

# **Kairos Minerals Limited**

# Valuation underpinned by growing 1.1Moz Au resource with future drilling planned on lithium targets in WA's premier lithium address.

Kairos Minerals Limited is the old Mining Projects Group which was established in 1983. In May 2022, the Company underwent its most recent board reshuffle and is now led by Dr Peter Turner. At the same time, Kairos has pivoted towards attempting to unlock the vast potential of its highly prospective Lithium tenements in a Tier 1 mining region. Kairos is fast-tracking its Lithium potential, alongside growing/advancing its Mt. York Gold Project, with an aim of achieving a significantly increased resource from 1.1moz to 1.5moz in the near term.

#### On the brink of a spodumene pegmatite discovery?

Lithium drilling is expected to start in April 2023 at the Black Cat and Crystal Palace targets at the Roe Hills Project (Yilgarn), next door to Global Lithium's (ASX:GL1, market cap A\$344m) Manna Lithium Project (32.7Mt @ 1.0% Li<sub>2</sub>O). At Black Cat, KAI is to drill a 2.7km Lithium soil anomaly & hopes to discover a Manna lookalike.

# Well-named Lucky Sump Prospect lies in a truly 'fertile' zone for lithium

In the Pilbara, Kairos discovered spodumene-bearing pegmatites (up to 1.9% Li<sub>2</sub>O) just 3km from Pilbara Minerals' (ASX:PLS, market cap A\$12.5bn) world-class Pilgangoora Lithium-Tantalum Mine and near Mineral Resources' (ASX:MIN) large Wodgina Lithium-Tantalum Mine. Lucky Sump lies within a 'fertile zone' where late-stage pegmatite intrusions contain lithium (and tantalum) in the form of spodumene – the holy grail.

# The Mt York Gold Project that could become a super pit

Out of the 1.1Moz Mineral Resource Estimate (MRE), 900koz comes from the 3km long single continuous deposit called the Main Trend. Lack of quality core has meant no structural targeting to drive drilling. Plus, there has been a lack of drilling at depth. All this is being resolved by testing the potential with a +20,000m RC-DDH drilling programme which is now 50% complete and could push the MRE closer to Kairos' 1.5Moz - such a move would dramatically improve our valuation.

#### • Over 150% upside on gold alone, but lithium success could see 340%

Peer group analysis shows that the gold interests could attract a valuation of A\$95m on their own. Establishing a 10Mt @ 1%  $Li_2O$  resource could conservatively add A\$84m, suggesting A\$0.080 per share. That is for the future. For now, we initiate coverage of Kairos with a target price of **A\$0.046** and a **Strong Buy** stance.

| Table: Financial overview. Source: Company accounts & Resolve Research |         |         |         |         |  |  |  |  |
|------------------------------------------------------------------------|---------|---------|---------|---------|--|--|--|--|
| Year to end June                                                       | 2021A   | 2022A   | 2023E   | 2024E   |  |  |  |  |
| Revenue (A\$'000)                                                      | 359     | 408     | 500     | 500     |  |  |  |  |
| PTP (A\$'000)                                                          | (3,940) | (4,147) | (3,666) | (4,326) |  |  |  |  |
| EPS (A\$ cents)                                                        | (0.24)  | (0.23)  | (0.18)  | (0.19)  |  |  |  |  |

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# **STRONG BUY**

# Target price A\$0.046

| Key Data         |                 |
|------------------|-----------------|
| EPIC             | KAI             |
| Share price      | A\$0.016        |
| 52 week high/low | A\$0.05/A\$0.02 |
| Listing          | ASX             |
| Shares in issue  | 1,962m          |
| Market Cap       | A\$31.4m        |
| Sector           | Mining          |

12 month share price chart



#### Analyst Details

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# **Business Overview**

# **Kairos Operations**

Kairos Minerals is an Australian exploration company targeting large-scale lithium and gold discoveries in Western Australia's premier mining districts. The company's core focus is on the 100%-owned Pilbara gold Project, which includes the Mt York deposit, where Kairos holds a prominent and highly prospective land position at the centre of the rapidly emerging Pilbara gold district.

• Mt York Gold Project - The Mineral Resource Estimate (MRE) increased to 28.01Mt @ 1.23g/t gold for 1,104,000oz ounces in August 2022. A technical review has demonstrated that the resource is under-drilled, and a +20,000m extensional drilling programme has begun. The next gold exploration milestones will naturally be 1.5Moz and ultimately 2Moz. The company has plans underway to advance the project through feasibility with a vision to take the project through to mining. The company has recently submitted two Mining Lease Applications (MLAs) as a start to this process.

• Mt York Spodumene (Lithium) Exploration – Lies adjacent to the Mt York Gold Project and about 3km from Pilbara Minerals' world-class Pilgangoora Lithium-Tantalum Mine and 30km ENE of Mineral Resources' large Wodgina Lithium-Tantalum Mine. Spodumene-bearing pegmatites have been discovered grading up to 1.91% Li<sub>2</sub>O. Phase 1 Reverse Circulation (RC) drilling has been completed with Lithium-Caesium-Tantalum (LCT) pegmatites, with up to 2,143ppm tantalum confirmed. The company believes the spodumene occurrences at surface at Lucky Sump and the high-Ta values in recent drilling underneath Lucky Sump point to a highly fractionated suite of pegmatites in fertile hunting territory to discover further spodumene-bearing pegmatites within the Mt York tenements.

• Roe Hills Spodumene (Lithium) Exploration - Located in the Eastern Goldfields region, 120km east of Kalgoorlie. Kairos has 291.6km<sup>2</sup> of contiguous exploration licences adjacent to those held by Alchemy Resources (ASX:ALY) and Breaker Resources (ASX:BRB). Roe Hills lies close to Global Lithium's Mana Lithium Project (32.7Mt @ 1.0% Li<sub>2</sub>O), and the area represents an exciting new and growing lithium province. Kairos has discovered multiple lithium-cesium-berylium-rubidium-tin soil anomalies that it hopes covers buried lithium-pegmatites, and Phase 1 RC drilling is planned to begin in April 2023 of the 2.7km and 500m long anomalies at the Black Cat and Crystal Palace targets respectively.

• Regional Exploration – Ongoing lithium exploration across the company's 2,090km<sup>2</sup> of strategic projects (granted licences and applications) in the Pilbara, where there is now a pipeline of quality lithium targets. The top priorities are seen to be the Wodgina Project next door to the famous Wodgina Li-Ta Mine of Mineral Resources (ASX:MRL) and the 'Tierra' lithium anomaly at the Croydon Project.



Rock sample of spodumene-bearing pegmatite from Lucky Sump. Source: Company

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# Leading battery metal

Lithium is a soft silvery-white alkali metal with the atomic number 3 and is the least dense metal and element. As with all alkali metals, lithium is highly reactive and burns easily, so it must be stored in a vacuum or in an inert liquid like mineral oil. When cut, the metal shows a metallic lustre but quickly becomes tarnished. Lithium only occurs naturally, typically in ionic compounds such as pegmatite minerals which were once the primary source of lithium. The metal is present in the sea due to its solubility as an ion and is now commonly obtained from brines. Lithium and its compounds have several industrial applications, including heat-resistant glass, ceramics, lithium grease lubricants, and flux additives for steel and aluminium production. However, lithium's primary use is in lithium metal and lithium-ion batteries, accounting for 80% of global consumption. Alongside nickel and cobalt, lithium is one of the critical components in Electric Vehicle (EV) batteries.

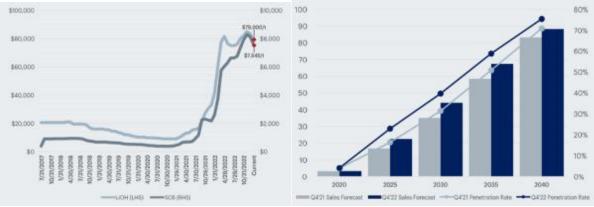
# Supply and demand

The US Geological Survey (USGS), in its latest Mineral Commodity Summary, believes that most of the world's lithium production came from less than twenty lithium projects dotted around the globe. These were six mining operations in Australia, one tailings project in Brazil, two brine operations in both Argentina and Chile and three mining and two brine projects in China. Plus, there are smaller-scale projects in Brazil, Canada, China, the US and Portugal. US data is kept secret by the USGS, but in 2020 the country was thought to have produced around 900t. World reserves have been put at 26 million tons, but due to continuing exploration, identified lithium resources have increased substantially and now total about 98 million tons, led by Bolivia and Argentina with 21 and 20 million tons of lithium resources, respectively.

| Lithium – world mine production and reserves. Source: USGS Mineral Commodity Summary January 2023 |             |             |            |  |  |  |  |
|---------------------------------------------------------------------------------------------------|-------------|-------------|------------|--|--|--|--|
| Country                                                                                           | Mine produc | tion (tons) | Reserves   |  |  |  |  |
|                                                                                                   | 2021        | 2022e       | (tons)     |  |  |  |  |
| Australia                                                                                         | 55,300      | 61,000      | 6,200,000  |  |  |  |  |
| Chile                                                                                             | 28,300      | 39,000      | 9,300,000  |  |  |  |  |
| China                                                                                             | 14,000e     | 19,000      | 2,000,000  |  |  |  |  |
| Argentina                                                                                         | 5,970       | 6,200       | 2,700,000  |  |  |  |  |
| Brazil                                                                                            | 1,700e      | 2,200       | 250,000    |  |  |  |  |
| United States                                                                                     | Withheld    | Withheld    | 1,000,000  |  |  |  |  |
| Zimbabwe                                                                                          | 710e        | 800         | 310,000    |  |  |  |  |
| Portugal                                                                                          | 900e        | 600         | 60,000     |  |  |  |  |
| Canada                                                                                            | -           | 500         | 930,000    |  |  |  |  |
| Other countries                                                                                   | -           | -           | 3,300,000  |  |  |  |  |
| World total                                                                                       | 107,000     | 130,000     | 26,000,000 |  |  |  |  |

The US is estimated to have 12 million tons of resources from various sources, such as continental brines, claystone, geothermal brines, hectorite, oilfield brines and pegmatites. There are two primary sources of commercial lithium: spodumene and salar brine water. Hard rock and clusters of crystals which contain lithium called spodumene are mined traditionally. Such deposits are found worldwide, with Australia home to the world's largest spodumene mine. The other primary source is the accumulations of saline groundwater enriched in dissolved lithium and found across South America in countries like Argentina, Bolivia and Chile. Hard rock miners had the advantage in the past, but now lithium is produced from evaporating salar brines which makes up at least 50% of world production.

The rapid increase in demand and rising lithium price has meant that more players are attempting to get into production whilst established operations are seeking to increase their production capacity. Lithium is one of the critical components in EV batteries, but global supplies are under pressure due to the rising EV demand. The International Energy Agency (IEA) believes the world will face lithium shortages as early as 2025. Credit Suisse has forecasted that lithium demand could treble over the 2020-25 period, which would see supply stretched. There are several real lithium supply challenges, not just from surging demand but also because the resources are concentrated in just a few places.



Lithium spot prices Source: Fast Markets/Piedmont Lithium

Rising forecasts - EVs and penetration rates Source: Benchmark Minerals Intelligence via Piedmont Lithium

# Spodumene pegmatite

Spodumene is a pyroxene mineral that is typically found in lithium-rich granite pegmatites. It is usually associated with other lithium minerals such as lepidolite, eucryptite, and petalite. Spodumene has a chemical composition of LiAlSi<sub>2</sub>O<sub>6</sub>, but small amounts of sodium can sometimes be a substitute for lithium. As a result, spodumene has proven to be the preferred raw material for lithium chemical production.

The discovery and development of world-class LCT spodumene-bearing pegmatites in WA have giving rise to a whole new dynamic subsector of the mining industry. Recent years have seen several new spodumene pegmatite discoveries in both the Yilgarn and Pilbara Cratons, and these have been found relatively close to the surface. This is a bit of a surprise, given that these are reasonably well-explored areas. Spodumene is a naturally occurring compound source of lithium.

By and large, LCT pegmatites are later-stage intrusions resulting from tectonic activity, which concern the convergence of the plates that make up the earth's crust. In WA, LCT pegmatite deposits are mainly hosted within Archaean greenstone belts as dykes and sills, which are described as being 'en echelon', which means that they run in parallel or subparallel, closely spaced, overlapping minor structural features such as faults and tension cracks.

# It matters where lithium comes from

Battery technology is seen to be the primary driver of future lithium demand due to the forecasted rising growth in EVs. The industry seems to be moving towards cathodes with higher nickel content, like the NCM 811 cathodes, which have a higher energy density, giving EVs a longer life and greater driving distance. Lithium hydroxide is better suited to producing batteries with NCM 811 cathodes than lithium carbonate. Lithium from spodumene can be processed into both lithium hydroxide and lithium carbonate. However, lithium from brines can only be initially processed into lithium carbonate and then would need to be further processed into lithium hydroxide, which involves additional costs. So, lithium from hard rock (spodumene-pegmatites) is more flexible and of higher quality and grade than that found in salar brines.

#### Battery-grade lithium on the critical list

Undoubtedly, battery-grade lithium products will remain critical to the planet's renewable energy future as countries worldwide focus on decarbonising and achieving net zero carbon emissions. Today many governments worldwide are implementing emissions targets and stricter environmental regulations which incentivise consumers to move to EVs. As EV sales keep climbing, battery manufacturers are racing to secure their supply chains as the global demand for lithium takes off. In fact, several EV car manufacturers have recently invested in lithium concentrate at the mine-gate, a trend that we may see more and more of into the future as the car manufacturers try to control the price of EV batteries in their cars. Notably, Ford and Tesla have signed binding offtake agreements with Liontown Resources (ASX:LTR) for supply of lithium from their Kathleen Valley Lithium Project.

At the COP26 climate talks, thirty governments agreed to stop the sales of new petrol and diesel models by 2040. With these developments, it is no surprise that lithium prices have reached an all-time high. It looks pretty certain that lithium's long-term path has been set and infrastructure in place, whilst the supply chain scaling has only just begun. There seems to be no stopping EV demand which is projected to grow dramatically. However, lithium shortfalls are anticipated as the characteristic long development timescales of mining projects and regulatory hurdles to get any new mine into production will compound supply deficits.

# Background

# Lithium-gold project in the Pilbara

The company was incorporated in 1983 under Mining Projects Group Limited, a mineral exploration company involved in exploration for nickel, copper and gold mineralisation in the Kambalda and Fraser regions of Western Australia. Under this name, the company was involved in the then highly lucrative Queensland coal sector and set about developing a coal tenement portfolio targeting the Esk Basin in Queensland. Mining Projects Group executed a joint venture agreement with Epi Energy Pty Ltd in 2013 to gain a 70% interest in three granted exploration leases covering 566km<sup>2</sup> in the highly prospective nickel-copper and gold province in the Fraser Range, WA. In 2015, Mining Projects Group was drilling at Roe Hills, where they successfully identified a thick, rich nickel sulphide channel. 2016 saw the company acquire the Wodgina East Lithium-Tantalum Project for A\$0.36 million in stock.

The company's name was changed to Kairos Minerals Limited in May 2016. During that year, the company continued to expand its footprint in the Eastern Goldfields and the Pilbara and most of Kairos' exploration expenditure for those 12 months was directed towards the newly acquired Mt York Lithium-Gold Project in the Pilbara, along with refocusing on the significant gold potential of the highly prospective Roe Hills Project.

By 2018 the company was beginning to look a lot more like the business we see today as in place was a 100% interest in the Pilbara Gold Project and the Croydon Project, both in the Pilbara and also a 100% interest in the Roe Hills Project in Eastern Goldfields, WA. At this time, the Pilbara Gold Project had an Indicated and Inferred Resource of 14.1Mt @ 1.39g/t gold for 643,000 ounces, with the company being able to announce a 290% increase in the JORC Mineral Resource Estimate (MRE) for the Mt York gold deposit to Indicated and Inferred Resource of 11.3Mt @ 1.34g/t gold for 486,000 ounces. At the Croydon Project, detailed mapping and exploration work had resulted in the discovery of visible gold along a previously identified strike length of 22km of prospective contact between the basal Mt Roe Basalt and the Archaean basement. Early 2018 saw the completion of a 5,155m RC drilling programme which had successfully intersected gold mineralisation over significant widths and grades.

#### Increasing gold resources

Gold hit an all-time high of A\$2,280 an ounce in 2019 as the world battled growing geopolitical uncertainties and concerns over slowing global growth. The company's strategic focus remained on the Pilbara Project. Regional stream sediment sampling conducted at the Croydon Project confirmed the widespread distribution of gold across the tenement area, followed by the discovery of 256 gold nuggets adjacent to an unconformity between the Mt Roe Basalt/Conglomerate and the Archaean Basement. The discovery of the massive Hemi Gold Deposit by the company's neighbour De Grey Mining (ASX:DEG) in 2020 saw the Pilbara as a Tier 1 destination for gold companies that were otherwise exploring other parts of Western Australia, particularly the Eastern Goldfields (Yilgarn Craton). This exceptional discovery lay under 30m of transported sediments and showed the enormous prospectivity of the Pilbara for a new style of mineralisation. This sparked significant interest in gold juniors and explorers in the Pilbara and allowed the company to raise A\$9 million in a placing in September 2020.

The company went into 2021 pursuing its twin-track approach in the Pilbara of expanding its then 873,500oz gold MRE at Mt York while pursuing greenfield exploration to discover new intrusion-hosted gold in the company's large tenement area. At Mt York, Kairos commenced a major +20,000m RC programme where one of the standout intercepts was 32m at 3.79g/t, including 16m at 6.65g/t including 4m at 15.7g/t in a new area known as The Gap. Plus, there was 5,585m of RC drilling at the Fuego and Tierra prospects at the Croydon Project and an extensive 133-hole air-core drilling programme for 5,454m at the Kangan Project to test a sizeable gold anomaly 20km south of Hemi.

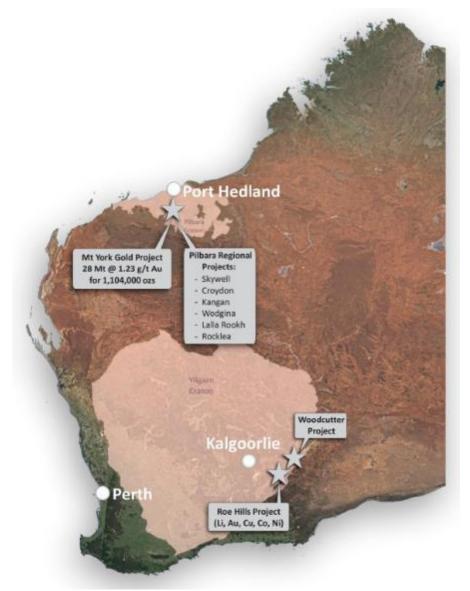
Over the past year, the company's focus has been broadened, with more attention being paid to the lithium potential of Kairos' extensive acreage. Indeed, highly prospective anomalies have been discovered at Roe Hills in WA's Eastern Goldfields. Roe Hills clearly shows immense potential for lithium, and it has become the key focus. At the same time, the company is seeking to make progress at its 1.1Moz Au resource (the upgrade was announced in August 2022) at the Mt York Project, where the company has just lodged two Mining Lease Applications which cover the whole area of the exploration licences.

# **Operations**

# Growing a leading resource

# Introduction

Kairos is targeting large scale lithium and gold discoveries in WA's premier mining districts. The company has a 100% interest in a substantial licence acreage in the Pilbara and Yilgarn Cratons in Western Australia. These have a legendary reputation for hosting world-class gold deposits that have been discovered over the years.



Location of Kairos Projects in the Yilgarn and Pilbara Cratons. Source Company

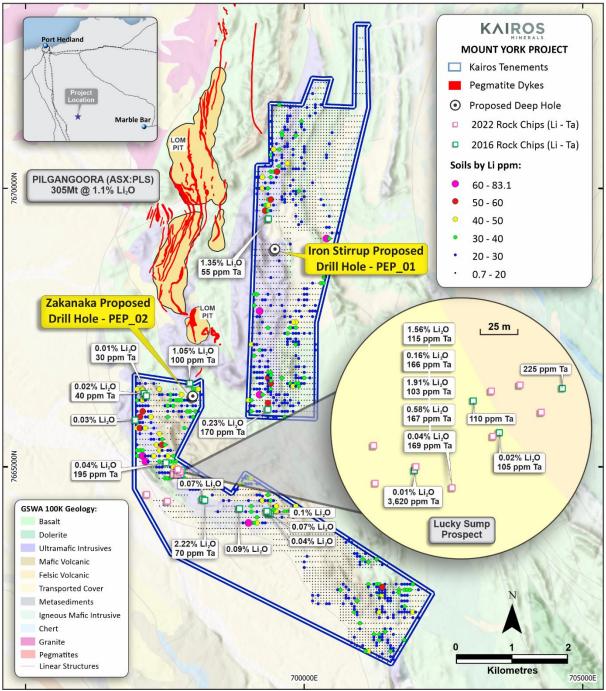
Lithium mineralisation hosted by spodumene-bearing pegmatites has been known for a long time in WA, as Australia's largest lithium mine, Greenbushes (250km south of Perth), began production back in 1888. However, the recent performance of the lithium price coupled with the prospective geology, has seen more attention paid to exploration for this metal in WA. This is apparent when considering the resources growth in the State. Fourteen JORC-compliant lithium resources at different projects now exist. Kairos has already helped to discover a new and growing lithium province at Roe Hills in the Yilgarn and identified spodumene-pegmatites in the Pilbara. Regional exploration in the Pilbara has also resulted in the discovery of highly prospective lithium tantalum prospects at Wodgina, Kangan, Lalla Rookh and Rocklea.

# **Lithium Projects**

# Mt York Spodumene (Lithium) Exploration

# Lucky Sump discovery

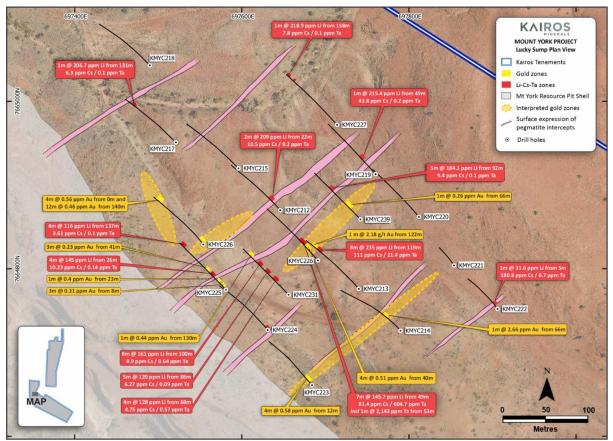
Kairos discovered spodumene-bearing pegmatites during normal earth-moving work at the Lucky Sump Prospect, adjacent to the Mt York Gold Project and about 3km from Pilbara Minerals' world-class Pilgangoora Lithium-Tantalum Mine and 30km ENE of Mineral Resources' large Wodgina Lithium-Tantalum Mine.



Mount York Lithium soils and rock chip sampling and the location of the Lucky Sump Prospect in relation to Pilbara Mineral's Pilgangoora Lithium-Tantalum Mine and Mineral Resources' Wodgina Mine. Source: Company

Samples collected from the surface at Lucky Sump ran as high as 1.91% Li<sub>2</sub>O and were confirmed to contain spodumene-bearing pegmatites. These results have shown that geologically speaking, Lucky Sump lies within what has been termed a 'fertile zone' where late-stage pegmatite intrusions contain lithium in the form of spodumene. In September 2022, 18 RC holes were drilled for 2,613m at Lucky Sump, which discovered LCT pegmatites with up to 2,143 ppm Ta confirmed in drilling. Average tantalum values of 607 ppm Ta were found over 7m in drill hole KMYC216 that targeted surface spodumene (lithium) pegmatites grading up to 1.9% Li<sub>2</sub>O. The internal zoning may explain the relative low lithium value of 146ppm (0.03% Li<sub>2</sub>O) within the LCT pegmatite(s) that were intersected at depth.

The Lucky Sump Prospect is interpreted to contain a swarm of northeast-striking pegmatites inferred from highresolution processed aerial images. Moving ahead, Kairos intends to drill test the dyke swarm to assess the lithium and tantalum potential. In addition, several other prospects, including Zakanaka, seem to have a high potential for lithium pegmatites that will be tested in H1, 2023.

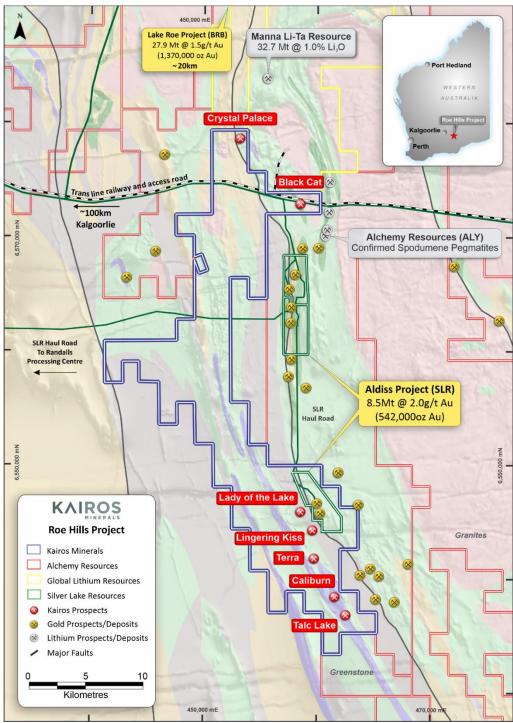


Lucky Sump Prospect is interpreted to contain a swarm of NE-striking pegmatites. Source: Company

# **Roe Hills Spodumene (Lithium) Exploration**

# Growing lithium province

In the Eastern Goldfields region, Kairos is exploring the Roe Hills Project, which lies 120km east of Kalgoorlie. The company has an impressive portfolio of licence areas which are highly prospective for gold, nickel and cobalt discoveries. However, it is the lithium potential that is getting people talking. In all, Kairos has 291.6km<sup>2</sup> of contiguous exploration licences adjacent to those held by Alchemy Resources and Breaker Resources (ASX:BRB). Roe Hills lies close to Global Lithium's Manna Lithium Project (32.7Mt @ 1.0% Li<sub>2</sub>O), and the area shows all the signs of being an exciting new and rapidly growing lithium province.



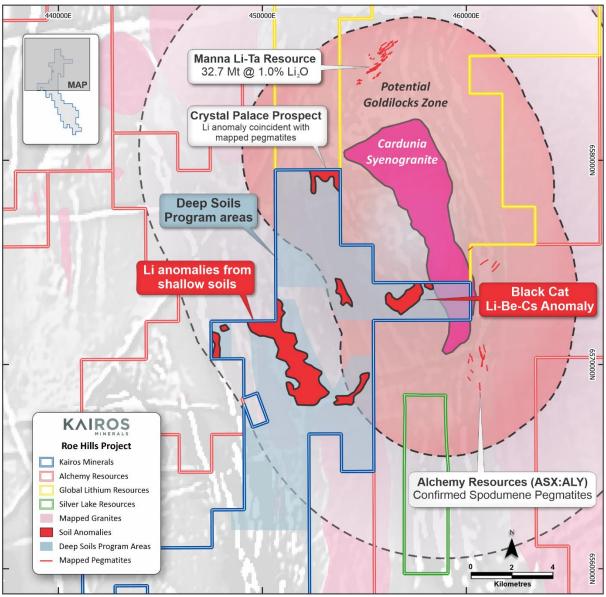
Geology and mineral occurrences of the Roe Hills area. Source: Company

The team believe that Kairos' 2.6km-long Black Cat LCT soil anomaly, which is made up of coincident lithium, caesium, beryllium and tin, has the potential of being a Manna lookalike. This anomaly was drill-ready even before 3,000 new sample results covering Roe Hill North arrived in October 2022.

Roe Hills is an exciting large project for Kairos that offers a potential value-add for the company with low-cost exploration. Global Lithium acquired the Mana Li-Ta Project from Breaker Resources. It recently paid A\$60 million for the remaining 20% interest, placing a valuation of A\$300 million on the whole project. The area is fast becoming a new spodumene pegmatite (lithium) province and hunting ground with the Manna Li-Ta deposit just 10km north of Kairos's lookalike Black Cat Prospect. Kairos is preparing to drill this along with the 500m long Li-in-soils anomaly at the Crystal Palace target some 6km to the northwest. It must be said that the soil geochemistry of these two targets does look identical to Manna's early soil geochemistry.

# Fertile fluid to create world class deposits

A lot can be learnt from the neighbouring Manna Lithium resource. Global Lithium acquired Manna from Breaker Resources for A\$300 million in 2022, a time when the resource stood at 9.9 Mt @ 1.0% Li<sub>2</sub>O. Since then, Global has upgraded the resource to 32.7 Mt at the same grade and completed a Scoping Study.



Roe Hills licence area and the neighbouring lithium projects. Source: Company

Breaker Resources, the explorers who discovered Manna, suggested in their ASX press announcement dated 26<sup>th</sup> November 2021, that the enriched fluid responsible for the Manna lithium deposit itself was derived from the southwest of the deposit and fractionated towards the northeast. Breaker further suggested that the Cardunia Syenogranite could be a possible source of heated, enriched fluids which, if correct, would have major implications for Kairos. Breaker also announced the composition of the auger anomaly in terms of coincident Li-Rb-Sn-Be. This is the same geochemistry that Kairos has announced at Black Cat (2,700m long coincident Li and pathfinder element anomaly) and Crystal Palace.

Breaker did point out that "...unsurprisingly, not all of the lithium mineralisation occurs in areas of outcrop..." meaning that there is often no surface outcrop where spodumene pegmatites are found, which has been Dr Peter Turner's experience at many projects. A good example is the Goulamina Lithium Project (108Mt @ 1.45% Li<sub>2</sub>O) in Mali, where less than 5% of the orebody was found to be outcropping. All of this leads the Kairos team to think there could be a fertile spodumene pegmatite system under Black Cat and Crystal Palace.

Later in this report, there is a discussion around the fractionation trend and the suggestion of an increasing fraction towards the northeast. Looking at the map below, this would either be the Cardunia Syenogranite or the Woodline Granite, as it is believed at the time that Breaker ruled out the Erayinia Syeno-granite. So that leaves the potential sources to be either Cardunia Syenogranite or the Woodline Granite. Alternatively, it could also be from the Blue Granite, which Kairos is interested in.

Alchemy Resources, an active junior exploration company in the area, recently reported low-grade lithium assay results in their pegmatites that they drilled at their Hickory-Cherry area. Importantly, Alchemy confirmed the presence of fine spodumene in their pegmatites. Together with other snippets of information, it would seem that the Cardunia Syenogranite is the most likely source of the fertile fluid that is responsible for Manna and the spodumene occurrences at Cherry-Hickory. Given the background information, Kairos appears quite right in promoting its Black Cat Li-Rb-Cs-Sn-Be anomaly to be a Manna look-alike. The company's team seem pretty sure that it is a pegmatite system and having reviewed the available public data on Manna are increasingly confident that there is a good chance that Black Cat and Crystal Palace hold spodumene pegmatite rocks beneath the shallow cover.

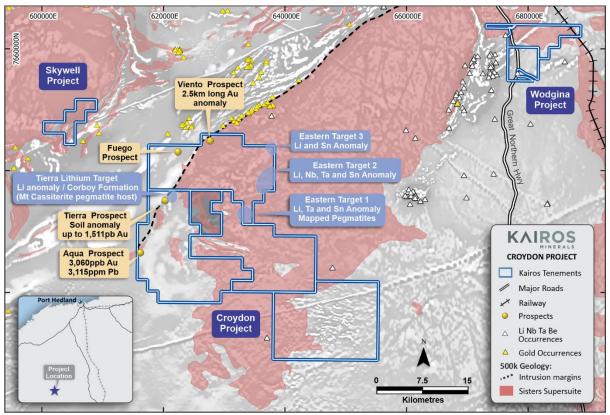
Kairos intends to drill an initial 2,500m at Black Cat in April 2023. Ahead of the initial drilling at Black Cat and Crystal Palace, the company does need to negotiate a heritage protection agreement with the local Aboriginal claimant groups ahead of drilling, something that the company is well advanced with.

# **Regional Exploration**

Exploration continues across Kairos' significant land position in the Pilbara and Eastern Goldfields.

# 10km long anomalies at the Eastern Targets

The Croydon Project covers the southwestern end of a large Sisters Supersuite Granite and has a string of largescale gold and lithium soil anomalies over exciting structural features. Here, the team is looking for intrusionrelated gold deposits similar to the Hemi deposit, and new spodumene-pegmatites that show up as Li soil anomalies in their soil geochemical database.

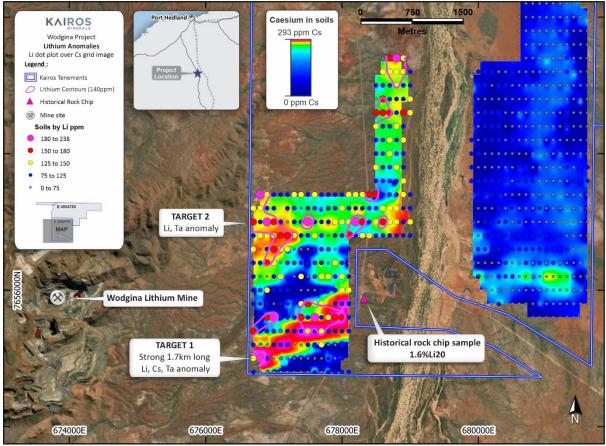


Croydon geophysical-geology map showing gold & lithium. Source: Company

Significant discoveries can be made by drilling gold targets highlighted by soil sampling. The new gold targets are Fuego (Fire), Tierra (Earth), Aqua (Water) and Viento (Wind). Plus, four new lithium targets – a coherent Priority 1 Lithium soil anomaly at Tierra Prospect and the others collectively called the Eastern Targets. Tierra and Eastern 1 lithium targets show geological settings like the Mt Cassiterite pegmatite suite, which forms part of the 259Mt @ 1.17% Li2O deposit owned by Mineral Resources and Albemarle Corporation (NYSE: ALB).

# 1.7km lithium anomaly

The Wodgina Project spans an area of 68 km<sup>2</sup> next door to Mineral Resources' Wodgina Lithium-Tantalum Mine and roughly 15km from Pilbara Minerals' Pilgangoora Lithium-Tantalum Mine. A 1.7km long LCT anomaly has been delineated following a soil sampling programme that tested areas prospective for Li-enriched pegmatites and gold at the margins of the Sisters Supersuite intrusion. This was assisted by an airborne magnetic and radiometric survey of 435 lines for 2,387km over the project area.

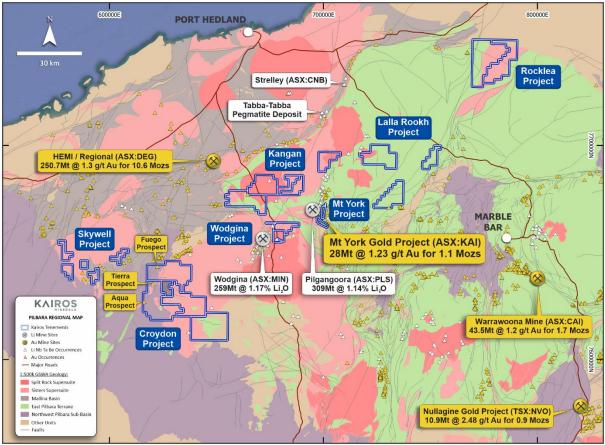


Soil sampling results at Wodgina. Source: Company

# **Gold Projects**

# Rapidly emerging gold district in the Pilbara

Kairos is focused on its 100%-owned Pilbara Gold Project and its 2,090 km<sup>2</sup> tenement package across the rapidly emerging Pilbara gold district. The Mt York Gold Project boasts a JORC-compliant resource of 28.01Mt @ 1.23g/t gold for 1,104,000oz and has targeted further to increase the resources further in 2023.



Pilbara Gold Project. Source: Company

# Hemi increases the potential

In the Pilbara, the company is exploring for intrusive-hosted gold deposits, similar to the nearby Hemi discovery (2019) owned by De Grey Mining. Hemi is a large-scale, high-value, near-surface gold discovery which has been heralded as being a once in a generation discovery. Hemi (including the Mallina resource) has current resources of 250.7 Mt @ 1.3 g/t Au for 10.6 moz and ore reserves of 103.4 Mt @ 1.5 g/t Au for 5.1 Moz and is 50km northwest of the Mt York Gold Project. It also demonstrated a scale of mineralisation that had not been encountered before in the Mallina Basin and a brand-new intrusion-hosted style of gold mineralisation for the Pilbara region. At Hemi, the gold mineralisation is hosted in a series of intrusions associated with stringer and disseminated sulphide rich zones, which has opened a new playbook for the region. This monumental discovery encouraged Kairos to thoroughly review its licence areas, which has paid dividends in successfully finding numerous high-quality targets for intrusive-hosted gold, including the Fuego, Tierra, Kangan and Skywell Projects.

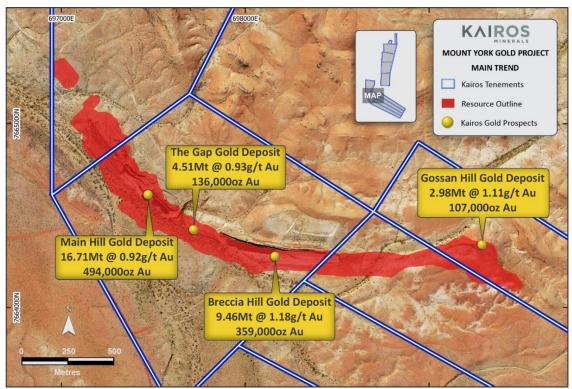
# **Mt York Gold Project**

# Tier 1 gold country

The flagship Mt York Gold Project lies 100km south of Port Hedland in an area that undoubtedly represents Tier 1 gold country, it being the home to many large gold deposits. In 1994-98, Lynas Gold mined 125,493 ounces of gold here. The project lies in a well mineralised district for gold and lithium, which forms part of the Pilgangoora Syncline, found in the western part of the Pilbara. That structure is known to contain greenstones of various origins. Principally, the Pilgangoora Syncline consists of a folded sequence of mafic and felsic volcanics, sediments and Banded Iron Formation (BIF). At the Main Trend, the mineralisation occurs at the boundary separating one rock body from another, with both the footwall and the hanging wall of the BIF being strongly mineralised. On top of that, Mt York appears to be in a fruitful LCT zone. Already, spodumene-bearing pegmatites have been discovered with 5m of pegmatites recently intersected in Hole KMYC216. Meanwhile, the Iron Stirrup and Old Faithful deposits lie in the East Strelley Formation, 4km and 8km to the north of the Main Trend respectively.

# **Updated JORC resource**

Kairos commenced a major +20,000m RC resource expansion drilling programme in 2021 and this has resulted in an upgraded JORC mineral resource estimate (August 2022) of 28.1Mt @ 1.23g/t gold for 1,104,000oz gold at a 0.7g/t cut-off grade. The majority of these ounces come from a single +3,000m long continuous deposit called the Main Trend with 23.27Mt @ 1.2g/t gold for 899koz, with the remaining ounces coming from the Old Faithful and Iron Stirrup satellite deposits. The board sees Mt York as being a sleeping giant that is untested by drilling in the Main Hill Prospect and at depth within high-grade plunging shoots.



Mt York Gold Project- main trend compared to the 500m long Sydney Harbour Bridge. Source: Company

This large drilling programme has been interrupted by the Western Australian Summer where daytime temperatures can reach 50°C. 11,013.6m of drilling in 49 holes were drilled before the rigs were stood down in December 2022. The majority of these assay results have been returned. Coupled with new results expected for density readings for fresh mineralised samples, this could allow the company to undertake a new MRE in Q1 2023 as there is significant resource growth expected from the 2022 drilling. The Kairos Technical Team firmly believe that extending the resource significantly below the current level is extremely realistic and achievable, along with a conversion of resource classification to a higher confidence level.

Summary of significant results that the company has released to the ASX for the 2022 drilling programme at the Main Trend include:

# **Breccia Hill**

- 15m @ 1.47 g/t Au from 66m incl 5m @ 3.63 g/t Au from 73m (KMYC207)
- 7m @ 3.35 g/t Au from 172m (KMYD027)
- 12m @ 1.54 g/t Au from 123m incl 4m @ 2.96 g/t Au from 130m (KMYD028)
- 11m @ 2.86 g/t Au from 185m incl 8m @ 3.67 g/t Au from 185m (KMYD039)
- 10m @ 4.90 g/t Au from 257m incl 7m @ 6.02 g/t Au from 257m (KMYD040)
- 5m @ 2.11 g/t Au from 140m incl 3m @ 3.23 g/t Au from 140m (KMYD037)

# <u>Gossan Hill</u>

- 23m @ 1.47 g/t Au from 148m incl 7m @ 3.18 g/t Au from 148m (KMYC247)
- 10m @ 2.49 g/t Au from 64m incl 5m @ 4.25 g/t Au from 65m (KMYC262)
- 11m @ 1.78 g/t Au from 177m incl 4m @ 2.67 g/t Au from 184m (KMYD055)
- 20m @ 0.85 g/t Au from 89m incl 7m @ 1.38 g/t Au from 89m (KMYC210)

# <u>The Gap</u>

- 80m @ 0.52 g/t Au from 129m incl 2m @ 1.92 g/t Au from 145m; 4m @ 1.62 g/t Au from 164m & 2m @
  1.75 g/t Au from 194m (KMYD024)
- 9m @ 0.74 g/t Au from 181m incl 5m @ 1.06 g/t Au from 181m; 23m @ 0.67 g/t Au from 214m incl 12m @
  1.01 g/t Au from 194m (KMYD025)

# <u>Main Hill</u>

12m @ 0.83 g/t Au from 131m; 25m @ 0.47 g/t Au from 156m; 19m @ 0.51 g/t from 197m; & 21 m @ 1.38
 g/t Au from 235m incl 6m @ 2.80 g/t Au from 235m (KMYD020)

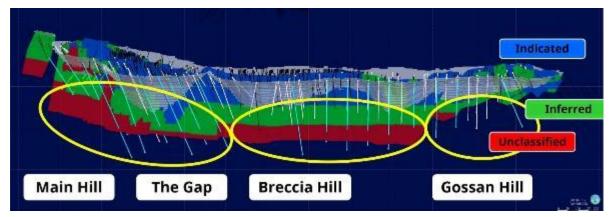
Outside the current resource wireframes, there is further significant resource growth expected. Results from drill hole KMYD071 at the Main Hill are pending but the company provided photographs and commentary during the drilling of a hanging wall BIF contact with 15.4m of a highly silicified  $\pm$  sulphidic zone from 89.2m, typified by strong pyrrhotite  $\pm$  arsenopyrite  $\pm$  chalcopyrite which has historically been associated with high grade gold mineralisation. Results for hole KMYD071 are expected towards the end of March.

| Mt York updated MRE. Source: Company |                      |        |          |        |  |  |  |  |
|--------------------------------------|----------------------|--------|----------|--------|--|--|--|--|
| Project                              | Resource Category    | Tonnes | Grade Au | Ounces |  |  |  |  |
|                                      |                      | Mt     | g/t      | Kozs   |  |  |  |  |
| Main Hill                            | Indicated            | 2.55   | 1.15     | 97     |  |  |  |  |
|                                      | Inferred             | 7.93   | 1.1      | 280    |  |  |  |  |
|                                      | Indicated & Inferred | 10.48  | 1.12     | 377    |  |  |  |  |
| The Gap                              | Indicated            | 1.81   | 1.22     | 71     |  |  |  |  |
|                                      | Inferred             | 1.15   | 0.94     | 35     |  |  |  |  |
|                                      | Indicated & Inferred | 2.96   | 1.11     | 106    |  |  |  |  |
| Breccia Hill                         | Indicated            | 4.83   | 1.31     | 203    |  |  |  |  |
|                                      | Inferred             | 2.78   | 1.34     | 120    |  |  |  |  |
|                                      | Indicated & Inferred | 7.61   | 1.32     | 323    |  |  |  |  |
| Gossan Hill                          | Indicated            | 1.82   | 1.27     | 74     |  |  |  |  |
|                                      | Inferred             | 0.4    | 1.34     | 17     |  |  |  |  |
|                                      | Indicated & Inferred | 2.22   | 1.28     | 92     |  |  |  |  |
| Iron Stirrup                         | Indicated            | 1.18   | 1.81     | 69     |  |  |  |  |
|                                      | Inferred             | 0.63   | 1.66     | 34     |  |  |  |  |
|                                      | Indicated & Inferred | 1.81   | 1.76     | 102    |  |  |  |  |
| Old Faithful                         | Indicated            | 1.73   | 1.19     | 66     |  |  |  |  |
|                                      | Inferred             | 1.19   | 0.96     | 38     |  |  |  |  |
|                                      | Indicated & Inferred | 2.93   | 1.1      | 103    |  |  |  |  |
| Totals                               | Indicated            | 13.93  | 1.3      | 581    |  |  |  |  |
|                                      | Inferred             | 14.08  | 1.15     | 523    |  |  |  |  |
|                                      | Indicated & Inferred | 28.01  | 1.23     | 1,104  |  |  |  |  |

# **Towards a Feasibility Study**

Kairos expects to complete a Feasibility Study (FS) in H2 2023, which involves input from several leading consultants in various aspects, including resource modelling, geotechnical, mining and environmental, and the study will be peer reviewed. At a lower cut-off grade of 0.5 g/t gold, the resource increases to 39.82 Mt @ 1.04 g/t Au for 1,329,000 ounces with Indicated Resources of 18.95 Mt @ 1.11 g/t Au for 676,000 ounces, Inferred Resources of 20.88 Mt @ 0.97 g/t Au for 652,000 ounces. The FS will thoroughly study all the optimal cut-off grades, resource and reserve tonnage, and a detailed estimation of the in-pit resources and reserves. Equally important are the design and geotechnical work and metallurgical test work, which will provide the data to optimise the processing flow sheet.

There is much potential to increase the project resource further. Importantly, the mineral resource is open at depth, and there is a real lack of drilling deeper than 150m along the entire 3,000m length of the Main Trend. The truth is that most of the resource below 150m at Main Hill, The Gap and Breccia Hill is either inferred or unclassified. It may not be in the MRE, but it does provide obvious targets to increase the resource inventory along the base of the entire Main Trend. The company has a clear goal at Mt York, and the Mining Licence applications are underway.



Long section along the Mian Trend with planned holes shown and the optimal pit shells based on a gold price of A\$2,500/oz and mill through put of 3Mtpa. Source: Company

# Tier 1 geology

Kairos is a junior exploration company with a portfolio of good assets seeking to take advantage of current market conditions to progress its gold and lithium projects and increase shareholder value. However, in the prevailing market conditions, fast-tracking the Mt York Gold Project into production looks as though it might not excite investors because gold is being overlooked in place of market favourites like battery metals, especially lithium.

Investors seem to have forsaken gold when there is the opportunity of making many multiples investing in a company going for green energy minerals. In seeking to generate significant value for shareholders, the Kairos team has been rapidly moving its top-shelf lithium projects to a stage of drilling in what is hoped to be new discoveries for the favoured mineral. This is not a case of playing the market, it is just that the company has a large licence area with huge and obvious potential that extends way beyond gold.

The Australian resources market is not just fixated on any lithium. In battery manufacturing, quality is everything, therefore spodumene pegmatites is the only lithium mineral that will suffice. All of this has seen a strong increase in value for spodumene pegmatite plays.

Taking a step back and looking at WA, only a few good spodumene pegmatites have been discovered. In all, there are 14 JORC-compliant lithium resources in Western Australia. In WA many of the granite-greenstone terrains have been explored in detail for conventional minerals like gold and nickel with no attention paid to lithium, cesium and tantalum (LCT) pegmatites. In fact, several of the newly discovered lithium resources were discovered by accident, either the project was drilled for another mineral like gold or copper, or the LCT pegmatites were discovered in the wall of an existing gold pit once the gold had been removed. The point is, the state still remains an immature environment for spodumene pegmatite discoveries.

# Highly leveraged to lithium

Sensibly, Kairos has been looking in depth across its portfolio for spodumene pegmatites. Initially, the team has been looking at the licence areas which surround existing world class spodumene pegmatites deposits in the Pilbara and the Yilgarn. The company has not had to look far. In the Pilbara, they have an extensive tenement close to two world class spodumene pegmatites lithium deposits at Wodgina and Pilgangoora. So, there is a high chance that the Wodgina deposit (259t @ 1.17% Li<sub>2</sub>O) carries on into Kairos' licence area providing scope for extensional drilling. Meanwhile, Mt York surrounds Pilgangoora (309Mt @ 1.14% Li<sub>2</sub>O) on two sides, which seems to warrant the investigation of a deeper system by additional drilling. Without a doubt, Kairos has a series of drill-ready assets that will likely see significant drilling over the next 12 months by the company. It looks like the immediate focus will all be on the timely quest for lithium.

At the Mt York lithium project, the company made the chance discovery of the Lucky Sump spodumene-bearing pegmatite at the surface and tantalum-rich at depth. The Pilgangoora mineralisation may well dip moderately to the east and project across the Kairos licence boundary. The immediate option available to the company appears to be to drill deeper, aiming to intersect the down dip extension of the Pilgangoora system or go for the shallower targets to the south at Zakanaka. Both options are worthy of drilling and the Government of Western Australia may well provide about 50% of the funding for this drilling under the EIS Programme that is popular and allows companies to test targets that they wouldn't necessarily test on their own.

In the Yilgarn Craton (Eastern Goldfields) there is significant, justifiable activity by the company at the 291km<sup>2</sup> Roe Hills project. Detailed geochemical work has resulted in identifying a 2.7km anomaly, called **Black Cat**, that lies in the shadow of the Manna Lithium Project (32Mt @ 1.0% Li<sub>2</sub>O), a world class spodumene pegmatites lithium deposit 10km to the north. The company is about to embark on a drilling programme to understand if it is a spodumene pegmatite and a Manna lookalike.

At Black Cat, the team seems highly optimistic about the potential for pegmatites as the geology of the surrounding land is basaltic in nature and therefore very lithium poor. The coincident Li-Cs-Be-Sn soil geochemical anomaly is 2.7km long and strikes to the northeast, perpendicular to the strike of the geological stratigraphy. There are no outcrops to determine the cause of the soil anomaly, but it is unlikely to due to the underlying basaltic host rock. Clearly, spodumene pegmatite needs to be proven, but Kairos's technical team are confident that the geochemical response in the soils is coming from a lithium-rich pre-cursor rock, likely a lithium-rich pegmatite. Drilling at Black Cat will be an initial 2,500m of RC drilling, and if spodumene pegmatites are reported visually and confirmed in laboratory analysis, drilling could reasonably be expanded to +10,000m of RC and importantly, diamond core to test the orientation of the mineralised zones.

# A growing gold resource in a Tier 1 location

It is difficult to believe that with gold sitting close to a record high of A\$2,700 an ounce, the markets are still not excited about the yellow metal. Mt York Gold Project has a MRE of 1.1Moz, largely from the Main Trend and despite all the names given to the various prospects like Main Hill, The Gap and Gossan Hill, this is one contiguous mineralised unit. Kairos sensibly wants to build up the resource as there seems to be far greater potential than the current resource suggests.

Mt York is hosted in an Archaean banded iron formation (BIF) with consistent mineralisation over 3km. With these styles of gold mineralisation, it is essential for geologists to understand the geometry of the plunging shoots as they can be targeted through the deposit and at depth, possibly giving rise to wide zones of higher-grade mineralisation that could be mined by underground methods once exploitation by open pit methods is complete. The Board of Kairos is keen to move Mt York forward in terms of its project development and will be looking for sensible resource growth milestones to firstly, 1.5Moz and then beyond. The 20,000m drilling programme took a break in December 2022 due to the onset of summer but the plan is to complete the drilling depending on market conditions for gold. Undoubtedly, the Mt York Gold Project is an asset that could drive a share price but needs market support favouring gold. The board is supportive of further work to move the project closer towards feasibility but understands future risks and shareholder value. It is always looking at the best options to move the project forward in the interests of shareholders.

The assay results from the 11,013.6m of drilling completed at Mt York in 2022 may well help to increase the JORC-compliant resource inventory. So too, might re-examining the specific gravity of mineralised and unmineralized samples as the bulk density used in the past may not be entirely accurate. Historically, the company has used a specific gravity of 2.9. Management now thinks this may no longer be correct, and so has taken a number of samples (approximately 50 across the deposit) for bulk density readings. So, there could be double upside by re-estimating the resource using the 11,013.6m of drilling from 2022 and applying actual bulk density data from the samples currently at the laboratory. Redetermining the MRE is not a large expense and no doubt the company will consider the cost-benefit analysis once all the results are finally received at the end of March. It is likely that the company will provide a new MRE in the first half of 2023 subject to market conditions.

As the project advances through the next round of MRE, the resource model will be optimised to develop a series of pit shells that can be used as a guide for further targeting. During the optimisation process, key inputs are used to develop a series of project scenarios. The major criteria used are the gold price and the processing through-put of the ore through a hypothetical mine process route. In the past, the company has used a series of gold prices from A\$1,900 to A\$3,000 and process rates of 1.8 mtpa to 4 mtpa. The financial outcomes of all scenarios are examined in detail. In the past, a 3 mtpa process rate and a gold price of \$2,500 per ounce have been used to develop pit shells with which further drilling, targeting areas of the resource that have little or no drilling, is planned. The previous optimal pit shell used suggested that the project could be mined by open pit methods in a single, 3km long pit. However, more work needs to be completed, especially on the metallurgical front to provide certain inputs when the models are re-run for the feasibility.

What the company observed in historic metallurgical reports by Lynas Gold NL, who mined the very surface of the deposit between 1994 and 1998, was that the gold appears fine-grained to the extent that the ore needs milling to -75 microns for recovery of the gold. Lynas did report recoveries of >90% during mining. Metallurgical test work has not yet been completed by Kairos, but it is the intention of the company to complete full testwork for its own feasibility.

Drilling the remainder of the 20,000m programme on the gold in 2023 will be subject to the market. Kairos has already applied for two Mining Leases, which cover all the company's exploration area at Mt York. This may be a 12-month administration process and involves engagement with all stakeholders in the project including the traditional owners, the Nyamal Peoples. No feasibility study is required to gain a Mining Lease, but the granting of a mining lease is one of the first steps towards establishing an operating mine. Key next steps under Western Australian legislation is to provide a mining proposal including a mine closure plan. This will be contained in a detailed feasibility study which the company wishes to pursue.

# Plenty of drilling to come in 2023

Over the next 12 months, the company will be very busy drilling lithium prospects and hopefully delivering new results from the Mt York Gold Project. The board knows that there could be some easy wins had by drilling Black Cat and the nearby Crystal Palace lithium prospects. As a group, they understand the valuations that get awarded to lithium juniors on any reasonable level of success. The ease with which such companies are able to raise substantial funds will not be missed by the management.

Moving forward, the company is seeking to improve the value of both lithium and gold, but in that order. Or rather, get an improved valuation on the gold and chase spodumene pegmatites at the drill-bit. The following 12 months' exploration budget ranges from A\$4 million to A\$7.5 million. A\$4 million would cover the lithium targets, and the larger amount would allow the second half of the 20,000m drilling programme on the Mt York Gold Project to be completed. Investors should not be disappointed with the anticipated newsflow, as there looks to be plenty of drilling to come in 2023. Kairos has been a little overlooked in our view, but it does not take much to regain the market spotlight – one decent lithium intersection could achieve that.

# **Geological risks**

There are a series of technical risk factors concerning the amount of understanding of the geology of the project areas, the mineralisation style being targeted and the distribution and magnitude of the indicators that have been identified in exploration work.

# Lithium and gold price risks

Metal prices are highly cyclical, and changes in the prices of lithium and gold could negatively or positively impact the valuation of the company's projects and revenue from the sales.

# **Exchange rate risks**

The company's accounts are in Australian dollars, and metal prices are in US dollars. Therefore, fluctuations in the value of the Australian dollar against the US dollar may well affect the valuation that Kairos is awarded by the ASX stock market.

# **Future funds**

The market for raising funds for small-cap companies looks to have improved from the challenging conditions a couple of years ago when the global spread of the COVID-19 pandemic meant that equity markets had become extremely difficult. However, even though the planet has begun to live more freely once more, the ratcheting up of political tensions concerning Ukraine, steeply rising energy prices, and growing global inflation has made the market turn its back on risky plays. This has led to several recent fundraisings in the resources sector, seeing share prices being undermined by incoming investors demanding 30-50% discounts to provide the necessary capital.

# **Board of Directors**

# Klaus Eckhof – Non-Executive Chairman

Klaus is a well-known geologist and mining executive with a long history of acquiring and developing globally significant gold, base metal and lithium deposits in Australia and worldwide. He led Moto Gold Mines' Kibali project in the DRC to a 20 Moz gold explorer before its take-over by Randgold for US\$700 million, later to be absorbed into Barrick Gold for US\$6.5 billion. Klaus also spearheaded the discovery of the world's largest lithium hard rock deposit, Manono, in the DRC through AVZ Minerals Ltd.

# Dr Peter Turner – Managing Director

Peter is an experienced geologist with a rich history of discovering and developing mineral projects in Australia, Africa, the Middle East and Asia. In addition, he has over 25 years of project management in challenging environments. Dr Turner is an accomplished gold deposit expert with significant experience with iron ore, base metals and lithium deposits. He attained his PhD in West African Geology from the University of Portsmouth in the UK.

# Phil Coulson – Non-Executive Director

Phil has over 20 years corporate advisory experience, having held senior advisory positions at Montagu Stockbrokers and Patersons Securities Limited. He has promoted and advised numerous companies in identifying and acquiring technology and resource projects. Currently a private investor and corporate consultant, Phil holds debt and equity positions in several public and private companies.

Most recently, he facilitated the transformation of Vital Metals Ltd (ASX:VML) into a rare earths business. Before this, he facilitated the reverse takeover of ResApp Diagnostics Pty Ltd by Narhex Life Sciences Limited (ASX: RAP) and the reverse takeover of Alcidion Group Limited by Naracoota Resources Limited (ASX: ALC). He holds a Bachelor of Economics from UWA (1993).

# Zane Lewis – Non-Executive Director

Zane is a principal and founder of corporate advisory firm SmallCap Corporate, which specialises in corporate advice to public companies and is managing director of Golden Triangle Capital which connects listed entities with a community of professional and sophisticated investors, providing funding for all stages in strategic development.

Most recently, he facilitated the transformation of Odessa Minerals Limited (ASX:ODE) into an Australian focused critical minerals exploration company, the IPO of mining services company Aquirian Limited (ASX:AQN) and was instrumental in the transformation of Vital Metals Ltd (ASX:VML) into a rare earths business. Zane is a Fellow of the Governance Institute of Australia, the Chairman of Odessa Minerals Limited, and a Non-Executive Director of Lion Energy Limited and Kingsland Global Limited.

#### Mark Calderwood – Non-Executive Director

Mark is a mineral sector veteran with 30 years of discovery and development experience in Australia and Africa of gold and lithium projects. He was previously Managing Director of TSX and ASX-listed Perseus Mining Ltd, taking the company from a junior explorer to a well-respected mid-tier gold producer in several years. Mark also oversaw the development and construction of the Bald Hill Lithium project in the Eastern Goldfields, earning him the respect of being one of few company directors who have built both gold and lithium projects to operating mines.

# Sebastian Andre – Company Secretary

Sebastian is a Chartered Secretary with over ten years of experience in corporate advisory, governance and risk services. He has previously acted as an adviser at the ASX. Therefore, he has a thorough understanding of the ASX Listing Rules, specialising in providing advice to companies and their boards regarding capital raisings, IPOs, backdoor listings, corporate compliance and governance matters. Sebastian holds accounting, finance, and corporate governance qualifications and is a member of the Governance Institute of Australia.

# **Forecast**

# FYs 2023 & 2024

In the year ending 30th June 2023, extensive drilling at the Mt York Gold Project and assaying and preliminary metallurgical test work are ongoing. As lithium is seen to be the immediate priority over gold, drilling will commence at Black Cat and Crystal Palace targets. Revenue is estimated at A\$0.5 million, which comes from R&D grants. The year ending 30<sup>th</sup> September 2024 is expected to see further lithium drilling and the remainder of the +20,000m drilling programme at Mt York Gold completed, plus a number of the other elements which will feed into the Feasibility Study. Revenue is forecast to remain consistent at A\$0.5 million from R&D grants.

| Year End 30 June (A\$'000s)            | FY 2021a      | FY 2022a      | FY 2023e      | FY 2024      |
|----------------------------------------|---------------|---------------|---------------|--------------|
| REVENUE                                |               |               |               |              |
| Interest revenue from external parties | 16            | 14            | -             |              |
| Other                                  | 343           | 394           | 500           | 50           |
| TOTAL REVENUE                          | 359           | 408           | 500           | 500          |
| EXPENSES                               |               |               |               |              |
| Audit fees                             | (35)          | (36)          | (36)          | (36          |
| Depreciation                           | (6)           | (92)          | (100)         | (100         |
| Depreciation – right-of-use asset      | (47)          | (57)          | (70)          | (80          |
| Directors' remuneration                | (164)         | (520)         | (600)         | (650         |
| Director share-based payments          | (1,581)       | (894)         | (1,000)       | (1,000       |
| Travel and marketing                   | (254)         | (255)         | (300)         | (350         |
| Professional fees                      | (402)         | (407)         | (450)         | (500         |
| Equity settled share-based payments    | (1,253)       | (967)         | (1,000)       | (1.500       |
| Occupancy expenses                     | (82)          | (90)          | (100)         | (100         |
| Administration and other expenses      | (463)         | (480)         | (500)         | (500         |
| Impairment of tenement Assets          | -             | (777)         | -             | ,            |
| Finance costs                          | (10)          | (10)          | (10)          | (10          |
| TOTAL EXPENSES                         | (4,299)       | (4,554)       | (4,166)       | (4,826       |
| Loss before income tax                 | (3,940)       | (4,147)       | (3,666)       | (4,326       |
| Income tax expense                     | -             | -             | -             |              |
| Loss for the year after income tax     | (3,940)       | (4,147)       | (3,666)       | (4,326       |
|                                        |               |               |               |              |
| Other comprehensive income             |               |               |               |              |
| Changes in fair values of investments  |               |               |               |              |
| at fair value through other            |               |               |               |              |
| comprehensive income, net of tax       | 291           | (8)           | 0             | (            |
| Total comprehensive loss for the year  | (3,648)       | (4,155)       | (3,666)       | (4,326       |
|                                        |               |               |               |              |
| Loss attributable to:                  |               |               |               |              |
| Owners of Kairos Minerals Ltd          | (3,940)       | (4,147)       | (3,666)       | (4,326       |
| Non-controlling interests              | -             | -             | -             |              |
|                                        | (3,940)       | (4,147)       | (3,666)       | (4,326       |
|                                        |               |               |               |              |
| Total comprehensive loss attributable  |               |               |               |              |
| to:                                    |               |               |               |              |
| Owners of Kairos Minerals Ltd          | (3,649)       | (4,155)       | (3,666)       | (4,326       |
| Non-controlling interests              | -             | -             | -             |              |
|                                        | (3,648)       | (4,155)       | (3,666)       | (4,326       |
|                                        |               |               |               |              |
| Earnings per share (A\$ cents)         | (0.24)        | (0.24)        | (0.18)        | (0.19        |
| Weighted average number of shares      | 1,608,503,912 | 1,809,504,720 | 2,028,449,655 | 2,336,984,45 |
| Total shares plus options and warrants | 2,210,493,486 | 2,490,493,491 | 2,533,493,491 | 2,533,493,49 |

# Valuation

# Compelling peer group comparisons

Kairos Minerals has made great advances in targeting large-scale lithium and gold discoveries in WA's premier mining districts, which are well-known for Tier 1 mining projects. Therefore, in seeking to value the company's assets and place a target price on the stock that makes sense in today's equity markets, we have used peer group comparison for both the lithium and the gold interests.

# Lithium

The Australian market is very buoyant for spodumene pegmatite discoveries, and a premium seems to be paid for 10Mt of spodumene pegmatite. We have sought to investigate the valuation awarded to exploration companies in WA on successfully discovering spodumene pegmatite lithium resources shown in the table below. There are not many comparisons as there are only circa 14 such JORC resources in Australia, and at the last count, only two did not have an offtake agreement in place. However, our analysis reveals a median EV/t figure for total resource is A\$844 and for Measured & Indicated categories is A\$1,822.

| Spodumene pegr                                                                       | natite lith | ium exp | loration          | compani           | es in WA | . Sourc | e: Resol | ve Resea          | arch  |                                                               |
|--------------------------------------------------------------------------------------|-------------|---------|-------------------|-------------------|----------|---------|----------|-------------------|-------|---------------------------------------------------------------|
| Company                                                                              | EV          | N       | leasured          | & Indicate        | ed       |         | Total r  | esources          |       | Comments                                                      |
|                                                                                      | A\$m        | Mt      | %                 | Kt                | EV/t     | Mt      | %        | Kt                | EV/t  |                                                               |
|                                                                                      |             |         | Li <sub>2</sub> O | Li <sub>2</sub> O | Α\$      |         | Li₂O     | Li <sub>2</sub> O | Α\$   |                                                               |
|                                                                                      |             |         |                   | JORC R            | ESOURC   | E       |          |                   |       |                                                               |
| <b>Red Dirt Metals</b><br>(ASX:RDT)<br>Share price: A\$0.40<br>Mcap: A\$180.19m      | 117.49      | 3.3     | 1.4               | 46                | 2,554    | 12.7    | 1.2      | 148               | 794   | Mt Ida (drilling)                                             |
| Liontown<br>Resources<br>(ASX:LTR)<br>Share price: A\$1.62<br>Mcap: A\$3.64bn        | 3,256       | 129     | 1.4               | 1,786             | 1,823    | 156     | 1.4      | 2,184             | 1,491 | Kathleen Valley<br>(DFS – first<br>production Q2<br>2024)     |
| <b>Essential Metals</b><br>(ASX:ESS)<br>Share price: A\$0.48<br>Mcap: A\$129.77m     | 121.61      | 5.4     | 1.30              | 70                | 1,737    | 11.2    | 1.21     | 136               | 894   | Dome North<br>(drilling)                                      |
| Global Lithium<br>Resources<br>(ASX:GL1)<br>Share price: A\$1.60<br>Mcap: A\$344.27m | 267.91      | 22.3    | 1.02              | 228               | 1,175    | 50.7    | 1.0%     | 507               | 528   | Manna at<br>Scoping Study<br>stage + Marble<br>Bar (drilling) |
| Median                                                                               |             |         |                   |                   | 1,780    |         |          |                   | 844   |                                                               |
| Average                                                                              |             |         |                   |                   | 1,822    |         |          |                   | 927   |                                                               |

It is also worth looking at M&A deals in the sector. The magic figure appears to be a minimum of 10Mt @ 1%  $Li_2O$  (lithia) when companies are taken over. Our attention is drawn to the Manna Lithium resource, which has thick pegmatite widths over an outcropping strike length of more than 1.5km - the high-grade spodumene discovery was made in 2018 while doing reconnaissance exploration for gold. Global Lithium now owns a 100% interest in the Manna Lithium resource, which it acquired from Breaker Resources in a two-stage process. Global Lithium announced the acquisition of the remaining 20% of Manna in October 2022 for A\$60 million in cash and a 1.5% NSR royalty. Since Global first acquired an interest in the Manna in late-2021, Global has delivered a maiden MRE of 9.9Mt @ 1.14%  $Li_2O$  for 113kt  $Li_2O$ . On that kind of basis, the price paid per tonne comes out at **A\$2,655**.

Analysis by current equity market valuations and recent M&A deals suggest that a lithium resource is worth AS\$844 – A\$2,655 per tonne. Therefore, to remain conservative by using the bottom-of-the-range figure of A\$844/t would suggest that if Kairos was to discover 10Mt @ 1% Li<sub>2</sub>O, then the company's lithium interests would be valued at a conservative A\$84 million.

Here we must point out that with 2.7km strike of lithium-in-soils already defined at Black Cat, there is the potential for more than 10Mt, but we remain conservative. If drilling at both Black Cat and Crystal Palace should disappoint, the plan is to move the rigs over to Mt York in search of spodumene pegmatite, where there is good potential for the discovery of 10Mt @ 1% Li<sub>2</sub>O.

By looking at the following two pre-JORC resource peer companies, one decent intersection could increase Kairos' share price substantially. Bulletin Resources (ASX:BNR), last seen trading at A\$0.10 per share, has a market cap of A\$32.3 million, and at its Ravensthorpe Lithium Project, the best intersection has been 10m @ 1.1% Li<sub>2</sub>O Zenith Minerals (ASX:ZNC) has a market cap of A\$80.89 million at the current share price of A\$0.23 and has announced the best intersection of 26m @ 1.2% Li<sub>2</sub>O at its Spilt Rocks project.

# Gold

At the company's Mt York Gold Project, the Main Trend combined with the nearby Iron Stirrup and Old Faithful deposits currently has a JORC-compliant resource of 28.01Mt @ 1.23g/t gold for 1,104,000oz at a 0.7g/t cut-off grade where 13.93Mt @ 1.3g/t for 581Koz is in the Indicated category. Kairos' Enterprise Value (EV) per ounce is low at just A\$32/ounce.

Peer group comparisons assembled in the table overleaf include several similar companies. Our analysis shows that the median EV/oz figure for total resource is A\$71, and for Measured & Indicated categories is A\$195. This suggests valuations for the company's gold interests of A\$78.38 million and A\$113.30 million based on 1,104koz and 581koz. We have decided to use a mid-range valuation of A\$95.84 million based on current market conditions, which has been transferred into our SOTP table.

The company wants to develop the Mt York Gold Project and is eyeing the next milestone resource base of 1.5Moz initially and then perhaps 2Moz at Mt York. The company is currently just over halfway through a +20,000m drilling programme focused on adding ounces to the resource with most of the assays already in. At the same time, the specific gravity number of 2.9 that has long been used might not be appropriate, so work has gone on checking this, which could result in a quick uplift in the number of ounces.

Given investors' current attitude towards gold stocks, it is unsurprising if the Kairos management thought there was more value created in channelling funds into lithium exploration, where good results could be rewarded rather than spending on upgrading the gold resource. Using a hypothetical 1.5Moz gold resource and applying both the calculated median EV/oz figure for total resource of A\$71/ounce, and A\$195/ounce for Measured & Indicated categories respectively, the value of a 1.5Moz resource, would give valuations of A\$106.5 million and A\$146.25 million respectively which is worth bearing in mind.

| Company                                                                                | EV     | M     | easured | & Indicat | ed          |      | Total re | sources |             | Comments                                       |
|----------------------------------------------------------------------------------------|--------|-------|---------|-----------|-------------|------|----------|---------|-------------|------------------------------------------------|
| ,                                                                                      | A\$m   | Mt    | g/t     | Koz       | EV/t<br>A\$ | Mt   | g/t      | Koz     | EV/t<br>A\$ |                                                |
| JORC RESOURCE                                                                          |        |       |         |           |             |      |          |         |             |                                                |
| <b>Greatland Gold</b><br>(LSE:GGP)<br>Share price: 7.40p<br>Mcap: £367.48m             | 720.62 | 10.5  | 2.8     | 1,140     | 632         | 27.6 | 1.9      | 1,950   | 370         | Haveron (30%)<br>Undertaken<br>Stage 1 PFS     |
| <b>Genesis Minerals</b><br>(ASX:GMD)<br>Share price: A\$1.02<br>Mcap: A\$417.18m       | 358.16 | 20.5  | 1.75    | 1,160     | 309         | 39.3 | 1.6      | 2,017   | 178         | Leonara Gold<br>Project                        |
| Alto Metals<br>(ASX:AME)<br>Share price:<br>A\$0.062<br>Mcap: A\$37.99m                | 33.59  | 3     | 1.7     | 159       | 211         | 12.4 | 1.6      | 635     | 53          | Sandstone Gold<br>Project                      |
| Mcap. ASS7.55m<br>Metal Bank<br>(ASX:MBK)<br>Share price:<br>A\$0.021<br>Mcap A\$6.08m | 6.58   | 0.71  | 1.47    | 33        | 199         | 1.38 | 1.41     | 63      | 104         | Livingstone Gol<br>Project (75%) &<br>Homstead |
| Musgrave<br>Minerals<br>(ASX:MGV)<br>Share price: A\$0.17<br>Mcap: A\$97.55m           | 82.95  | 5.129 | 2.6     | 435       | 191         | 12.3 | 2.3      | 927     | 89          | Cue Project                                    |
| Brightstar<br>Resources<br>(ASX:BTR)<br>Share price:<br>A\$0.017<br>Mcap: A\$14.10m    | 13.64  | 2.68  | 1.65    | 143       | 95          | 7.49 | 1.5      | 354     | 39          | Cork Tree, Alph<br>and Beta, WA                |
| Astral Resources<br>(ASX:AAR)<br>Share price: A\$0.07<br>Mcap: A\$47.10m               | 43.60  | 14.3  | 1.1     | 506       | 86          | 33   | 1.1      | 1,150   | 38          | Mandilla Gold<br>Project                       |
| Ausgold<br>(ASX:AUC)<br>Share price:<br>A\$0.051<br>Mcap: A\$105.53m                   | 100.03 | 45.8  | 1.2     | 1,784     | 56          | 56   | 1.21     | 2,160   | 46          | Kataning Gold<br>Project. Yilgarn              |
| Median                                                                                 |        |       |         |           | 195         |      |          |         | 71          |                                                |
| Average                                                                                |        |       |         |           | 222         |      |          |         | 115         |                                                |

| Sum Of The Parts Table. Source: Resolve Research                                 |             |                |
|----------------------------------------------------------------------------------|-------------|----------------|
| Gold resource MRE                                                                | Actual      | Stretch target |
|                                                                                  | 1.104Moz    | 1.5Moz         |
| Items                                                                            | A\$ million | A\$ million    |
| Mt York Gold Project - peer group analysis                                       | 95.84       | 126.38         |
| Cash                                                                             | 2.70        | 2.70           |
| Debt                                                                             | -           | -              |
| Sub-total                                                                        | 98.54       | 129.08         |
| Per share based on the current number of shares in issue (1,962,093,491)         | A\$0.050    | A\$0.066       |
| On a fully diluted basis                                                         |             |                |
| Funds on options and warrants being exercised                                    | 18.97       | 18.97          |
| Sub-total                                                                        | 117.51      | 148.05         |
| Per share based on the number of shares on a fully diluted basis (2,533,493,491) | A\$0.046    | A\$0.058       |
| Discovery of 10Mt @ 1% Lithium – peer group analysis                             | 84.00       | 84.00          |
| Total                                                                            | 201.51      | 232.05         |
| Per share based on the number of shares on a fully diluted basis (2,533,493,491) | A\$0.080    | A\$0.92        |

After considering current cash and debt, the sub-total comes to A\$95.84 million, which equates to A\$0.050 per share based on the number of shares currently in issue (1,964,093,491). Then looking on a fully diluted basis, we add the funds which would result from options and warrants being exercised of A\$18.97 million, which gives a total figure of A\$117.51 million. This results in a per share value of A\$0.046 based on the number of shares on a fully diluted basis (2,533,493,491), which is a figure that we have selected to use as our target price for the stock.

However, we must point out the potential that success with the drill bit for lithium might generate. A potential discovery of 10Mt @ 1%  $Li_2O$  would add a conservative A\$84 million to our valuation, taking it to a total of A\$201.51 million. Getting to this stage would require a more substantial drilling programme than planned at the current time, but a significant amount of funds could come in from options and warrants being exercised. Using the same number of shares on a fully diluted basis, the valuation per share comes out at A\$0.080, which is worth investors bearing in mind.

# Stretch target

We also investigated the sort of target price that would be generated if the company attains the hypothetical 1.5Moz gold resource. As mentioned earlier on, applying both the calculated median EV/oz figure for a total resource of A\$71/ounce and A\$195/ounce for Measured & Indicated categories, respectively, the value of a 1.5Moz resource would give valuations of A\$106.5 million and A\$146.25 million respectively and an average figure of A\$126.38 million. Repeating the same analysis suggests A\$0.066 per share based on the number of shares currently in issue (1,964,093,491) and A\$0.058 on a fully diluted basis (2,533,493,491). Factoring in the additional valuation gained from the lithium discovery scenario outlined above would suggest a valuation per share of A\$0.092, which is something to consider.

# Conclusion

# Majoring on lithium in 2023

Looking ahead, a healthy amount of news flow is on the horizon. Plenty of good news flow has been announced following on from the assay results from the latest drilling at the Mt York Gold Project in 2022. Investors will also be brought up to speed with the company's lithium exploration, with new results from infill soil geochemical work at Black Cat and more detail being provided for the planned lithium drilling programme. Also, we envisage an announcement on an updated MRE for Mt York based on the latest drilling results and a reassessment of the SG in 2023. However, mineral evaluation work might be put on hold for a while, along with the second half of the 20,000m RC programme, waiting for investors to engage more with gold. Completing this drilling at the Mt York Gold Project would, of course, assist the company towards additional mining studies and re-optimisation of the resource that would help develop the project through a feasibility study.

First up on the lithium agenda is de-risking Black Cat. The real push is to get this project drilled as soon as possible. It must be told that the Managing Director, Dr Peter Turner, is very excited about the potential for buried spodumene-bearing pegmatites here. The company's presentations and announcements have suggested that Black Cat could be a lookalike of Global Lithium's Manna Lithium Project (32.7Mt @ 1.0% Li<sub>2</sub>O). No doubt neighbouring lithium companies will closely monitor Kairos' drilling results once they are available. We suspect that they already have some idea of what Kairos might find.

The company's Roe Hills Project lies to the south of Manna, and to the east is Alchemy Resources which has been through the same process. Alchemy found anomalies at the surface with drilling successfully discovering spodumene pegmatite, but the grade was low. Alchemy's stock went from 1.5 cents to 5 cents and back again as the market was disappointed that it did not get 10-15Mt at 1% lithium. They have not finished exploration yet, and it is not easy as the mineralisation is buried, so it could not be found by geochemical work. Most spodumene pegmatites are cryptic systems with much variation in the mineralogy throughout the system. There can be variation over a short distance, and you need a PhD in geology to understand how tantalum and lithium play out. As has been seen many times, drilling many holes and finding nothing is possible. But the price of Alchemy stock moved significantly on the pure excitement of the initial drilling of its lithium prospects.

#### Free Option on WA's best Li postcode

For all the analysis by the various exploration companies in the Manna area, the message that seems to be coming out loud and clear is that Cardunia Syenogranite is seen to be the fluid originator and the heat engine for spodumene pegmatite in the area. There is so much to play for here, and in our view investors have an excellent opportunity to get into this stock at an attractively low level. Currently, we believe the share price not only tremendously undervalues the gold but also places little value on the lithium. Therefore, we see this as a free option on lithium.

There are plenty of good reasons to buy Kairos (ASX:KAI). The company offers a unique proposition on a growing gold project alongside highly compelling opportunities in the lithium space, which is bound to be the centre of attention throughout 2023. On gold alone, we believe the stock is fundamentally undervalued. But if Kairos hit spodumene pegmatite in only one project, there could be a strong share price re-rating. All that could happen reasonably quickly. If for any reason, there were disappointing lithium drilling results at both Black Cat and Crystal Palace, then the rigs would be swiftly moved onto the Mt York Lithium Project. There is so much going on here that we believe is not reflected by the stock price in any way. We are initiating coverage with a Strong Buy stance and a target price of A\$0.046.

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