



Which explorers are unlocking the treasure chest with maiden gold and copper resources in 2023?

Pic: Getty

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In the latest instalment of our maiden resources series, we've picked out nearly a dozen stocks that could post maiden JORC 2012 gold and copper resources in 2023.

A maiden lithium resource is as close to a sure thing for a rerate as you can get, with interest in the metals key to electric vehicle production riding high.

A maiden gold resource could be just as significant, but with less steam in the market and a glut of companies in the space the response from the audience is far more unpredictable.

You've already caught a peep at some of the companies expecting to post lithium resources for the first time in 2023.

But if ever there was a time to be announcing your first official gold ounces it could be now.

Bullion has been on a high this year so far amid expectations the severity and pace of rate rises is going to slow.

We may have to put a pin in that optimism after a strong US jobs print on Friday sent prices down over 2% to US\$1875/oz.

But experts think a worsening global economic outlook provides a positive signal for gold to prosper this year after worldwide demand hit an 11-year high in 2022.

Copper, often found alongside gold, is also enjoying stronger prices in early 2023.

Like with lithium, what makes for inferred, indicated and measured gold resources on the ASX are determined by the Joint Ore Reserves Committee based on its 2012 code.

Whether you can determine a resource and what level of confidence you have that the gold is there is dependent on the spacing and quantity of your drill data.

The higher confidence categories, indicated and measured, can be used to determine ore reserves. Those are estimates of gold in the ground ready to be mined at the right gold price.

Some companies can drill for years to identify a resource worth posting – not necessarily a bad thing, many want more drill data to maximise their knowledge of a resource, hit a higher confidence level on their first announcement or are forced by circumstance to raise cash in tough markets.

Others, like De Grey Mining (ASX:DEG) at its Hemi discovery and Bellevue Gold (ASX:BGL), hit the mother lode and are able to secure capital to grow their resource at a rapid pace.

The ASX 200 companies are both examples that good exploration can pay off handsomely.

With that said, here are 11 companies in the ASX gold and copper space who could be on track to deliver a maiden in 2023.

Lefroy Exploration (ASX:LEX)

Along with a fellow copper stock a little further down this list, this one may be one of the JORC resources most clamoured for by investors tracking a long-term story.

Lefroy, whose Simpsons-inspired target naming convention is a thing of beauty, made the Burns discovery all the way back in early 2021.

The discovery hole two years ago registered a tasty 38m at 7.63g/t of gold and 0.56% copper from 134m deep at its 100% owned ground in the Lefroy Gold Project, near deposits mined by WA gold titans like Silver Lake Resources (ASX:SLR) and Gold Fields, who have an exploration farm-in with LEX over adjacent ground.

What has emerged over the past two years has proved an unusual discovery for WA's rich Kalgoorlie and Kambalda gold fields, a large, bulk copper and gold rich porphyry.

Having briefly surged to over \$1.50 a share in the immediate aftermath of the Burns discovery, LEX has been plugging away since, eventually kicking off a 15,000m resource definition drilling campaign in October last year on a 40m by 40m grid.

The maiden JORC resource at Burns is due this quarter on what is a new and unique style of intrusion-related, gold, copper, molybdenum and silver mineral system, hosted by Archean age diorite-porphyry intrusives and high-magnesium basalt.

OzAurum Resources (ASX:OZM)

Kalgoorlie prospector, geologist and mining executive Andrew Pumphrey once mulled the prospect of selling his Mulgabbie North gold project, 2km from Northern Star's (ASX:NST) Carosue Dam tenements.

Instead he took them to IPO in 2021, immediately encountering exploration success as OzAurum kicked off a 50,000m drilling program following a \$12m IPO.

Initial assays included shallow RC hits like 4m at 10.26g/t gold, with subsequent diamond drilling capturing longer, lower grade intervals including 55m at 1g/t in the first diamond hole drilled into the Mulgabbie North Demag Zone.

The ore can be processed as well. Met test work of oxide samples have shown CIP recoveries of up to 98.6%, with average recoveries from fresh samples of 88.3%.

Have the results been good so far? It's hard to say. Whether this thing has legs and is more than just another Kalgoorlie gold deposit will depend on how those disparate drill results come together into a single orebody.

The maiden resource estimate is due this quarter, something MD Pumphrey said would be a "defining moment for the company". A better than expected outcome would be positive for the company, which has seen its share price fall 66% since peaking at 23c in its first week on the boards.

Carnaby Resources (ASX:CNB)

Now this one is highly anticipated. We haven't really seen a major discovery turn into a company maker for a while.

Three years ago we had the one-two punch of De Grey Mining (ASX:DEG) and Chalice Mining (ASX:CHN), both now ASX 200 companies on exploration success at their respective Hemi gold and Julimar nickel-copper-PGE discoveries in WA.

Before that was Bellevue Gold (ASX:BGL), which graduates its pre-production adolescence later this year when its eponymous mine pours gold and it faces a life of real responsibilities with all in sustaining costs and things like that.

Overseas Guinea-focused explorer Predictive Discovery (ASX:PDI) has quickly grown its 3Moz plus Bankan gold project.

Niobium driller WA1 Resources (ASX:WA1) and PGE whisperer Galileo Mining (ASX:GAL) may still be a year or so out at their West Arunta and Callisto finds.

\$172 million capped Carnaby Resources (ASX:CNB) hasn't seen the same outsized gains as those companies, but has drawn the watchful eye of investors with its Greater Duchess copper-gold project in the Mt Isa inlier.

A vaunted iron-oxide copper-gold province playing host to operations like the Ernest Henry and Eloise mines, Carnaby has uncovered wide, high grade interceptions at its Nil Desperandum, Lady Fanny and Mount Hope prospects.

CNB shares are up 700% on a five-year basis, briefly spiking to more than \$2 in the wake of the Nil Desperadum find. It has since fallen to around \$1.20.

Most recently Mt Hope delivered 39m at 5.2% copper and 0.5g/t gold, part of a 40,000m RC and diamond drill program ahead of a maiden resource currently scheduled for the second quarter of 2023.

Riedel Resources (ASX:RIE)

The very definition of a penny stock, Riedel Resources was trading at exactly one cent on Friday.

But the \$13 million capped tiddler has some solid, well known names literally on board with Ramelius Resources (ASX:RMS) director and Cygnus Gold (ASX:CY5) chair Michael Bohm in the hotseat as Riedel chairman.

The company is focused on its "high grade" Kingman gold project in Arizona, where a 23-hole diamond drill program took place late last year.

All results are expected this quarter with a potential maiden mineral resource due this year.

Drilling has been focused around its Tintic target, which returned hits like 5.5m at 12.4g/t Au, 105g/t Ag and 3.9% Pb from 16.8m and 3.96m at 6.81g/t and 47g/t Ag in results released early this year.

Kalgoorlie Gold Mining (ASX:KAL)

Given the city's reputation as the unofficial gold capital of Australia, it's a wonder we waited so long for an ASX-listed explorer with the code KAL.

This Kalgoorlie Gold Mining is a spin off of a spin off, listed in November 2021 with the gold assets of nickel-cobalt play Ardea Resources (ASX:ARL), itself once part of the now collapsed Heron Resources.

Kalgoorlie Gold Mining expects to deliver the maiden JORC 2012 compliant resource estimate from the La Mascotte prospect, part of its Bulong Taurus project 35km east of Kalgoorlie-Boulder, this quarter.

Unusually for this day and age, La Mascotte was outcropping, rare in a time when miners normally have to drill deep under cover to make new discoveries.

Recent hits from Phase-4 RC drilling have confirmed extensions to the shallow gold discovery at depth, including 3m at 6.43g/t from 61m, with a single metre interval grading 17.9g/t in hole BLRC220092.

"Results from the most recent round of RC drilling at La Mascotte provide huge encouragement for the continuity of gold mineralisation to depth. KalGold's drilling indicates a broad zone of gold mineralisation continuing to the northwest and open at depth. It seems likely that we've hit the southern side of the mineralised zone," CEO Matt Painter said.

"These new results are currently being incorporated into the first ever JORC (2012) Resource Estimate at La Mascotte, due for release this quarter.

"As one of the few outcropping gold prospects in the Eastern Goldfields, the resource will integrate extensive historic drilling data with the company's recent work, illustrating KalGold's cost efficient approach to building a JORC (2012) Resource base."

Bulong Taurus sits near gold resources controlled by Silver Lake Resources (ASX:SLR) and Black Cat Syndicate (ASX:BC8), with the Taurus gold mining centre discovered originally in the 1890s gold rush and worked by prospectors since.

KalGold says it's the first company "in generations" to assemble the full tenement package and search for significant gold deposits.

Benz Mining Corp (ASX:BNZ)

Benz Mining Corp has a curious corporate brand, what with its Mercedes aping name and logo.

It could be a canny ploy to get the auto giant to invest in some of its so hot right now James Bay Canadian lithium and/or secure a payout for domain name squatting, or it could just be searching for the giddy feeling of buying a knockoff footy jumper in Kuta (carn the West Bulldogs).

But with well-known mining exec Evan Cranston at the helm as interim CEO, there is plenty of work going on for the dual-listed Canadian-Australian explorer to stand out in its own right.

A fully funded C\$10 million diamond drilling campaign – C\$7m for critical minerals and C\$3m for gold – focused on the Upper Eastmain Greenstone Belt is under way, with the first drill hole to follow up several gold intersections at the E Zone discovery, including a hit of 1m at 365.5g/t from 81m.

Being in James Bay lithium, copper and nickel are also in focus. 4000m of the 12,000m diamond program will be dedicated to critical minerals exploration following up a maiden drill program which intersected 30m at 0.9% Li₂O.

Assays are still pending for 1600 samples including lithium from the Ruby Hill West target and gold assays from Eastmain.

E Zone, a virgin gold discovery under glacial cover made with the help of electromagnetics by Benz in 2020, has had 33 holes drilled into it by the junior.

11 of those have returned assays over 8g/t gold, with the precious metal intersected in wide spaced drilling in an area, open on all sides, that measures 700m by 600m from surface to a depth of 350m.

Preliminary results from modelling on the maiden mineral resource are expected to be available during the first quarter.

“We are really excited to kick off our fully funded \$10 million 2023 drill program. Initially, we will be targeting gaps in our gold resource model that are too broad to be considered for resource classification whilst we wait for assays from our 2022 drill program on the regional targets,” Cranston told investors last week.

“We are also thrilled to have secured the services of Dahrouge Geological Consultants who have been involved in several high-profile lithium discoveries in the James Bay Region. To have their skillset will be invaluable to accelerate the lithium exploration on a greenstone belt that has seen less than a handful of holes targeting this critical element.”

Benz's Australian CDIs are up almost 25% YTD.

Great Southern Mining (ASX:GSN)

Great Southern Mining is drilling out the Southern Star prospect in the well-known 8Moz Duketon gold field near Laverton, just 4km south and along strike of Regis Resources' (ASX:RRL) 390,000oz Ben Hur deposit.

Can it be ... bigger than Ben Hur?

Sorry, but that joke will be made again should the results of resource drilling excite.

RC and aircore drilling will start this quarter at Southern Star and the Amy Clarke and Golden Boulder prospects to the north, near 500,000ozpa Regis' Rosemont, Garden Well and Moolart Well plants.

It comes after GSN, led by former mining analyst and S2 Resources (ASX:S2R) boss Matthew Keane, raised \$1.75 million in a placement at the start of this month.

Drilling will test depth extensions to known mineralisation at Southern Star and test newly identified geochemical targets along strike from the main mineralised zone.

At Amy Clarke, GSN has an extensive gold anomaly defined over a 3.6km strike on shallow aircore drilling, with a new soil geochemical survey extending that gold-in-soil anomaly a further 1.4km to the south, a strike length in excess of 5km.

"The scale of this anomaly bodes well for a large underlying mineralised gold system at Amy Clarke," GSN says.

BMG Resources (ASX:BMG)

BMG is working towards a maiden gold resource at its Capital prospect, part of the Abercromby project in the Agnew-Wiluna gold belt in WA's northern Goldfields.

Home to some of WA's largest gold and nickel discoveries, BMG is working to define a resource after two successful drilling programs last year which identified high grade gold at the site.

The explorer completed its third major drilling program at Abercromby in September, consisting of seven diamond holes at Capital for 3989m and 59 aircore holes to test large gold anomalies to the south at Capital South, Archer and Barrack.

A strong intercept from the West Lode in hole 21ABDD007A indicated the potential for a new high-grade shoot, 335m south of previously known mineralisation boasting a hit of 5.56m at 3.5g/t from 400m downhole.

Other assays included 6m at 2.79g/t from 171m, 90m at 0.6g/t from 250m, incl. 9m at 1.81g/t from 303m and 8.45m at 3.46g/t from 414.5m and 13m at 2.3g/t from 317m, the last two in hole 22ABDD010.

Test work to support a scoping study for a mining proposal at Abercromby is being undertaken by Extreme Metallurgy and GR Engineering (ASX:GNG), but BMG also says it remains open to adding new projects, especially in the lithium and battery metals space.

Nagambie Resources (ASX:NAG)

Nagambie is operating in the Victorian Goldfields, where the junior explorer is part of the exploration revival that has taken place since the discovery of the legendary high-grade Swan Zone at Agnico Eagle's Fosterville gold mine in 2016.

Also located next to TSX listed Mandalay Resources and its Costerfield gold mine, the sixth highest grade underground gold mine in the world and Australia's only antimony operation (US\$220m in revenue in FY2021), Nagambie has some unusual advantages most explorers don't.

It has permitting, in a JV with unlisted Golden Camel Mining, to construct a 180,000tpa processing plant, with 100% of the build costs to be assumed by the privately-owned partner.

It also has two legacy gold pits, suited for the storage of mine waste, an important point given the regulatory attitude towards new mining developments in Victoria remains basically untested.

Drill results in November confirmed the existence of antimony and gold, with a Costerfield-style hit of 3g/t gold and 20.5g/t gold equivalent at the C1 vein, 6.8 times NAG's planned mineable cut-off of 3g/t AuEq.

A second high grade vein system, C2, was discovered 200m west of C1 in January, with 10 high grade intersections from each average 16.3g/t AuEq (6.3% antimony and 4.3g/t gold) at an average potential stope width of 1.8m.

As an aside, 10% NAG shareholder Southern Cross Gold (ASX: SXG), which listed on the ASX in May last year, has also had success drilling out its own gold and antimony targets at the Sunday Creek prospect, where resource and expansion drilling is due to take place over the next 12 months.

Odyssey Gold (ODY)

Odyssey Gold began drilling the Highway Zone at its Tuckanarra project in the multi-million ounce Murchison goldfields in October with a 19-hole RC program, part of a larger 7800m multiphase resource, infill and extension program.

The aim is to firm up oxide gold mineralisation which defined a 'significant mineralised shoot', 300m long and surrounded by 7.5Mtpa of regional processing capacity.

A 21-hole, 2232m program in the fourth quarter of FY22 hit a number of gold intersections, including a strike of 43m at 8.3g/t from 41m, an intercept which boasted two even higher grade intervals of 12m at 27.5g/t from 70m and 3m at 80.9g/t from 73m.

Odyssey wants to extend shallow wide mineralisation to the east of the Highway Zone as it aims to firm up the open pit prospects at Tuckanarra, while a third phase of drilling will look to grow 5g/t+ mineralisation to demonstrate its underground potential.

Mines in the region, like those operated by Westgold Resources (ASX:WGX), typically extend to over 1km deep, with the deepest intersection so far at the Highway Zone intersecting the gold bearing structure to just 180m below surface.

Tennant Minerals (ASX:TMS)

Tennant Minerals has a market cap of around \$20m and is on the trail of a copper and gold deposit in the Northern Territory at its Bluebird discovery.

Drilling has identified "intensely copper mineralised" intersections which have doubled the strike-length of the deposit to 240m with a depth extent of over 300m.

More assays are expected soon with drilling likely to recommence for Stage 2 drilling after the NT wet season in March and April.

Located within the Barkly project in the Tennant Creek field, where past production has included 5.5Moz of gold and 700,000t of copper, non-exec chairman Matthew Driscoll said further discovery potential abounds.

"The latest drilling at Bluebird has continued to grow the discovery, which remains completely open. Following the keenly awaited assay results we plan to recommence drilling aimed at further expanding the resource potential of this very exciting copper-gold discovery," he said in the group's quarterly report.

"Using geophysical targeting, the company has identified potential for multiple other copper-gold deposits within 2.5km of Bluebird and given mineralisation at Tennant Creek tends to be clustered,

we have high expectations that we will be making further discoveries within the Barkly Project in 2023.”

Super Over

We’re bringing back the cricket analogies for this one with a couple of companies beating us to the punch to add to your 2023 notebook.

Aston Minerals (ASX:ASO) has drawn more interest for the nickel potential of its Bardwell prospect in Ontario, Canada.

But it’s also shot out of the blocks in 2023 with a maiden resource of 48.1Mt at 1g/t gold from 1.5Moz, 400,200oz at 0.9g/t in the indicated category, at its Edleston Main and Sirola prospects.

Aston says it is evaluating opportunities to monetise its gold resource and the remainder of its non-core portfolio, with a resource estimate and exploration target imminent for its nickel and cobalt prospects.

Great Boulder Resources (ASX:GBR), one of the stocks in the sights of our experts last year, also posted an inferred resource at its Side Well gold project in Meekatharra of 6.192Mt at 2.6g/t for 518,000oz.

That includes 5.258Mt at 2.5g/t for 431,000oz at the major Mulga Bill deposit and 934,000oz at 2.9g/t for 87,000oz at Ironbark.

Both have higher grade components coming to a combined 370,000oz at 5g/t with a 2g/t cut-off, 300,000oz of that at Mulga Bill.

The MRE came within 18 months of the discovery at Mulga Bill and six months at Ironbark at a cost of around \$17 an ounce with resource growth RC drilling to begin this month.

MD Andrew Paterson says GBR is not done yet.

“The maiden resource estimate is significant for three main reasons. Firstly, it materially de-risks Side Well by demonstrating that we understand the controls on mineralisation at Mulga Bill such that we can demonstrate continuity on multiple gold-bearing structures to build up a significant resource inventory,” he said.

“Secondly, it’s a fantastic effort to get to 518,000 ounces of gold after two years of drilling with such a small team. It’s a significant milestone on our way to the million ounces of gold that we believe the project has the potential to contain.”

“Lastly, it demonstrates the broader potential of the project. This estimate covers a relatively small area of the project, and we already have extensional targets on both deposits plus more drilling to define the potential at Flagpole and Loaded Dog. Then there’s the regional targets along the prospective eastern stratigraphy of Side Well.

“I think we will see substantial growth to the resource inventory throughout the year and into 2024 from extensional drilling and new discoveries.”

This series is intended to be a moving feast. If we’ve missed anyone get in touch and let us know at josh.chiat@stockhead.com.au.

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