Induced Polarisation (IP) surveying will now be used to identify bedrock targets for drill testing.

### Mango

The Mango Prospect is a discrete north-south trending **800m x 100m** zinc-lead (>500ppm zinc) in soils anomaly associated with hematite altered sediments at the base of the Mt Bonnie Formation.

Mango is located 2km east of the Evelyn base metal mine which was a small lead-zinc-silver rich deposit previously mined in the 1970s (**Figure 1**). There is no known historical drilling on this Prospect and IP surveying will be used to identify targets for drill testing.

### Swan

At Swan, recent drilling<sup>2</sup> intersected **1m @ 4.66% Zn, 11.37g/t Au, 95.5g/t Ag and 0.90% Pb** (MORC026 from 45m), and fieldwork has also identified a large approximately **700m in length** zinc-lead anomaly immediately to the north of the above drill intersection (**Figure 1**). Further soil geochemical definition is underway. The results from drilling combined with soils analysis suggest this is another sizeable target area prospective for base metals mineralisation with limited drilling.

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<sup>2</sup> Refer ASX release 12 September 2017

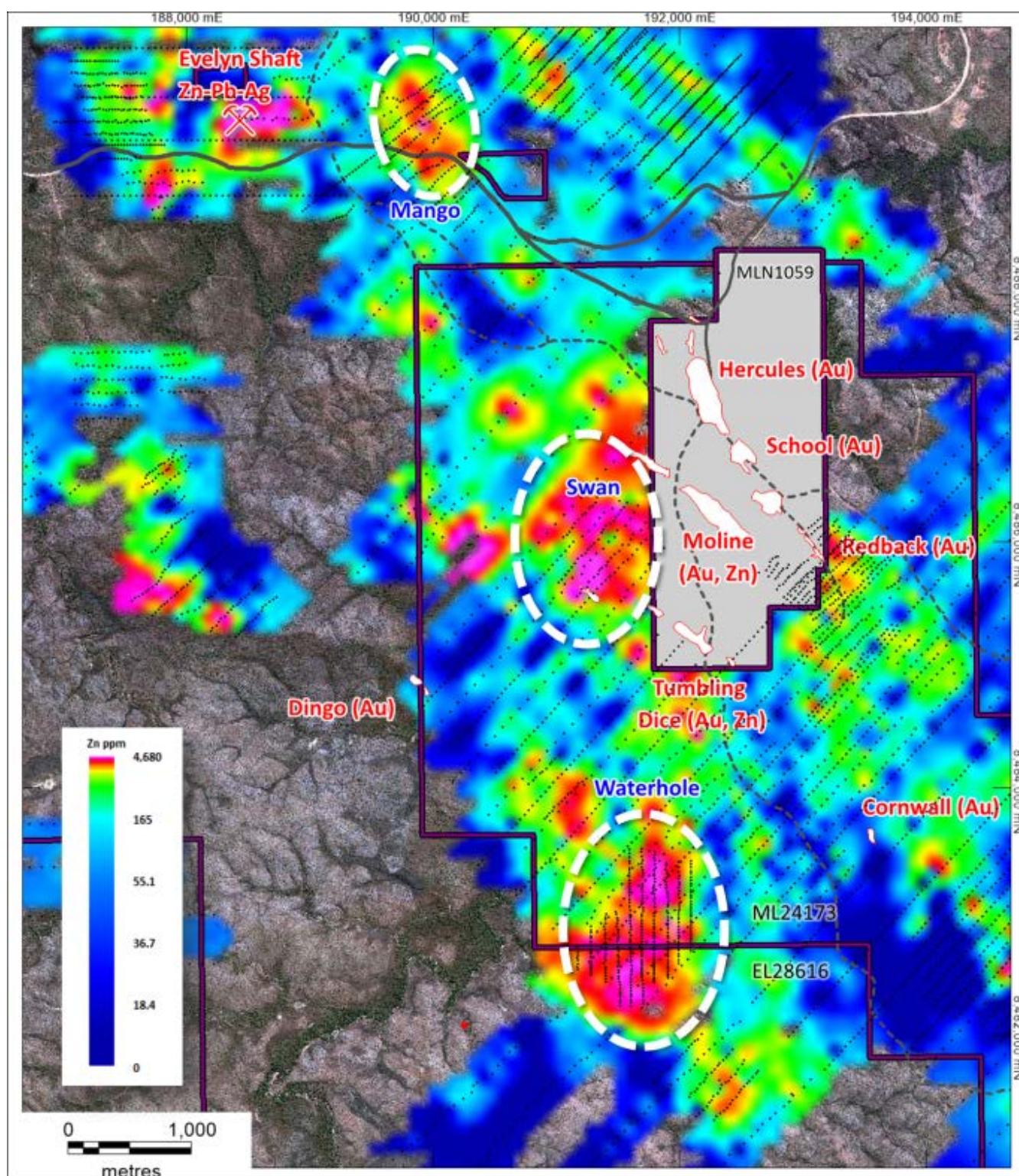


Figure 1: Zinc in soil image over aerial photo, showing prospect areas and historical pits



## Planned Work Program & Strategy

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The newly identified geochemically anomalous targets at Waterhole, Mango, and Swan will immediately be followed up with IP surveys to refine the targets prior to drill testing.

The geochemical sampling program at Moline is part of a broader field exploration program being undertaken across PNX's NT projects. Considerable activity is scheduled prior to the onset of the wet season:

- SkyTEM aerial survey **has been completed** – the intent of the survey was to identify bedrock conductors within the highly prospective Mt Bonnie Formation at the Burnside Project – *results are due shortly*
- Follow-up IP surveys over priority geochemical targets to define drilling targets – *mid-October start*
- Drilling to support the Hayes Creek DFS and potentially extend mine life at the Mt Bonnie and Iron Blow deposits, to consist of approximately 3,000m RC drilling and 1,000m diamond core drilling - *to commence in late-October*
- Mapping and geochemical sampling at Moline and Burnside – *further results from Burnside expected within 2-3 weeks*
- Modelling of magnetic data, followed by exploration drilling at the high priority Margaret (Zn-Pb-Au-Ag) prospect, located less than 1.5km from the Iron Blow deposit at Hayes Creek. The soils anomaly at Margaret is over 1.2km long - *November*
- Exploration drilling of other priority regional targets to follow drilling at Margaret – *November*

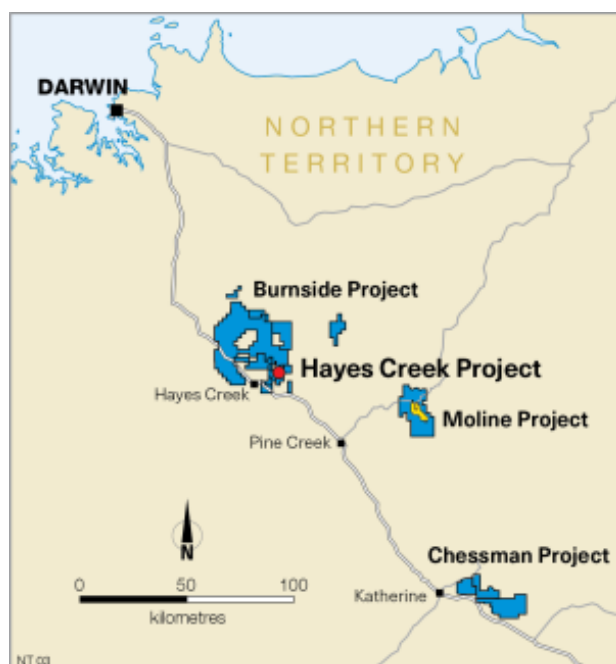
Geochemical fieldwork is continuing and has also identified numerous gold targets, which will be systematically investigated and prioritised for future follow up.

## Moline & Hayes Creek

The Company's aim through near-mine and regional exploration is to delineate additional high-value gold and/or base metals deposits, thereby providing opportunities to extend the mine life of the Hayes Creek Project.

The Moline, Burnside and Chessman project areas form part of PNX's farm-in agreement with TSX-listed Kirkland Lake Gold Ltd (TSX:KL). PNX currently holds a 51% interest (excluding uranium) in these areas, which consists of 19 Exploration Licences and 4 Mineral Leases covering approximately 1,700km<sup>2</sup> in the Pine Creek region of the Northern Territory (**Figure 2**).

PNX is now in the second stage of the farm-in, wherein it can increase its interest in each of the tenements to 90% (excluding uranium) with expenditure of \$2 million by 15 December 2018, with approximately \$1.2 million of that having been spent to date.



**Figure 2: NT Project locations**

#### **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 us:

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>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.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>A hand held Niton field portable X-ray fluorescence (XL3T-500) analyser (fpXRF) was used to obtain soil analysis.</li> <li>Sampling was carried out under PNX protocols and QAQC procedures. Factory QC of the instrument is performed on annually and calibration tests were completed on an ongoing basis during survey.</li> <li>Samples were sieved in the field to provide a consistent -80 micron sampling media, with analyses performed directly on the sieved fraction.</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <li>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).</li> </ul>	<ul style="list-style-type: none"> <li>No drilling was completed.</li> </ul>
Drill sample recovery	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>No drilling was completed.</li> </ul>
Logging	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>No drilling was completed.</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>No drilling was completed.</li> <li>Samples were dry-sieved to -80 micron, with approximately 200g retained for analysis.</li> <li>80 micron is an appropriate size for exploration soil fpXRF analysis.</li> <li>None adopted.</li> <li>Standards, blanks and duplicate analyses indicated acceptable analytical accuracy.</li> <li>Samples were appropriately sized.</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>XRF is a total analytical technique suitable for base metal analyses. Anomalous soil concentrations are well above the lower detection limit of the instrument.</li> <li>Instrument used was a Niton XL3T-500. Reading time set at 50 seconds with measurements taken in soil mode. No calibration factors have been applied.</li> <li>QAQC data includes standards, blanks and duplicates introduced at start of program and after every 50 samples. Standards, blanks and duplicate analyses indicated acceptable analytical accuracy.</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>No drilling was completed.</li> <li>No drilling was completed.</li> <li>Primary data was collected using fpXRF. Data was downloaded, validated by PNX geologist and compiled in MS EXCEL.</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> <li>Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li>Sample location points are collected using a Trimble Juno 3D GPS with autonomous accuracy of +/- 5 meters.</li> <li>The Grid system is MGA_GDA94, Zone 53.</li> <li></li> </ul>

Criteria	JORC Code explanation	Commentary
<i>Data spacing and distribution</i>	<ul style="list-style-type: none"> <li><i>Data spacing for reporting of Exploration Results.</i></li> <li><i>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.</i></li> <li><i>Whether sample compositing has been applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>Measurements taken typically at 50m intervals on lines spaced at 400 metres, within infill to 25 x 100m (or less) in areas of interest</li> <li>Date spacing is appropriate for the size of target.</li> <li>No sample compositing has been applied.</li> </ul>
<i>Orientation of data in relation to geological structure</i>	<ul style="list-style-type: none"> <li><i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i></li> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>Sample lines are orientated perpendicular to interpreted strike of strata, which varies in the project area. Line and sample spacing are adequate to define sizable geochemical anomalies of any orientation with confidence.</li> </ul>
<i>Sample security</i>	<ul style="list-style-type: none"> <li><i>The measures taken to ensure sample security.</i></li> </ul>	<ul style="list-style-type: none"> <li>No samples are retained as it is an active real-time measurement</li> </ul>
<i>Audits or reviews</i>	<ul style="list-style-type: none"> <li><i>The results of any audits or reviews of sampling techniques and data.</i></li> </ul>	<ul style="list-style-type: none"> <li>No audits or reviews undertaken at this time.</li> </ul>

## 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>	<ul style="list-style-type: none"> <li><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.</i></li> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>This report refers to the area within EL28616, ML24173 and MLN1059, which is held jointly by PNX Metals Ltd (51%) and Newmarket Gold NT Holding Pty Ltd (49%). PNX do not have any rights to uranium minerals discovered. There are no other third party agreements, no government royalties, historical sites or environmental issues PNX is aware of at this time.</li> <li>The tenements are in good standing and no known impediments exist.</li> </ul>
<i>Exploration done by other parties</i>	<ul style="list-style-type: none"> <li><i>Acknowledgment and appraisal of exploration by other parties.</i></li> </ul>	<ul style="list-style-type: none"> <li>The Moline area has had much previous exploration for gold and base metals. The Evelyn Mine produced 83,000 tonnes averaging 260 g/t Ag, 5.8% Pb and 6.1% Zn between 1966 and 1970. The field was investigated between 1981 and 1990 by a consortium of Greenbushes, Amoco and Cyprus, with comprehensive regional</li> </ul>



Criteria	JORC Code explanation	Commentary
		exploration including programs of geological mapping, rock chip sampling, soil sampling, drainage sampling and aeromagnetism. Open pit mining occurred between 1989 and 1992, and approximately 1.6 million tonnes were treated yielding an average of 2.14 g/t of gold at four main pits (Hercules, Moline, Tumbling Dice and School).
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>• PNX are primarily searching for VMS-style base metal and gold prospect in the Mt Bonnie Formation, or epigenetic vein style mineralisation such as Woodcutters.</li> <li>• Rocks of the South Alligator Group, within the Pine Creek Orogen dominate the stratigraphy.</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>• No drilling being reported</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>• No averaging techniques or cut-offs used.</li> </ul>
Relationship between mineralisation widths and	<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> </ul>	<ul style="list-style-type: none"> <li>• No drilling was undertaken.</li> </ul>

Criteria	JORC Code explanation	Commentary
<i>intercept lengths</i>	<ul style="list-style-type: none"> <li><i>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').</i></li> </ul>	
<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 main 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>PNX are using VTEM derived EM and magnetic datasets collected in 2011 to assist in targeting. These datasets have been assessed and interrogated by a consulting geophysicist to assist in prioritising areas of interest</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>The likely method of follow up to these results will be initially undertaking IP ground geophysical surveys to pinpoint sulfide hosted targets to drill</li> </ul>