

## West Kimberley Exploration Update

- **Quick Shears Project**
  - **26km<sup>2</sup> ground electromagnetic survey completed**
  - **3,016m of reconnaissance Air Core drilling completed**
- **Buxton-IGO West Kimberley Regional Joint Venture**
  - **First-ever airborne electromagnetic surveys flown over 1,900km<sup>2</sup> of prospective ground; Numerous conductors identified**
  - **Ground follow-up commenced, initially at Sentinel (E04/2408)**
  - **Belt scale airborne magnetics-radiometrics survey commencing soon**
- **Merlin Project**
  - **17km<sup>2</sup> ground electromagnetic survey completed**

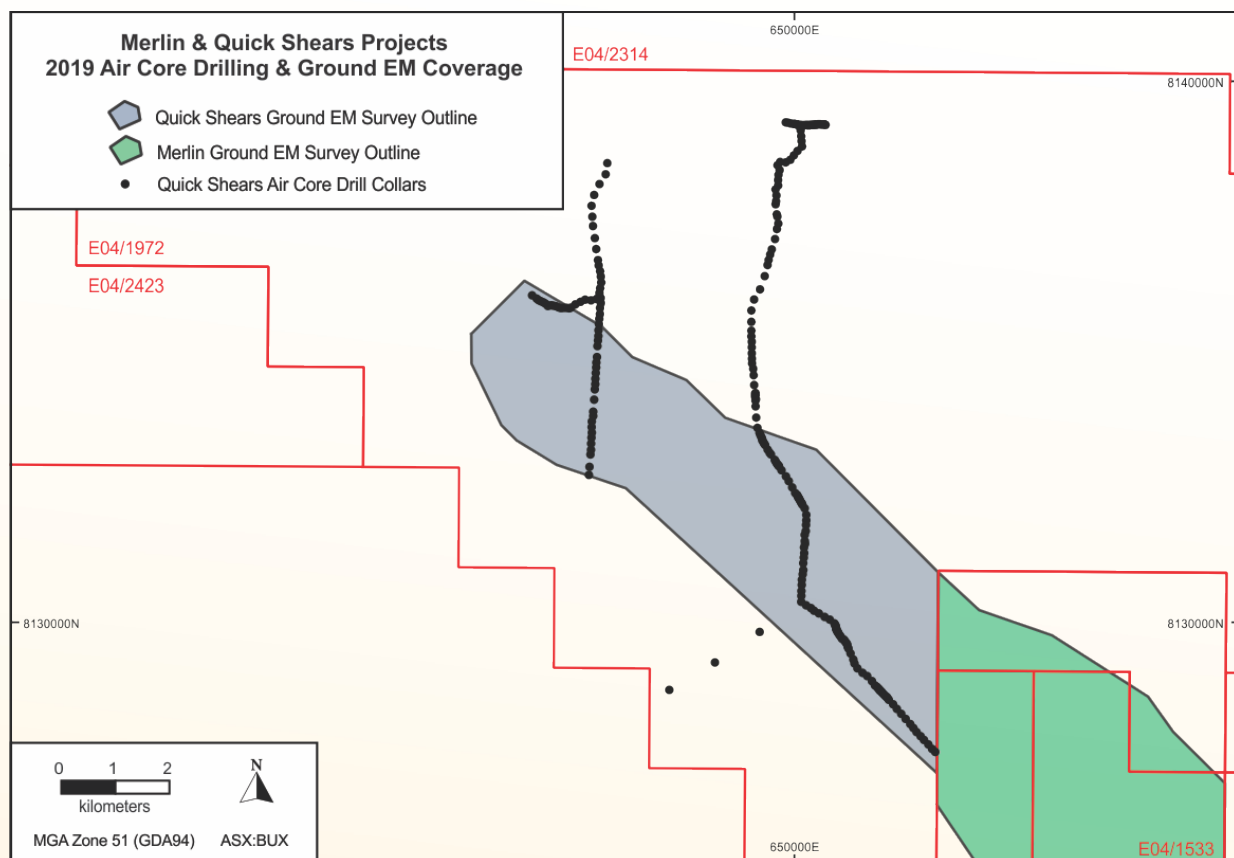
Buxton Resources Limited (ASX:BUX) is pleased to inform the market that ground electromagnetic surveys (low temperature SQUID Moving Loop EM) and a reconnaissance Air Core drilling program have recently been completed at the Quick Shears Project (Figure 1).

Aircore drilling at Quick Shears was completed on 23<sup>rd</sup> August. This work provided new geological and lithochemical (handheld XRF) data on the extensive areas of Ruins Dolerite and Marboo Formation rocks under shallow soil and transported cover in the area immediately northwest and along strike from Buxton's Merlin prospect. This drilling program followed up on recent surface mapping and exciting identification of disseminated Ni-Cu sulphides in outcrop at Quick Shears (ASX 9/07/19). Apart from vastly improving understanding of local geology, results have also enabled more confident ranking of the many known airborne and ground EM conductors identified at Quick Shears. The recently completed LT-SQUID MLEM provides maximum depth of penetration utilising world-class low noise receivers. The results of the survey are being assessed and integrated with other geophysical and geological models to generate targets for drilling.

Regionally, a large, belt-scale airborne EM survey has been completed over 1,900km<sup>2</sup> of West Kimberley Joint Venture (WKJV) tenements (Figure 2). This survey was flown using the industry-leading high-power Spectrem equipment and DC-3 aircraft (Figure 3) mobilised from overseas by IGO (Independence Group NL). A second airborne survey (aeromagnetics and radiometrics) is due to commence this quarter, providing the first high-resolution information on rock types and structures in these as-yet unexplored areas aside from Buxton's 2018 aeromagnetics survey at Sentinel (ASX 20/09/18). No detailed government or multi-client datasets exist for the West Kimberley, greatly handicapping Buxton's regional exploration to date. The upcoming high-quality, belt-scale aerial work planned by the WKJV represents a major and historic step forward in exploration of the region.

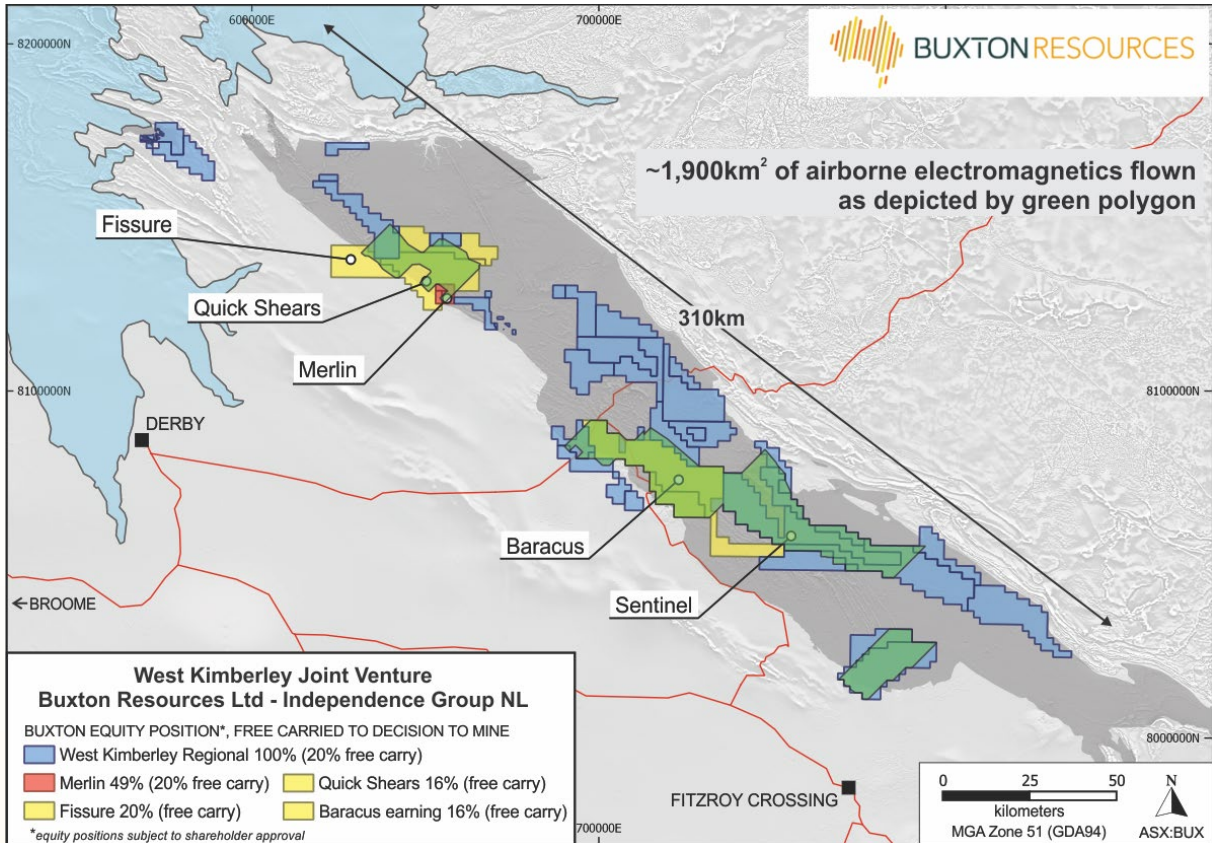
Analysis of results from the large Spectrem EM survey is at an early stage and will be further informed by the high-resolution aeromagnetics results as they become available. However, numerous promising EM conductors have already been identified on multiple tenements. Anomaly assessment, ranking and target generation is underway, with this work to be completed over the next quarter. Ground follow-up on selected anomalies at Sentinel is already underway, with systematic ground assessment and ranking of targets throughout the belt to be completed during the 2020 field season.

IGO are planning a busy field season for the WKJV in 2020 throughout the belt (King Leopold Orogen) which will include mapping, surface geochemistry, ground EM, drilling and downhole EM. Buxton eagerly awaits the results from these planned large-scale exploration programs in this highly prospective, under-explored, magmatic nickel-copper province.



**Figure 1.** Air Core drill collars and ground EM survey areas at the Quick Shears and Merlin Projects

The systematic MLTEM survey across Merlin (Figure 1) has confirmed all previously identified conductors, including those previously only detected by down-hole EM. One new conductor was detected by the new survey, a deep source which is difficult to resolve using surface EM methods. This result shifts the search space at Merlin deeper, most likely in excess of 600 metres below surface. This in turn means a different approach to future drill targeting at Merlin is needed, with deep, step-back drill holes designed to provide a platform for deep down-hole EM, as well as ideally intersecting geological and geochemical targets in conventional ways. The commitment required for this type of drilling and down-hole EM is substantial, as multiple deep holes will be required. Buxton is evaluating ways to get the best possible value for shareholders at Merlin.



**Figure 2.** Buxton-Independence Group West Kimberley Joint Venture tenure over the King Leopold Orogen (in dark grey), highlighting the area covered by the recent regional electromagnetic Spectrem survey



**Figure 3.** Spectrem aircraft used to survey WKJV tenements

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## **Competent Persons**

*The information in this report that relates to Exploration Results is based on information compiled by Mr Eamon Hannon, Member of the Australasian Institute of Mining and Metallurgy, and Mr Derek Marshall, Member of the Australian Institute of Geoscientists. Mr Hannon and Mr Marshall are full-time employees of Buxton Resources. Mr Hannon and Mr Marshall have sufficient experience which is relevant to the activity being undertaken to qualify as a "Competent Person", as defined in the 2012 edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Hannon and Mr Marshall consent to the inclusion in this report of the matters based on the information in the form and context in which it appears.*

## JORC Table: Section 1 – Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	<i>Nature and quality of sampling (eg 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.</i>	Recent exploration at the Quick Shears Project by Buxton Resources Limited (Buxton) has comprised ground electromagnetics (EM) and air core drilling.
	<i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i>	Air Core drilling was undertaken by Hornet Drilling and Geological Services Pty Ltd utilising a Landcruiser mounted rig. Samples were generated every metre, with samples collected as 4m composites and single metres at bottom of hole.
	<i>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.</i>	Bottom of hole drill chips have been analysed on site by portable XRF to assist with sample selection and bedrock mapping. Drill samples have been collected for geochemical analysis.  Ground EM at the Merlin and Quick Shears Prospects was performed by GEM Geophysics using a single 3-person crew. Data was acquired utilising 400x400m moving loops, with 200m sensor spacing in a slingram position. Areas selected for infill used the same set-up, but infilled the line spacing to 200m (from 400m).  Exploration on the West Kimberley Regional Joint Venture comprised airborne electromagnetic surveying with the Spectrem AEM system and preliminary low impact field reconnaissance at the Sentinel Project.  Independence Group NL geophysicists have reviewed, processed and modelled all geophysical data.
Drilling techniques	<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>	Air Core drilling was undertaken utilising an Eaton-Wallis Mantis 75, with 71mm pipe and an 80mm RC Aircore blade bit.
Drill sample recovery	<i>Method of recording and assessing core and chip sample recoveries and results assessed.</i>	Sample sizes were very consistent with the configuration of drilling and nature of the material encountered resulting in negligible sample loss.
	<i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i>	Sample material on the rig was constantly observed to ensure the cyclone remained clean. Water flush and manual cleaning occurs at regular intervals to ensure contamination is minimised.
	<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>	
Logging	<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>	All drill holes are geologically logged in their entirety.
	<i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i>	
	<i>The total length and percentage of the relevant intersections logged.</i>	
Sub-sampling techniques and sample preparation	<i>If core, whether cut or sawn and whether quarter, half or all core taken.</i>	All samples are unconsolidated and comprise sand, silt, clay and rock fragments.
	<i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i>	Samples were generated in their entirety at 1m intervals down hole. These were then spear composited at 4m intervals for potential assay purposes and a single 1m interval collected for each end of hole sample. The sample size is deemed appropriate for the material and analysis method.
	<i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i>	
	<i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i>	
	<i>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.</i>	Field duplicate samples are taken at a rate of 1 in 50.

	<i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i>	
Quality of assay data and laboratory tests	<i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i>	At this time no Air Core drilling samples have been assayed at a laboratory.
	<i>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.</i>	Ground EM: <ul style="list-style-type: none"> <li>- Transmitter: 80A</li> <li>- Receiver: SMARTem24</li> <li>- Sensor: JESSY DEEP low temperature squid</li> </ul> Handheld XRF: <ul style="list-style-type: none"> <li>- Readings are routinely taken during mapping and drilling however these analyses are only used for internal company purposes.</li> </ul>
	<i>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.</i>	Field QC procedures involved the use of certified reference material assay standards, blanks and duplicates for company QC measures, and laboratory standards, replicate assaying and barren washes for laboratory QC measures. The insertion rate of each of these QAQC measures averaged 1:20.
Verification of sampling and assaying	<i>The verification of significant intersections by either independent or alternative company personnel.</i>	No significant intercepts were observed during the recent Air Core drilling.
	<i>The use of twinned holes.</i>	No twinned holes were drilled during the recent Air Core drilling, however close spaced drilling was utilised to determine the extents of subsurface geology.
	<i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i>	All data is collected initially on paper and handheld GPS. This data is hand entered to spread sheets and validated by Company geologists. This data is then imported into the company database and extra validation is carried out. Physical data sheets are stored at the company office. Digital data is securely archived on and off-site.
	<i>Discuss any adjustment to assay data.</i>	Not applicable, there has been no adjustment to assay data.
Location of data points	<i>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.</i>	Handheld GPS (+/-5m) as well as reference to topographical, remote sensing and known reference points.
	<i>Specification of the grid system used.</i>	MGA51 (GDA94).
	<i>Quality and adequacy of topographic control.</i>	GPS data has been used for topographic control and is deemed sufficient for this stage of exploration.
Data spacing and distribution	<i>Data spacing for reporting of Exploration Results.</i>	The programs are reconnaissance and spacing is deemed appropriate for this stage of exploration.
	<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>	
	<i>Whether sample compositing has been applied.</i>	
Orientation of data in relation to geological structure	<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>	The programs are reconnaissance and orientation are deemed appropriate for this stage of exploration.
	<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>	
Sample security	<i>The measures taken to ensure sample security.</i>	Samples were packaged and stored in secure storage from the time of gathering through to submission. Laboratory best practice methods were employed by the laboratory upon receipt. Returned pulps will be stored at a secure company warehouse.
Audits or reviews	<i>The results of any audits or reviews of sampling techniques and data.</i>	No audits of the sampling techniques or data were carried out due to the early stage of exploration. It is considered by the Company that industry best practice methods have been employed at all stages of the exploration.

## JORC Table: Section 2 – Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
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.</i>	<p>The Merlin, Quick Shears Prospects and the West Kimberley Joint Venture are located in the West Kimberley region of Western Australia.</p> <p>The Merlin (Double Magic) Ni-Cu-Co Project consists of 3 granted exploration licences (E04/1533, E04/2026 &amp; E04/2142) held in the name of Alexander Creek Pty Ltd. Alexander Creek Pty Ltd is a wholly (100%) owned subsidiary of Buxton Resources Limited. The Merlin Project tenements are subject to a 24-month option period where Independence Group NL (IGO) has the exclusive right to strike an earn-in and JV agreement [readers are referred to ASX:BUX announcement on the 29 November 2018 for further information].</p> <p>The Quick Shears Project consists of 3 granted exploration licences (E04/1972, E04/2314 &amp; E04/2423) held in the name of Timothy Vincent Tatterson or Fissure Exploration Pty Ltd. Buxton acquired New World Cobalt Limited's (formally Ram Resources Limited) rights and interest in the Quick Shears Project [readers are referred to ASX:BUX announcement on the 6 November 2018 for further information].</p> <p>West Kimberley Joint Venture consists of 43 exploration licences and 1 prospecting licence held in the name of Buxton Resources Limited, Alexander Creek Pty Ltd and Baracus Pty Ltd. See Figure 2 in the body of the release for tenement land holding.</p>
	<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>	The tenements are in good standing with DMIRS and there are no known impediments for exploration on these tenements.
Exploration done by other parties	<i>Acknowledgment and appraisal of exploration by other parties.</i>	Historical exploration on the Quick Shears tenements was limited to a single phase of work conducted by Ram Resources Limited (ASX:RMR) during the period 2015-2016. This comprised a helicopter EM survey (VTEM), ground EM and three diamond drill holes on E04/1972.
Geology	<i>Deposit type, geological setting and style of mineralisation.</i>	<p>Known mineralisation at the Merlin Project is considered to be primary orthomagmatic intrusion related Ni-Cu-Co sulphide. Recently observed mineralisation on the Quick Shears tenure appears to be of the same nature.</p> <p>The Project areas lie within the Palaeoproterozoic Hooper Province of the King Leopold Orogen in the Kimberley region of Western Australia. The geology of the Project is characterized by a thick turbiditic meta-sediments and silicic volcanics of the Marboo Formation which are intruded by the Ruins Dolerite intrusive suite.</p> <p>The Ruins Dolerite is a medium- to fine-grained mafic-ultramafic intrusive that is host to the known nickel-copper sulphide mineralization. This mineralization is interpreted to represent primary orthomagmatic sulphide mineralization, however, there appears to be re-mobilisation and alteration of the mineralization in places.</p>
Drill hole Information	<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>	A figure showing all drill hole collars is included in the body of the release. No holes intersected Ni-Cu sulphide mineralisation and thus no holes are deemed Material. All holes were drilled vertically.
	<i>o easting and northing of the drill hole collar</i>	

	<ul style="list-style-type: none"> <li>o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>o dip and azimuth of the hole</li> <li>o down hole length and interception depth</li> <li>o hole length</li> </ul> <p>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.</p>	
<i>Data aggregation methods</i>	<p>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.</p> <p>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.</p> <p>The assumptions used for any reporting of metal equivalent values should be clearly stated.</p>	Not applicable, there has been no data aggregation or metal equivalents reported.
<i>Relationship between mineralisation widths and intercept lengths</i>	<p>These relationships are particularly important in the reporting of Exploration Results.</p> <p>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</p> <p>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').</p>	Not applicable, no mineralisation widths or intercepts have been reported.
<i>Diagrams</i>	<p>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.</p>	See text, tables and figures in body of release.
<i>Balanced reporting</i>	<p>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.</p>	Not applicable, all exploration results have been reported.
<i>Other substantive exploration data</i>	<p>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.</p>	There is no other exploration data that is deemed to be meaningful or material.
<i>Further work</i>	<p>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</p> <p>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</p>	<p>Due to the early stage of exploration on Quick Shears tenure this is still to be established.</p> <p>See text and figures in body of release.</p> <p>Regionally, the extensive land package containing significant exposure of the nickeliferous host Ruins Dolerite are of exploration interest.</p>