

ASX Announcement | 12th June 2025

Litchfield Identifies up to 44.9% HMS in creek beds in first pass exploration

Highlights

- **Up to 44.9%** heavy minerals recovered from bulk stream sediment samples at Oonagalabi (EL32279).
- Average of 57.3% sand fraction across all samples.
- Garnet is visually dominant, with further mineralogical testing underway to confirm any presence of ilmenite, rutile, zircon and REE-bearing phases.
- Over 7km² of prospective alluvial horizons identified at Oonagalabi.

Also

- Historical hard rock sampling at Paradise Well (EL32190) south of Oonagalabi found up to 40% titaniferous magnetite in samples, with accessory minerals including allanite (1–2%), zircon, xenotime and apatite.
- Paradise Well has approximately 50km² of flat-lying quaternary alluvial cover derived from a similar source as active drainages.
- Historical mapping at Paradise Well (EL32190) identified monazite content of up to 40% in basement outcrop, supporting the broader regional potential for heavy mineral sands (HMS) and rare earths, thus providing a strong exploration model.

Litchfield Minerals Limited (ASX: LMS) has received very early-stage external interest in accessing heavy mineral sands (HMS) on our leases. After initial bulk stream sampling, Litchfield is pleased to report encouraging first-pass physical characterisation results within the Oonagalabi tenement, located in the Harts Range region of the Northern Territory.

In early October 2024, Litchfield identified that the Oonagalabi tenement package and surrounding areas hosted numerous creek beds and alluvial deposits enriched in heavy mineral sands (HMS). This observation was supported by widespread visible indications at surface of garnet and other dense minerals.

In February 2025, the Company conducted a small sampling campaign along a 1km stretch of creek bed, west of the Oonagalabi deposit (**Figure 1**). Field reconnaissance confirmed extensive visible garnet and subordinate heavy mineral accumulations within surface and near-surface horizons, which has now been supported by the initial physical characterisation results from this program.

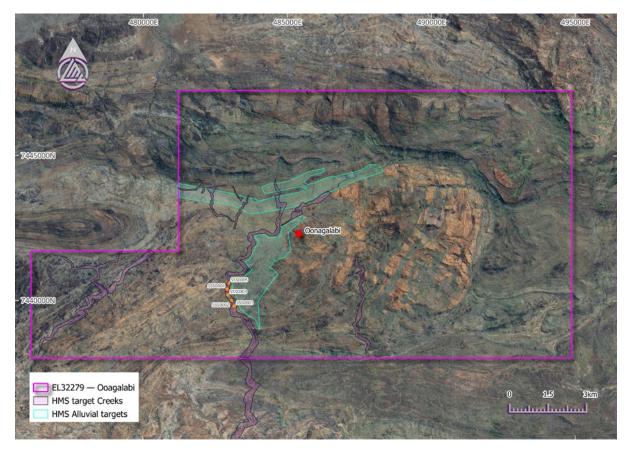


Figure 1. EL 32279 showing the location of the five bulk samples and identified alluvial target zones.

Managing Director Matt Pustahya commented:

"These results are an exciting first step to meet the potential demand for materials that could be mined on our leases. Sampling along the creek bed west of Oonagalabi has confirmed what we initially observed in the field - exceptional concentrations of heavy minerals. We look forward to unlocking the full potential of this system through further test work and evaluation to assess extraction pathways and another possible income stream."

Initial Results Overview

Sampling consisted of 5 x 20kg bulk samples of sand taken from the active Clarence River creek bed (**Figure 1**). Samples were collected at pre-determined locations every 200m over a 1km stretch of the active drainage. A single sampling site was then selected within 10m of the pre-determined location. It is important to note that heavy mineral concentration within the selected sampling sites may not be representative of the broader active drainage system.

Screening and specific gravity classification was completed on the five creek bed samples and yielded highly encouraging heavy mineral recoveries:



	Oversize	Oversize	Oversize	Fines	Sand	Lights	Heavies
Sample	+2.0mm	+1.0mm	+850μm	-53μm	"+53μm - 850μm	-2.85sg	+2.85sg
Number	%	%	%	%	%	%	%
SSS0001	15.8	24.2	11.3	0.3	48.4	17.3	31.1
SSS0002	5.7	18.6	11.1	0.3	64.3	27.2	37.1
SSS0003	8.2	20.3	10.8	0.5	60.1	20.5	39.6
SSS0004	7.4	23.7	11.9	0.2	56.7	12.6	44.1
SSS0005	6.0	23.3	13.3	0.3	57.0	12.2	44.9

Table 1. First-pass physical characterisation data. Note, Lights and Heavies are a percentage of the total sample.

Sample	Sand Fraction (%)	Heavies as % of Total	Heavies as % of Sand
		Sample (+2.85sg)	
SSS0001	48.4	31.1	~64%
SSS0002	64.3	37.1	~58%
SSS0003	60.1	39.6	~66%
SSS0004	56.7	44.1	~78%
SSS0005	57.0	44.9	~79%

Table 2. Results broken down further as a percentage of the sand-size fraction.

Key observations:

- Heavy minerals (+2.85sg) ranged from 31.1% to 44.9% as a total percentage of the 20kg bulk samples.
- The sand-size fraction (target for HMS processing) averaged 57.3% across all samples.
- Garnet is visually dominant (**Figure 2**), with other heavy minerals yet to be confirmed through upcoming QEMSCAN and XRD mineralogical analysis.



Figure 2. Grab sample of garnet-rich sand from the Clarence River (estimated 40% visible garnet).

Garnet Market Overview

Garnet is a key industrial mineral widely used as an abrasive in waterjet cutting, sandblasting and filtration. Global demand has grown steadily, driven by the manufacturing, aerospace and infrastructure sectors.



- Estimated global market size: Over USD \$600 million per year and growing.
- Typical garnet concentrate pricing: Between USD \$200 to \$250 per tonne, depending on grade, grain size, and end use (<u>USGS</u>, <u>2020</u>).
- Premium garnet products (e.g. waterjet grade) can command even higher prices, especially in regions where supply is constrained (SanHui Abrasives, 2025).

Next Steps

- Complete mineralogical analysis (QEMSCAN and XRD) of samples from Oonagalabi to confirm mineral assemblage (4-6 weeks).
- Assess HMS source and tonnage potential.
- Extend sampling across other nearby creek systems and floodplains at Oonagalabi.
- Assess potential extraction pathways in consultation with existing or new industry partners.
- Extend sampling across other nearby creek systems and floodplains at Paradise Well.

Additional Potential at Paradise Well

In parallel, the Company's Paradise Well tenement (EL 32190) — located south of Oonagalabi — has historically demonstrated strong HMS potential (**Figure 3**). A 1989 government report (CR1989-0585) describes widespread monazite and associated heavy mineral occurrences, which Litchfield will incorporate into its broader HMS exploration strategy and potential income streams.

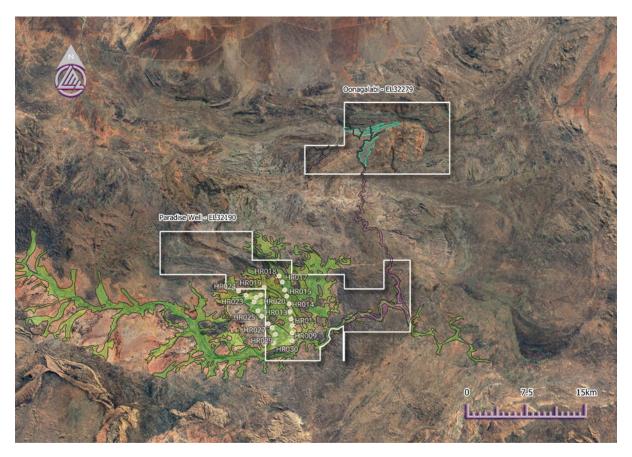


Figure 3. EL 32279 Oonagalabi and EL 32190 Paradise Well tenement locations showing NTGS mapped alluvial systems on Paradise Well and interpreted alluvial systems on the Oonagalabi tenements. Also shown are Alcoa's rotary drillhole traverse locations on the Paradise Well tenement.

Historic work conducted at Paradise Well, under EL6105, confirmed the presence of exceptionally high-grade heavy mineral concentrations in basement outcrops. Three rock samples collected from the area were analysed by Pontifex & Associates and CSIRO, with monazite content ranging from 5 - 40% in hand specimen (CR1989-0585). The samples also hosted significant levels of magnetite (up to 40%), and accessory minerals including allanite (1–2%), zircon, xenotime, apatite and garnet — all commonly found in valuable heavy mineral sands (HMS) deposits (CR1989-0585).

The monazite grains, ranging from **0.1mm to 1mm**, were unaltered and showed clean internal cleavage, indicating excellent liberation potential. Allanite, a key REE-bearing mineral, was also observed within magnetite-rich zones, suggesting a broader rare earth element (REE) association in the system. The loose-packed, granuloblastic texture of the rocks indicates that mechanical separation of the heavy mineral fraction is feasible, further enhancing the prospectivity of the area.

Alcoa completed two rotary mud drillhole traverses (22 holes, 945m) across central west part of the Paradise Well tenement and demonstrated an average depth to basement of 32m for the overlying Quaternary alluvial cover (CR19800125). Sand deposits within the cover sequence reached a maximum thickness of 23m. Alcoa was solely focused on roll-front



uranium-type mineralization and completed downhole gamma logging on all holes, however, did not complete any HMS analysis or provide any geological interpretation relating to heavy mineral sands potential. The NTGS has mapped approximately 50km² of alluvial cover within the Paradise Well tenement (Alice Springs 250k Mapsheet SF53-14).

These findings validate Paradise Well as a highly prospective HMS and REE exploration target. Given its proximity to the newly sampled creek systems at Oonagalabi, Paradise Well is expected to form a key part of Litchfield's broader strategy to explore and define rare earth and heavy mineral deposits across the region in order to establish a separate income streams.

Cautionary Statement

This announcement contains forward-looking statements that involve known and unknown risks, uncertainties, and other factors that may cause actual results, performance, or achievements to differ materially from those expressed or implied. Such statements include but are not limited to, interpretations of geophysical data, planned exploration activities, and potential mineralisation outcomes. Forward-looking statements are based on Litchfield Minerals Limited's current expectations, beliefs, and assumptions, which are subject to change in light of new information, future events, and market conditions. While the Company believes that such expectations and assumptions are reasonable, they are inherently subject to business, geological, regulatory, and operational risks. Further work, including drilling, is required to determine the economic significance of any anomalies identified. Investors should not place undue reliance on forward-looking statements. Litchfield Minerals Limited disclaims any obligation to update or revise any forward-looking statements to reflect events or circumstances after the date of this announcement, except as required by law.

About Litchfield Minerals

Litchfield Minerals is a critical mineral explorer, primarily searching for base metals and uranium out of the Northern Territory of Australia. Our mission is to be a pioneering copper exploration company committed to delivering cost-effective, innovative and sustainable exploration solutions. We aim to unlock the full potential of copper and other mineral resources while minimising environmental impact, ensuring the longevity and affordability of this essential metal for future generations. We are dedicated to involving cutting-edge technology, responsible practices and stakeholder collaboration drives us to continuously redefine the industry standards and deliver value to our investors, communities and the world.

The announcement has been approved by the Board of Directors.

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Competent Person's Statement

The information in this announcement relates to Exploration Results and is based on, and fairly represents, information and supporting documentation compiled by Mr Russell Dow (MSc, BSc Hons Geology), a Competent Person who is a Member of the Australian Institute of Mining and Metallurgy (AusIMM) and is a full-time employee of Litchfield Minerals Limited. Mr Dow has sufficient sampling experience that is relevant to the style of mineralisation and types 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" (JORC Code). Additional specialist advice with respect to heavy mineral sands sample results reporting has been provided by Mr Simon Tear (H&S Consultants Pty Ltd). Mr Dow and Mr Tear individually consent to the inclusion in the Public Report of the matters based on their information in the form and context in which it appears. With regard to the Company's ASX Announcements referenced in the above Announcement, the Company is not aware of any new information or data that materially affects the information included in the Announcements.



JORC Code, 2012 Edition – Table 1 report

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 (e.g. '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 	 hole using a shovel at 200m intervals along a selected stretch of the Clarence River. Sample sites were selected to allow for sampling of ideal heavy mineral trap sites. Samples collected at each site are considered representative of each specific trap site. Not enough sampling has been completed to determine if garnet concentrations in the sampled trap sites are representative of the broader Clarence River sands. The 20kg samples were sent to a commercial laboratory for screening of different size fractions. The sand fraction was subject to dense media gravity separation (2.85sg) to give a percentage of heavy minerals in each of the samples. Heavy mineral samples from the sand size fraction



Drilling techniques	 there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information. Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is 	No new drilling is reported.
Drill sample recovery	 oriented and if so, by what method, etc). 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 new drilling is reported. The 20kg samples are considered to be bulk samples and no selective sampling was undertaken at each sample location.
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 relevant intersections logged. 	 No new drilling is reported. Geological observations were recorded for each trap site including visual coarse-grained garnet estimates and nature of the trap site.

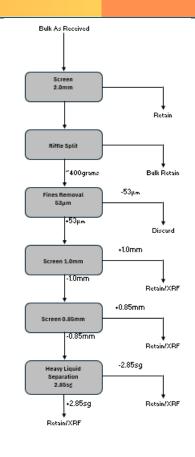


Subsampling techniques and sample preparation

- 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 new drilling is reported.
- No sub-sampling was undertaken.
- Sample representivity was ensured by collecting 20kg bulk samples.
- Samples were dried at 80-100°C, weighed and screened at 2.0mm, then riffle split to produce a ~400g sample for characterisation. Characterisation of the 400g sample included washing at 53micron to determine the level of fines, screening at 1.0mm and 850micron to determine oversize and heavy liquid separation to determine heavy mineral at 2.85sg (see flow diagram below).
- Sample sizes are considered appropriate for bulk physical characterisation studies.
- No QAQC procedures were adopted.





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
- Chracterisation of the 400g sample included, washing at 53micron to determine the level of fines, screening at 1.0mm and 850micron to determine oversize and heavy liquid separation (lithium and sodium heteropolytungstates) to determine heavy mineral (+ 2.85sg) of the total sample.



	 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. 	 All samples, excluding the -53micron fraction, have been submitted for full XRF analyses to determine typical mineral sands oxide levels. No QAQC procedures adopted.
Verification of sampling and assaying	 The verification of significant intersections by either independent or alternative company personnel. The use of twinned holes. Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. Discuss any adjustment to assay data. 	No new drilling reported
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. 	 A Garmin Handheld 66 series GPS was used to locate sample sites (±3m accuracy). Co-ordinates are in GDA94 datum, Zone 53. Topographic data is supported by digital elevation model.
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 applied. 	 20kg bulk samples were collected on a 200m spacing along the Clarence River. Grade distribution within the Clarence River is variable and not enough information is available to determine if a 200m sample spacing is sufficient to establish the degree of grade continuity appropriate for Mineral Resource estimation procedures.



Orientation of data in	•	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this	• Samples were collected parallel to the downstream direction of the Clarence River.
relation to geological structure	•	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.	 Lateral sampling across the Clarence River alluvial plain has not been completed and therefore no information on any potential bias with the sampling is available.
Sample security	•	The measures taken to ensure sample security.	 Samples were transported directly from the Oonagalabi project to RZ Resources in Brisbane in individual polyweave bags secured with zip ties.
Audits or reviews	•	The results of any audits or reviews of sampling techniques and data.	 Continuous improvement internal reviews of sampling techniques and procedures are ongoing. No external audits have been performed.



Section 2 Reporting Exploration Results

(The 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. 	 Tenement includes Oonagalabi (EL32279) for a total of 145.3km² and 46 sub-blocks and Paradise Well (EL32190) for a total of 248.6km² and 82 sub-blocks. EL32279 and EL32190 are owned by Kalk Exploration Pty. Ltd., a 100% owned entity of Litchfield Minerals Limited. The tenements are located approximately 125km northeast of Alice Springs on pastoral leases. The tenements are in good standing and there are no known impediments.
Exploration done by other parties	 Acknowledgment and appraisal of exploration by other parties. 	 A summary of previous EL32279 exploration and mining is presented below: Oonagalabi was discovered in the 1930's. In 1970, Russgar Minerals completed regional mag-rad survey, VLF_EM survey, ground magnetic survey, single line resistivity traverse and 14 drillholes. In 1971, Geopeko completed limited IP. 1979, Amoco completed photointerpretation, rock chip sampling and drilling (8 holes).



- 1981 D'Dor Mining NL completed limited dipole-dipole IP.
- Between 1990 1996 on EL 6940 Clarence River Finance Group explored for garnet in the Florence and Maud Creeks, collecting 15 samples that averaged 4.4% garnet.
- Between 1997 2000 on EL 9420 Clarence River Finance Group completed garnet exploration north of Oonagalabi EL32279. In 2007, ML 22624 was applied for to cover the central Oonagalabi deposit and surrounding proximal alluvial systems (outside 2025 bulk sampling area). No work was completed and the ML was relinquished in 2019.
- Silex 2009 completed pole-dipole IP 1 x diamond hole.
- A summary of previous EL32279 exploration and mining is presented below:
- In 1980, Alcoa completed 22 rotary mud drillholes, targeting roll-front uranium type mineralisation (CR19800125).
 Gamma logs were completed for all holes, average depth to basement was 32m and Quaternary sands reached a maximum of 23m. No HMS analyses were completed.
- In 1988, Pan Continental collected 54 stream sediment samples in the search for REE's by targeting areas of regional thorium anomalism from airborne magnetic surveys. La anomalies were identified throughout EL6105 and identified Cu-Au anomalies required follow-up.



- Inminerals Pty. Ltd. collected 18 bulk samples on EL9595 in 1990 around the Florence Creek (3 9% garnet grades plus other minerals).
- Additional garnet sampling was completed by GMA Garnet Pty. Ltd on EL8176 in 1995 where 42 bulk samples were collected along a long stretch of the Hale River. Garnet grades were considered too low to be economically viable.
- Chambigne (EL8004) continued garnet sampling in 1997, collecting 16 low-grade samples.
- Additional garnet sampling was completed by United Origin Ltd in 2009 who collected two 5kg bulk samples where the Florence Creek joins the Hale River (both exceeded 30% garnet).
- The REE potential of the EL was highlighted by a report from Pontifex and Associates (1989), who describe three rocks and associated thin sections identified as Paradise Well 1, 2 and 3 (CR1989-0585). No locations were given for these samples in this or the annual report it was appended too (Murrell, 1989). Monazite ranged from 5 40%. Additional hard rock sampling identified titaniferous magnetite up to 40% with accessory allanite, zircon, xenotime, apatite and garnet.
- Modern base metal exploration started in 2013 when Core Exploration Limited pegged EL29304 and 29667.



		 Core discovered multiple copper-dominated base meta systems, flew new 100m airmag / radiometrics. Core collected 314 soil and 42 rock chip samples at the Paradise Well prospect. A further 134 soils and 27 rock chip samples were collected at the Paradise Well South and New Paradise Well prospects. Grades of up to 6.16% Cu and 0.84g/t Au were reported in a very coarse garnet (4-5mm) + quartz ± carbonate unit. In March 2014 Core collected 763 soil samples on a 200m grid in its Great Paradise Well project defining multiple base metal geochemical anomalies.
Geology	Deposit type, geological setting and style of mineralisation.	 Heavy mineral sand mineralisation is present within active alluvial drainages and associated overbank deposits. The bulk of the heavy minerals are interpreted by Litchfield to be sourced from erosion of the Mt Riddock Amphibolite (and equivalents), a package of sedimentary and igneous intrusive rocks within the Harts Range, NT, that have undergone multiphased deformation and metamorphism. Additional REE and HM mineralisation has been observed in pegmatites and complex structural zones within the interpreted metamorphic basement source rocks.
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. 	
	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.	
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 methods were used during bulk sampling.
Relationship between mineralisatio n widths and	 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. 	No drilling results reported. The bulk samples were collected parallel to the flow direction of the Clarence River.



 If it is not known and only the down hole lengths are lengths reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known'). 	
'down hole length, true width not known').	
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 Diagrams ● Appropriate maps and sections (with scales) and tabulations ● See figures within the main body o 	f the announcement.
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.	
• Where comprehensive reporting of all Exploration Results is • All available relevant information is	presented.
reporting not practicable, representative reporting of both low and	
high grades and/or widths should be practiced to avoid	
misleading reporting of Exploration Results.	
Other ● Other exploration data, if meaningful and material, should be ● See the main body of this r	eport for all pertinent
substantive reported including (but not limited to): geological observations and interpretations.	Visual garnets reached up
<i>exploration</i> observations; geophysical survey results; geochemical survey to an estimated 30% in bulk sample	es. A magnet was used to
data results; bulk samples – size and method of treatment; confirm that dark minerals were	e dominantly magnetite.
metallurgical test results; bulk density, groundwater, Historical garnet sampling confirm	ms garnet mineralogy as
geotechnical and rock characteristics; potential deleterious almandine.	
or contaminating substances.	
Further work • The nature and scale of planned further work (e.g. tests for Future planned exploration includes:	
lateral extensions or depth extensions or large-scale step-out	
drilling). ● QEMSCAN and XRD mineralogy and	•
 Diagrams clearly highlighting the areas of possible Additional bulk stream sediment satisfies 	ampling
extensions, including the main geological interpretations and	



future drilling areas, provided this information is not commercially sensitive.

• Geological mapping to assess the potential size of alluvial deposits at Oonagalabi.