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ARK MINES
LTD.

INVESTOR PRESENTATION

Multi-commodity strategy with near term development

May 2023

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Corporate Snapshot



AHK
ASX Code



44,615,728
Shares on Issue



~\$0.32
Share Price



15,172,500
Options on Issue



\$14.3M
Market Capitalisation



\$2.01M
Cash as at 21 Dec 2022



Roger Jackson - Executive Chairman

30+ years in exploration, development and mining operations



Benjamin Emery - Executive Director

30+ years in exploration, development and mining operations



Ian Mitchell - Non-Executive Director

30+ years in exploration, development and mining operations

Share Price & Volume



Top 20 Shareholders



INVESTOR HIGHLIGHTS**MULTI-COMMODITY
NEAR-TERM PROJECT
DEVELOPER FOCUSED
ON AUSTRALIA****01. The Upside**

Projects with low start-up capex and near-term development potential with exploration upside.

02. The Focus

Primary focus is on critical minerals – rare earths, nickel and copper.

03. Project Must-haves

Access to quality nearby infrastructure, favourable regulatory regime, safe jurisdiction, ease of permitting.

03. Experienced Team

Underpinned by a team with mine development, commodities trading, and exploration skills.


Project Summary

3 Quality projects in a Tier 1 mining jurisdiction



Sandy Mitchell Rare Earths Project

- 147km² EPM 28013 'Sandy Mitchell' – an advanced Rare Earths Project in North Queensland + 138km² of sub blocks under application
- Very high historical TREO grades including high grade pan concentrates of:
 - > 18.4% TREO, 17.4% TREO, 15.8% TREO, 15.3% TREO, 12.3% TREO, 9.4% TREO, 4.7% TREO and 3.3% TREO
 - > NdPr ratios up to 25%
- Extensive historical work undertaken by Jogmec in 2010
- Project contains all critical Light Rare Earths as well as Heavy Rare Earths including dysprosium (Dy), terbium (Tb), holmium (Ho), erbium (Er), thulium (Tm) ytterbium (Yb), yttrium (Y) and excluding only Lutetium
- Rare Earths are amenable to panning a concentrate
- Placer deposit (sand based): low-cost, fast start up, straightforward beneficiation by gravity processing



Gunnawarra Nickel-Cobalt Project

- Borders Australian Mines Limited Sconi Cobalt-Nickel-Scandium project – the most advanced Cobalt-Nickel-Scandium Project in Australia
- Comprised of 11 sub-blocks covering 36km²
- Maiden mineral resource estimate totalling 1.341 million tonnes at .53% Ni, 602,000 tonnes Cobalt at .066% and 191,500 tonnes of Copper at .054% at a .4% Ni cut off
- Potential synergies with local processing facilities with export DSO Nickel/Cobalt partnership options



Mt Jessa Copper-Iron Project

- Project covers a tenure area of 12.4km² located ~25km west of Mt Garnet
- Centered on a copper rich magnetite skarn associated with porphyry style mineralization
- Three exposed historic iron formations
- Potential for near term production via toll treat and potential to direct ship

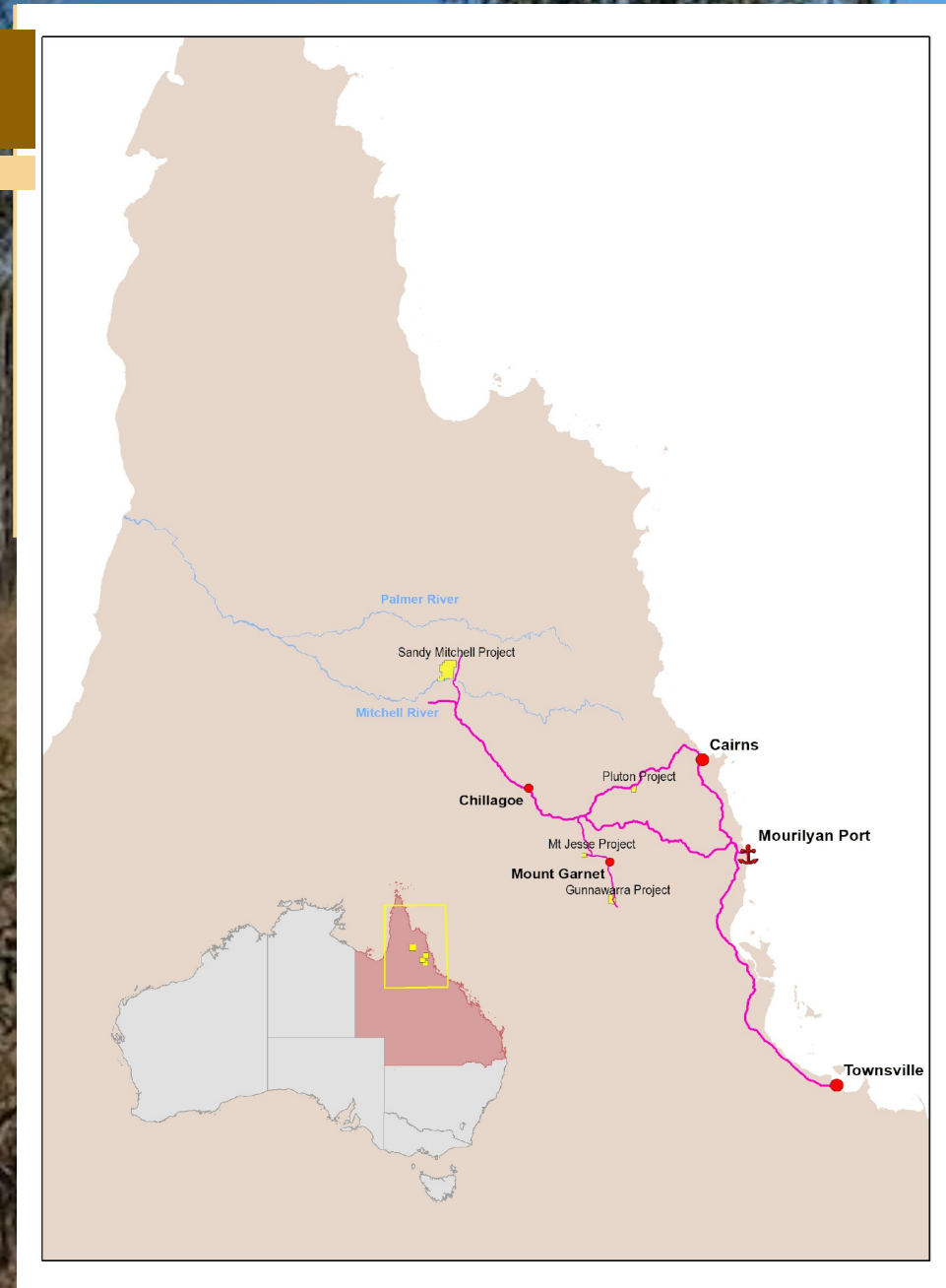
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Sandy Mitchell

REE HM Project location

- 300km west of Cairns and 100km North of Chillagoe



Australian Rare Earths

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Strategic Acquisition

- Advanced REE Project in North Queensland (EPM 28013)
- Existing exploration area of 147km², with additional 46 sub-blocks covering 138km² of sub-blocks under application
- Attractive acquisition terms; project secured \$200,000 cash (vendor had limited interest in follow-up exploration)



High-grade Rare Earths

- Historical works by JOGMEC¹ in 2010 includes particle mineral analysis and pan concentrates + other undertaking ~100 augur drill holes
- Project contains all 8 critical Light Rare Earths elements and 8 of the 9 Heavy Rare Earths (excluding only Lutetium)
- Pan concentrates are the best measure of Rare Earths elements in sands; amenable to rapid, low-cost beneficiation by gravity processing
- Initial extraction to focus on Light Rare Earths, which were well represented in historical sampling



Forward Works Program

- Extensive review of historical data and pan concentrates underway to define a Historic Mineral Resource Estimate (MRE) under the 2012 JORC code
- 1,000 metre infill and extension drill program commenced 17 May, metallurgical test work and gravity separation
- Commence application for a Mining Licence

Historical Panned Concentrate sampling results

show excellent grades for TREO (Total Rare Earth Oxide) with high percentage NdPr ratios

Outstanding Historical Treo Grades

SAMPLE	GRADE	NDPR RATIO AS % OF TREO
451	18.4%	24.6%
450A	17.4%	24.5%
452A	15.8%	24.2%
430A	15.3%	25.0%
452A2	12.3%	23.7%

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Advanced in Comparison

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→ Placer deposits have distinct advantages over hard rock and clay-based rare earth projects

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	Placer (Sandy Mitchell)	Ionic Clays	Hard Rocks
CAPEX	→ Capex lite and utilizing low-cost skid-mounted gravity plant to deliver a concentrate. Mining cost and operating cost > negligible	Reasonable	Capex Heavy, Overburden/strip development costs, Mining costs high
SCALE	→ Potential to be massive tonnage	Typically, smaller tonnage	Typically require significant scale for economic viability
EXPLORATION	→ Resources can be defined inexpensively and rapidly given shallow drilling using aircore, auger, push-tube core	Resources can be defined inexpensively and rapidly given shallow drilling using aircore, auger, push-tube core	Similar to other hard rock base metals requiring substantial drilling, geochemistry, geophysics etc
MINING	→ Stripping and progressive rehabilitation. No Overburden Zero strip ratio. Mined with a wheeled loader only	Stripping and progressive rehabilitation. Many have overburden and some strip ratio	Drill and blast with significant mining fleet. Higher strip ratios or expensive underground mining and development
PERMITTING	→ Simple in situ gravity processing with the sand put back where it was moved from	Due to water processing and chemicals Environmental challenges will need to be met	Significant environmental impact
PROCESSING	→ Simple metallurgy; Gravity and magnetic in-situ processing, no water, continuous rehabilitation > Nature has already done our crushing and grinding > Mineral sands bi-product	Simple metallurgy; clay is washed with a desorption agent to recover REEs	Strong acids with high temperature +/- pressure. Radioactive tailings

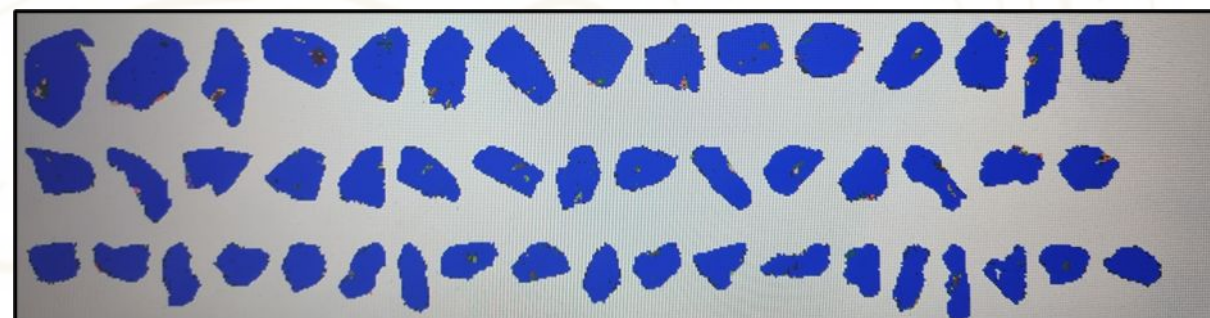
Nature Did The Work For Us

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JOGMEC¹ Mineral Particle Analysis

JOGMEC1 in 2010 undertook a comprehensive particle mineral analysis of the Sandy Mitchell Rare Earths and Heavy Minerals



Monazite Grains Are Almost Pure

Their findings - Classification of the Monazite into categories based on the type and proportion of associated minerals is shown below. The results show that the majority of the monazite (about 90%) occurs as clean monazite containing less than 5% of included or attached impurities.

In Comparison;

The process to get a particle in hard rock rare earths

- Overburden removal
- Underground Development
- Drill and Blasting
- Haulage
- Primary Crushing
- Secondary Crushing
- Grinding
- Classification

MONAZITE ASSOCIATIONS (mass %)

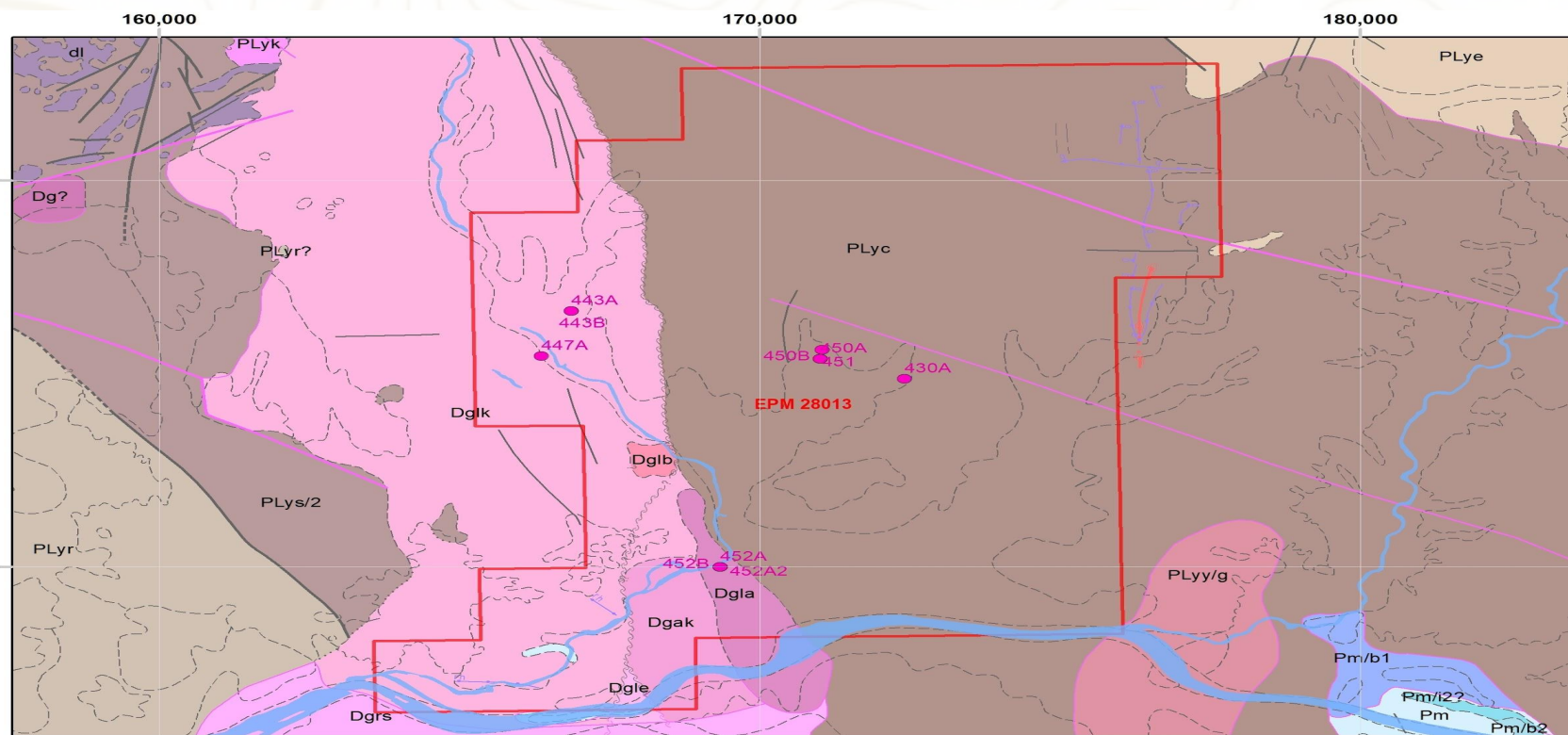
Sample	Particles composed of > 99% monazite	Particles composed of 95% - 99% monazite	Particles with monazite > 80% and Zircon > 2%	Particles with monazite > 80% and Chlorite > 2%	Particles with monazite > 80% and Quartz > 2%	Particles with monazite > 80% and Clay > 2%	Other monazite bearing particles with Monazite > 90%	Other monazite bearing particles with Monazite > 80%	Other monazite bearing particles with Monazite < 80%	TOTAL
650	31.31%	56.84%	0.97%	1.14%	1.33%	2.97%	43.58%	0.66%	0.21%	100.00%

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Globally Competitive REE Grades

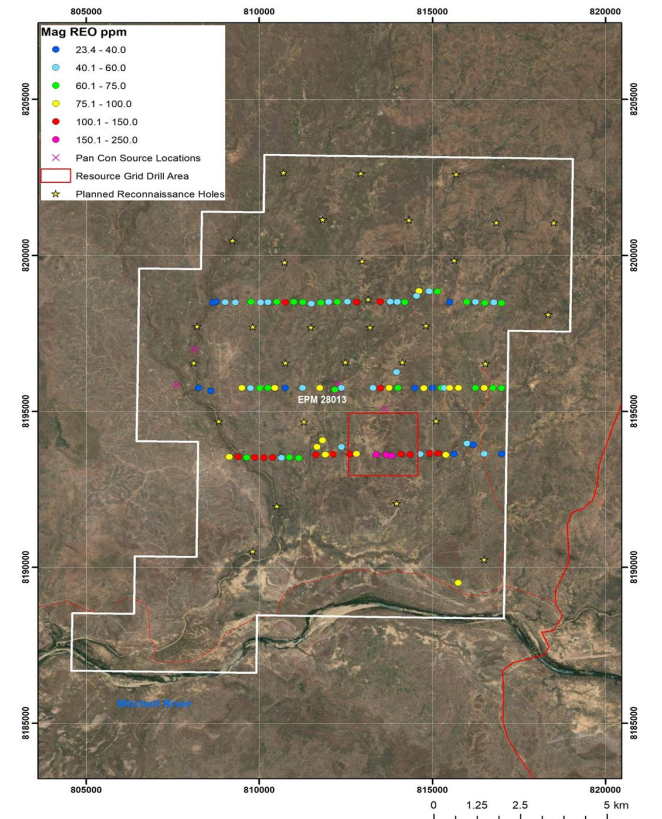
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Pan Sampling Program

- Historical work program includes partial mineral analysis and pan concentrates, plus ~100 auger drill holes (refer previous page)
- From a total of 10 pan concentrate samples, five returned historical TREO grades of more than 100,000 ppm (refer below left)



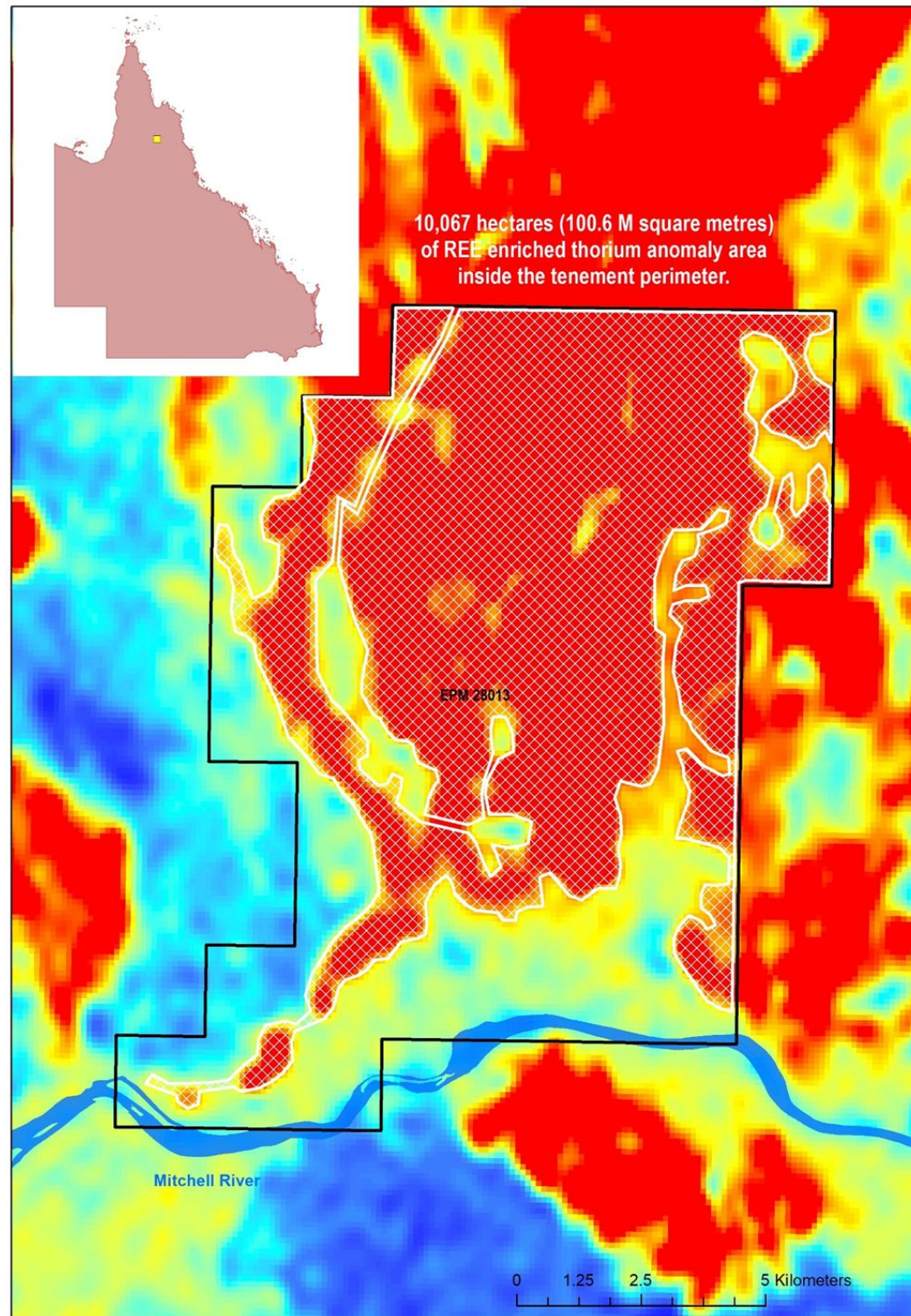
Grid Drilling in Red Box – reconnaissance yellow stars

Sample	E	N	Samp Type	TREO	LREO	HREO	CREO	Mag Reo	Sc ₂ O ₃	La ₂ O ₃	CeO ₂	Pr ₆ O ₁₁	Nd ₂ O ₃	Sm ₂ O ₃	Eu ₂ O ₃	Y ₂ O ₃	Tb ₄ O ₇	Dy ₂ O ₃	Ho ₂ O ₃	Er ₂ O ₃	Tm ₂ O ₃	Yb ₂ O ₃
	MGA94z54	MGA94z54		ppm	%	%	%	%	ppm	%	%	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
430A	813624	8195067	Pan Con	153,969	95.4	4.6	23.7	25.9	225.5	3.26	7.10	8,288	2.9976	4,650	120.4	4,749	349.3	1,285	174.1	354.5	29.7	160.56
443A	808124	8196989	Pan Con	94,180	95.5	4.5	23.1	25.3	220.9	2.05	4.34	5,014	1.7846	2,876	88.5	2,806	197.6	797	103.8	215.0	19.6	109.77
443B	808125	8196989	Pan Con	17,554	91.1	8.9	25.5	24.3	309.8	0.35	0.76	887	0.3126	513	25.5	1,062	46.6	211	37.1	99.0	13.6	90.185
447A	807601	8195835	Pan Con	47,376	95.0	5.0	23.7	25.6	123.0	1.02	2.16	2,525	0.904	1,450	56.0	1,549	120.0	457	58.2	114.4	9.7	50.786
450A	812239	8195625	Pan Con	174,126	95.9	4.1	23.0	25.6	171.8	3.75	8.11	9,351	3.3359	5,369	135.5	4,661	407.0	1,400	173.0	335.0	25.9	133.23
450B	812239	8195625	Pan Con	17,929	90.6	9.4	26.1	24.6	300.6	0.35	0.77	904	0.3231	525	24.0	1,156	47.0	220	39.7	109.0	15.0	100.21
451	812274	8195859	Pan Con	184,777	95.8	4.2	23.1	25.6	199.4	3.99	8.59	9,895	3.5459	5,624	162.1	5,029	441.1	1,515	184.4	355.6	28.1	144.61
452A	810407	8190286	Pan Con	158,691	95.8	4.2	22.7	25.2	170.3	3.48	7.37	8,518	2.9743	4,859	143.6	4,407	381.1	1,308	162.7	313.3	24.3	125.26
452B	810407	8190286	Pan Con	30,334	93.8	6.2	24.4	25.3	233.1	0.63	1.36	1,583	0.5715	914	36.6	1,261	74.9	304	45.0	107.0	12.6	79.14
452A2	810408	8190286	Pan Con	123,058	95.7	4.3	22.8	24.7	135.0	2.73	5.72	5,932	2.3211	3,792	118.1	3,467	297.6	1,002	131.7	268.7	19.8	112.73

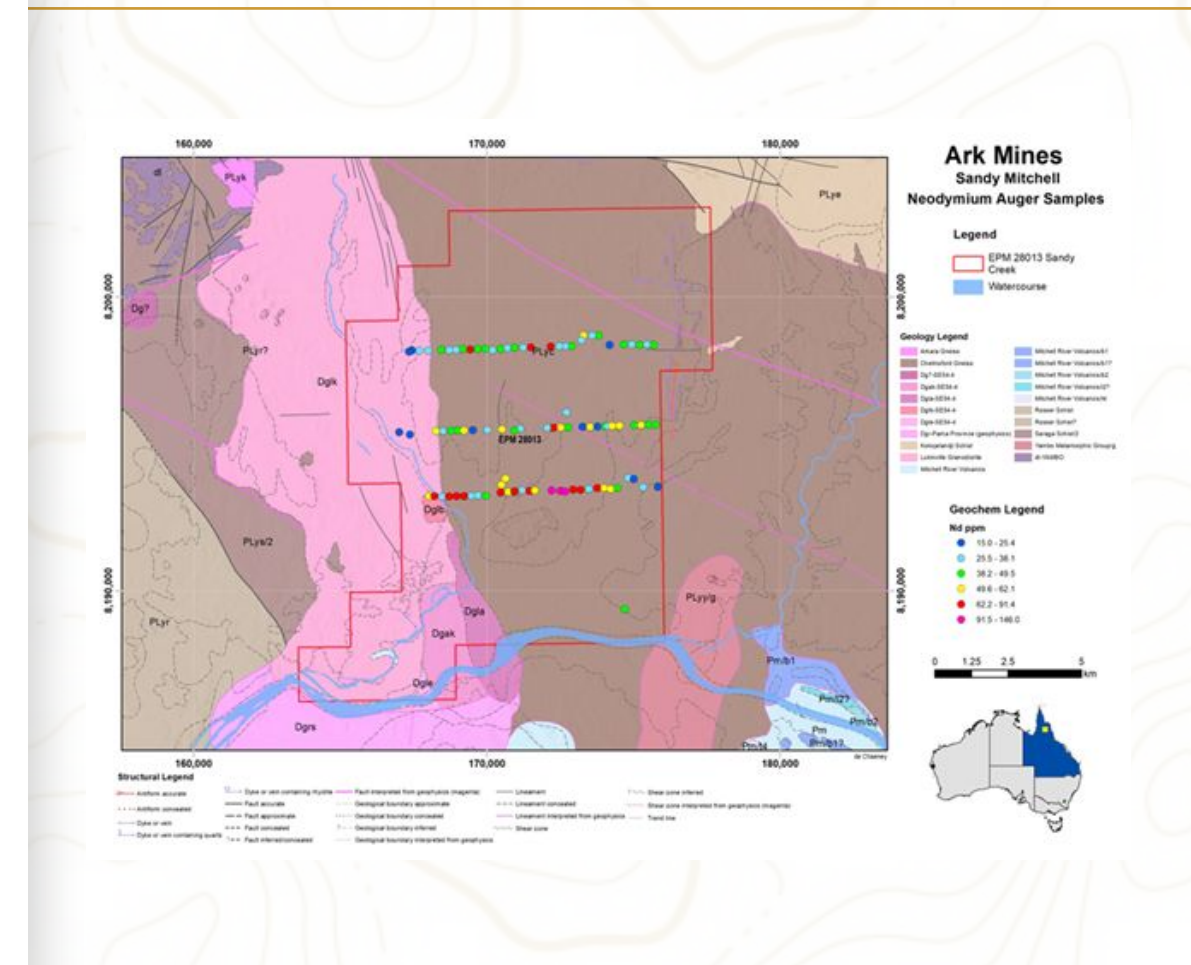
Scale

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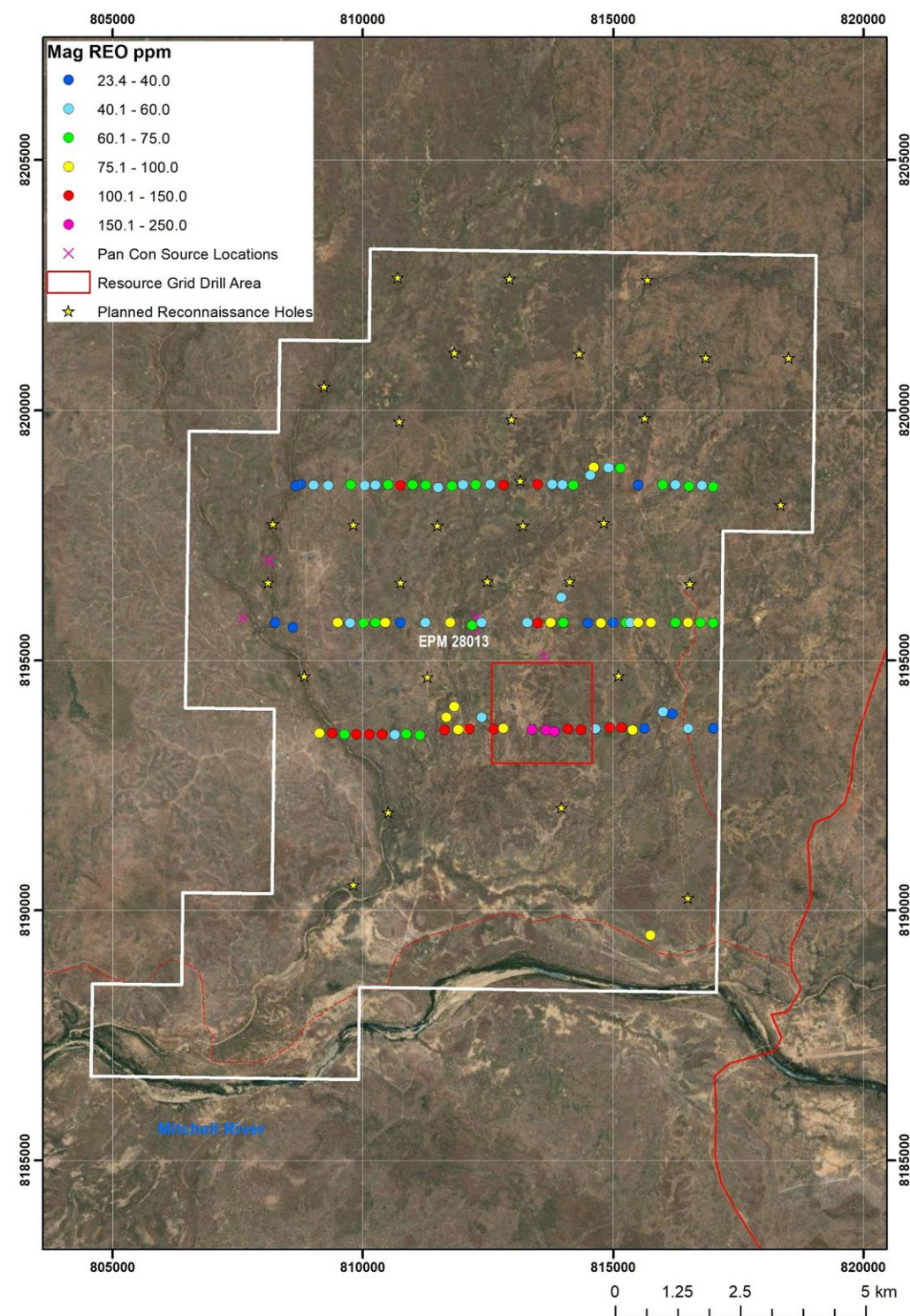


- The size of the thorium anomaly correlating with REE enriched alluvial sands within the Project tenement is 10,067 ha.
- Sands with Heavy Minerals and Rare Earths are eroded from Sandstones to the North. These sandstones were paleo beach settings where the rare earths and Heavys were sorted through wave actions.
- The tenement is 147km² and a further 138 km² has been pegged to the North.
- The anomalous rare earth historical augur drilling shows and anomalous area of 35km². (refer to the figure below)



Drilling is Underway

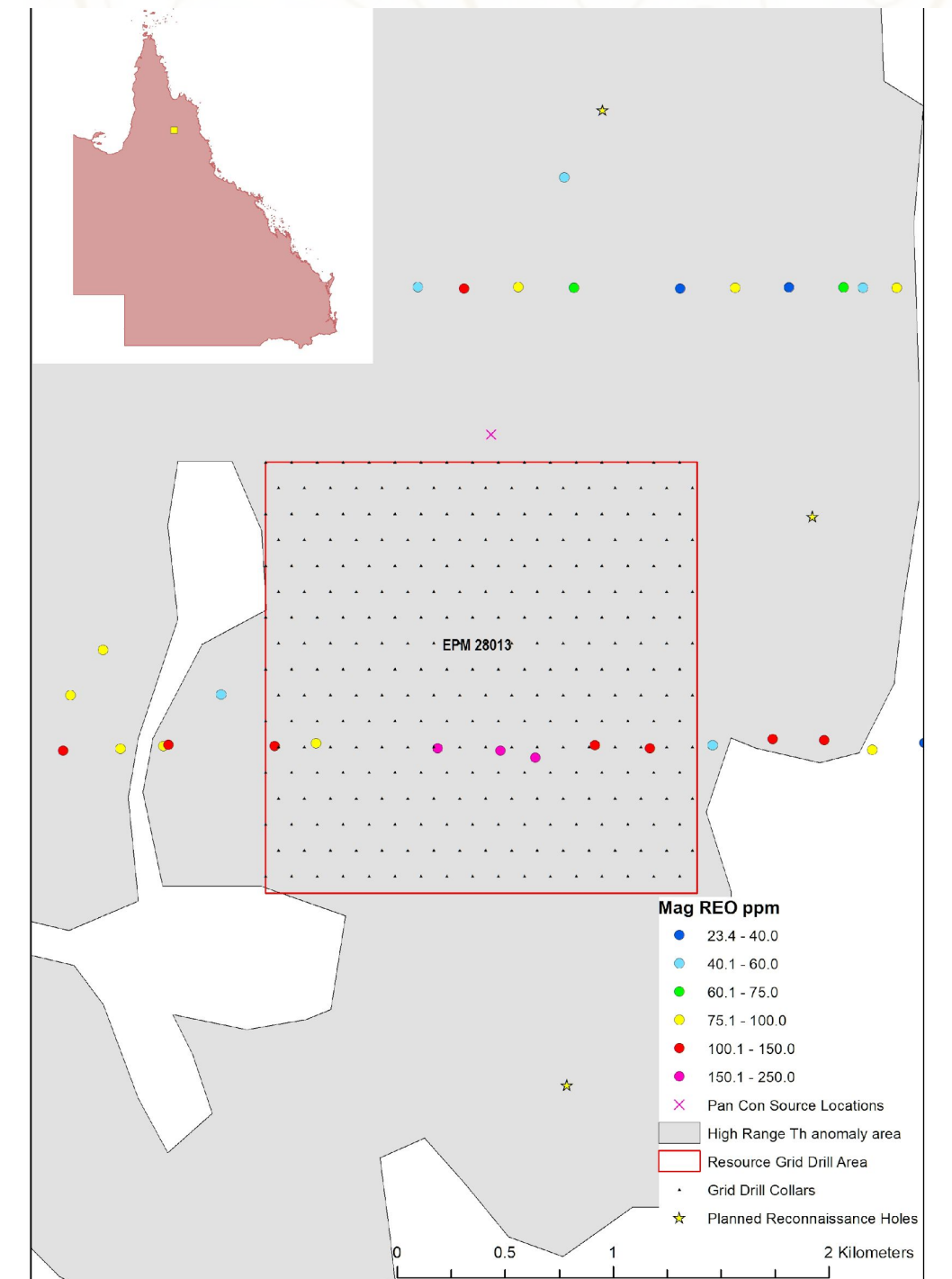
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Air Core drilling has now commenced. Ark aims to infill and expand the Rare Earth historical Auger drilling. Refer to the red box on the figure to the right. Further to this a set of holes across the wider lease will be drilled to determine the scale of the rare Earth anomalism and provide further drilling targets.



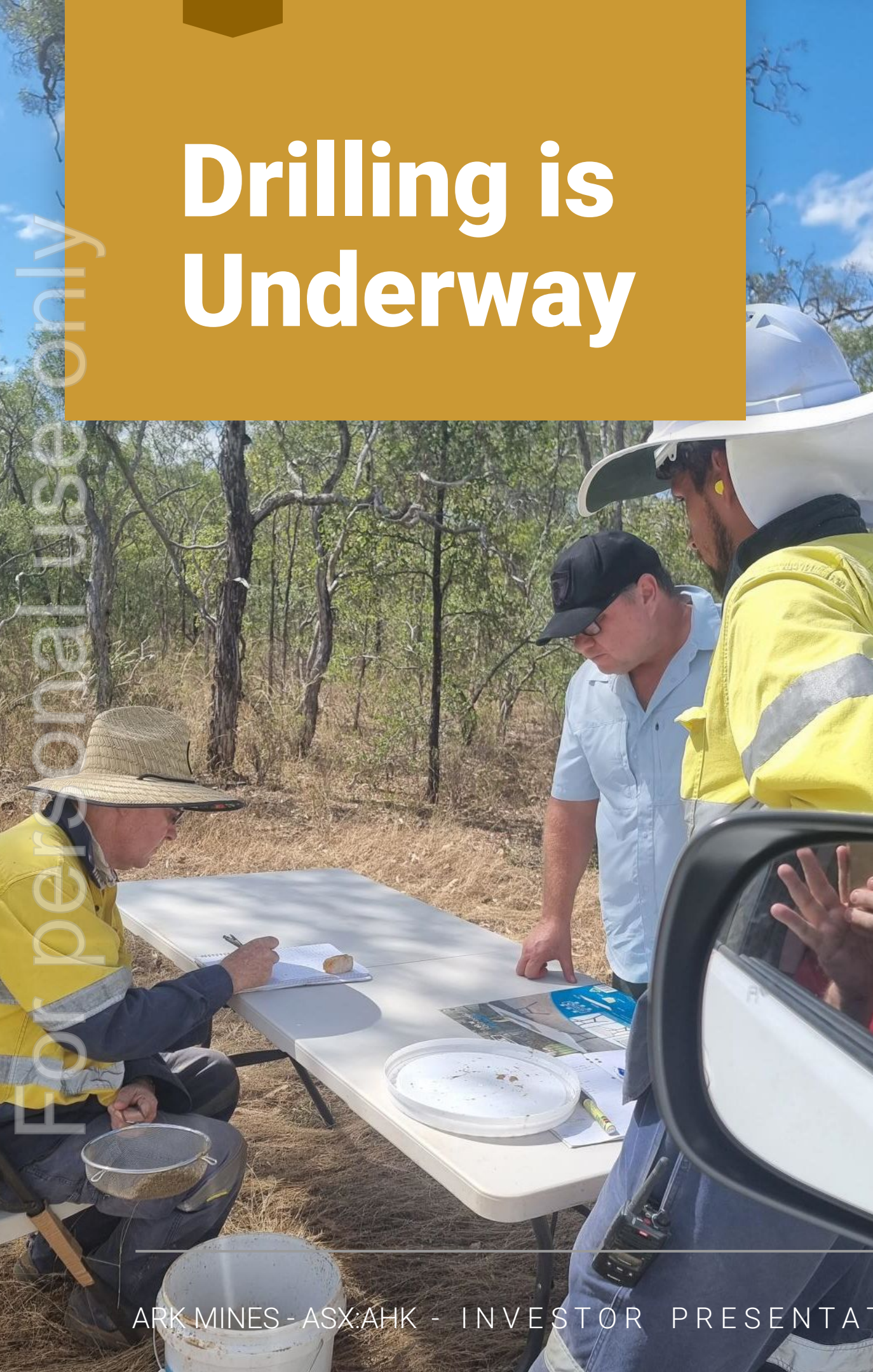
This initial drilling program will be used to provide a JORC-2012 compliant Mineral Resource Estimate. This will then be used to peg the ML at haste.



Proposed Drilling Pattern in Red Box reconnaissance holes yellow stars.

Drilling is Underway

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2023 Work Streams

& VALUE DRIVERS

Action:	Q2 2023			Q3 2023			Q4 2023		
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Ongoing historical data review	→								
Sandy Mitchell maiden 1,000 metre air core drill program		→							
Magnetic separation work				→					
Sandy Mitchell assays				→					
Maiden Mineral Resource Estimate (MRE) for Sandy Mitchell						→			
Reserve Scoping Study							→		
Mining Licence (ML) application					→				
PRODUCING IN 2024									

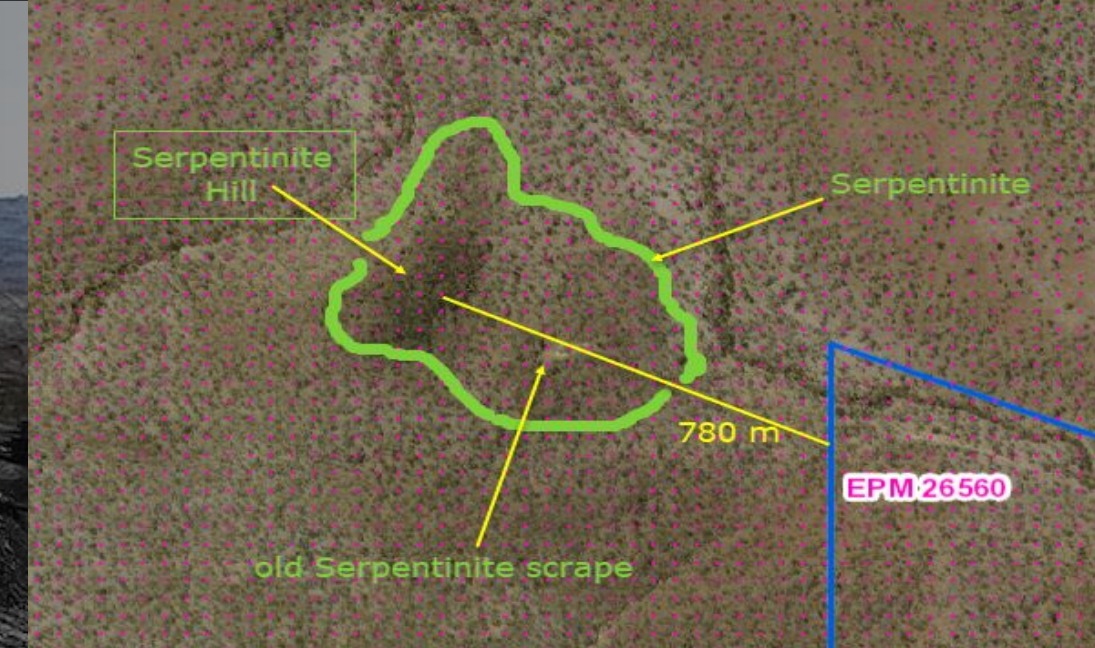
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Gunnawarra

Nickel-Cobalt Project



Gunnawarra:

NICKEL-COBALT PROJECT

SIGNIFICANT DRILLHOLE INTERSECTIONS

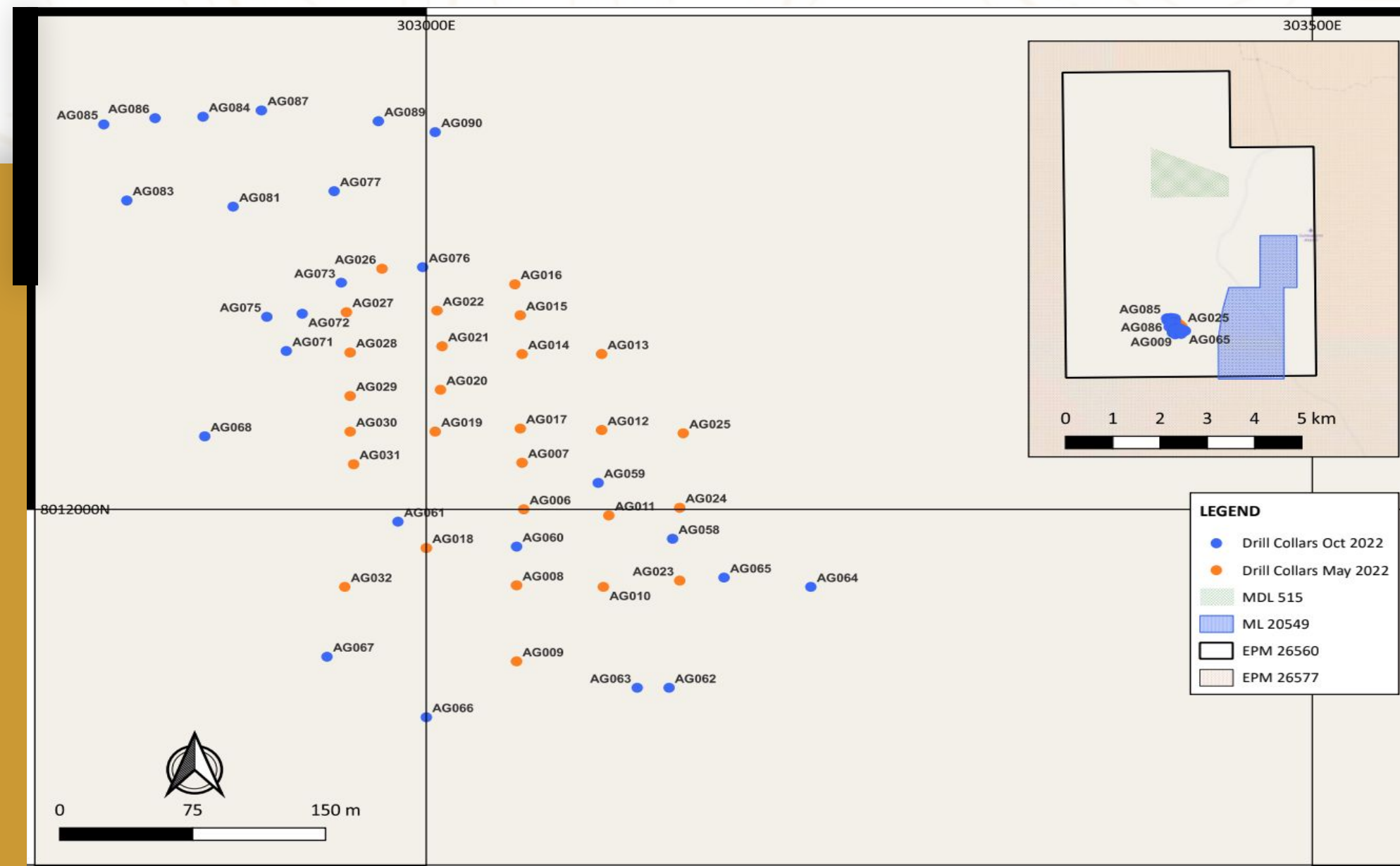
- 3m @ 1.2% NiEq from 6m, plus 3m @ 1.2% NiEq from 6m, plus 1m @ 0.81% NiEq from 17m, plus 1m @ 1.14% NiEq from 32m
- 2m @ 0.96% NiEq from 4m, plus 1m @ 0.73% NiEq from 12m, plus 1m @ 0.90% NiEq from 29m
- 3m @ 0.93% NiEq from 8m, including 1m @ 1.2% NiEq from 8m
- 9m @ 0.79% NiEq from 18m, including 2m @ 1.3% NiEq from 25m

MAIDEN MINERAL RESOURCE ESTIMATE

- Initial 1.341 million tonnes at .53% Ni, 602,000 tonnes Cobalt at .066% and 191,500 tonnes of Copper at .054% at a .4% Ni cut off was completed by Hawker geological consultants.

PROMISING ASSAYS RETURNED

- Assays returned for the Phase 2 drill program comprising 844m of Reverse Circulation (RC) drilling, at Ark's 100% owned Gunnawarra Nickel Cobalt Project in North Queensland
- 28 holes drilled at an average depth of 30 metres with deepest hole drilled to 59 metres



PHASE 1 & 2 DRILL HOLE COLLARS

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Mt. Jesse

Copper Project

Mt. Jesse:

COPPER PROJECT

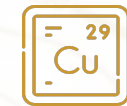


Exposed Iron Hill at Mt Jesse. Bottom: Copper oxide sample from surface



West of Mt Garnet

~25km west of Mt Garnet and ~176km from Cairns



Copper-Rich Magnetite Skarn

Centered on a copper rich magnetite skarn associated with porphyry style mineralization; historical rock chips up to ~21% Cu and drilling up to 2.11% Cu



Historic Iron Formations

Three exposed historic iron formations; massive and homogenous, composed of hematite and magnetite with strong magnetism



DSO Potential

DSO potential; 120km from Mourilyan Harbour (bulk shipping) south of Innisfail



Port Infrastructure Ready

Port infrastructure in place with a purpose-built ship loader conveyor system



Processing Opportunities

Nearby processing opportunities for copper; exploring tolling options in parallel with the exploration/development programs



Surface Mineralisation

Exposed at surface; geophysics strongly coincident with exposed mineralisation

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Investment Highlights

Combined Company

INVESTMENT HIGHLIGHTS



Immediate focus is 1,000m air core drill program at Sandy Mitchell, undertake further metallurgical test work and apply for ML



Advancing processing and off-take discussions – considerable interest in Sandy Mitchell from local processors and customers seeking concentrate



Pursuing near-term development opportunities at Gunnawarra Nickel Project – considerably advanced



Mt Jesse Copper project and Pluton Gold assets add further diversity/ asset hedge and future development potential

Contact Information

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