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FAR EAST CAPITAL

The Mining Investment Experts

Weekly Commentary

2 December 2023 *Chart comments at Friday's close* Analyst : Warwick Grigor

Gold going from strength to strength

Gold has had an excellent week, breaching US$2,070/oz in Friday's trading in the US. This vindicated our comments over a number of months where we advised that gold stocks will be coming back into focus. Silver is similarly attracting attention.

There is a general acceptance in the market that US interest rates have peaked, so the market is preparing for the next phase of reducing interest rates. Even though this is more of a medium term expectation the market is factoring it in now. So, the US dollar is softer and commodities priced in US dollars are rising. As mentioned above, gold has been a great performer.

Those who hold gold producers will be pleased but how many investors have good exposure to the sector? Risk preferring investors looking for greater leverage will go for pre-development stocks that still have a strong exploration component to their projects, be it brownfields or virginal. These offer the best opportunity for re-rating in the event of material exploration success.

Something in between can be seen with the recently announced pre-IPO raising for Linden Gold Alliance Limited (LGA), which is seeking to restart projects mined previously, then shut down. (The Term Sheet said it was a Pty Ltd company, but the Presentation says it is Limited). While these don't have exploration risk, they do carry recommissioning risk. The promoters are going back to mines that have closed relatively recently, but were they terminated for economic reasons alone, or technical reasons? There will always be a story told as to why they are worthwhile revisiting, but it will usually be more opinionated that strictly factual. There will be some merit, but often they are more tradesman-like in nature than wildly exciting. In many cases it is more about how the promoters are going to make money than the general investing public.

This week we take a closer look at recent discoveries of gold deposits that could lead to a new generation of high-grade Australian underground gold mines.

First Graphene getting strong traction on carbon reductions in cement

With COP 28 in full swing in Dubai last week, the attendees are looking at new ways to look at the carbon emission issues, focusing on climate change justice, food production and methane. Though, the elephant in the room is still the cement and concrete industry.

Despite the emergence of a range of alternative methods of reducing emissions from the sector, it still appears that the fastest and simplest method of reducing carbon emissions is the addition of graphene. First Graphene is showing itself to be a world leader in this initiative. Having achieved excellent results in test work with UK's largest cement producer, Breedon, the program has recently attracted interest from other major companies that include Holcim NZ and Siam City Cement. Discussions are being held with a number of smaller companies as the word is starting to get around. FGR is successfully producing its PureGraph product for a number of customers and achieving annual sales growth of around 100% p.a., but the huge volumes that the cement industry will need will be a game changer. The growth curve could be very steep. Click on the link below for further detail

https://www.marketindex.com.au/news/a-green-revolution-for-the-ususd56-billion-cement-industry-and-this-stock-is

Disclosure: Interests associated with the author owns shares in First Graphene and the author is the Chairman of FGR.

High-grade gold discoveries that could be mines

You will have all heard the expression that "grade is king", especially with reference to gold. Gold deposits frequently occur as high grade veins in the first instance with these offering superior profit margins but more modest tonnages. The high grade deposits are usually the first to be exploited, as evidenced by the history of Australian gold mines over more than 100 years. Over time, technology and higher gold prices can make economic that which was previously marginal, enabling the transition to mining of lower grade deposits.

Revival built on large tonnage, low grades

Depending upon the precise geology and weathering events over time, the gold in the high grade deposits can travel into the country rock to form lower grade, large volume deposits in oxidised or weathered ground. This type of deposit was the key focus of the revival of the gold sector in the 1980s and 1990s, particularly in the highly weathered geology found in WA. Back then it was normal to expand operations to achieve the benefits of economies of scale, to a point where marginal revenue from each tonne of ore equaled marginal costs. A strong impetus for this approach was the need to extract as much gold as possible, while gold earnings were still exempt from income tax.

Australia developed world-leading open pit mining techniques. The 100,000 oz p.a. production rate was viewed as a benchmark to aim for, as this would imply a market capitalisation large enough to attract institutional investors. As the open pits began to approach the maximum pit depths where deeper, higher grade but narrower orebodies became the norm, many of the large capacity treatment plants became less fit for purpose. Many operations didn't make the transition, leaving the deeper orebodies for the next generation of gold miners.

Underground orebodies are now widespread

It took a while to develop the mining and management skills, but the sector has successfully transitioned many operations to the underground phase. The emphasis is still on economies of scale with the need for mechanised equipment to overcome high labour costs in Australia. The ever rising gold price has been instrumental in making many of these gold mines more profitable than what one might have previously expected, enabling relatively low grades to be mined. Careful management is always essential to keep a good handle on profit margins.

Narrow vein, high grade gold projects

So far Australian investors have not fallen in love with narrow vein, high-grade gold projects. Perhaps this is because there have not been sufficient successes for them to inspire investors. Perhaps it is because by definition they will always be small, often producing less than 50,000 oz p.a. They require specialist mining and management skills and a completely different mindset to open pit operations.

Further, this type of mine doesn't sit comfortably with compliance and regulations emanating from the risk-averse JORC regime that seeks to minimise geological risk up front. Generally, calculation of reserves and resource is more difficult with underground mines and this can lead to an under-appreciation of potentially long life operations. Grade calculation can be problematic due to nuggety gold, as we have seen in Bendigo in years gone by.

There can often be a serious discrepancy between geological, in-situ grades and actual grades delivered to the mill. A classic example was the Lady Bountiful gold mine near Broad Arrow, in WA. Back in the 1980s Consolidated Exploration promoted this as an 18-20 gpt gold project, but when WMC got around to mining it, the head grade was lucky to reach 10 gpt. The bogey is alway the dilution on mining. Contractors get paid for the tonnages they mine, and this invariably conflicts with the maximisation of grade. The Daisy Milano was another example of an underground mine that had great difficulty with dilution.

Breaking ground can be intimidating

An exploration program is always run by a geologist who loves drilling holes and adding to their geological model. They get turned on by exciting intercepts but eventually, if these are going to count for anything, an engineer has to go to work on the discovery to determine how to get the gold out of the ground. This can frequently result in the dismissal of half of the gold resource as it involves estimates of mining dilution. Depending upon the rock mechanics, this can be anything from 10% to 25%. The dilution has a direct impact on the grade, and therefore the profit margin. Geologists hate to the hand their babies over the engineers, who they sometimes describe as "orebody killers".

Apart from these pre-mining considerations, there is another set of issues when ground is first broken. Access to orebodies can be via declines, shafts or adit. The exact method depends upon the geology and the location. An adit is usually the fastest when it develops on the orebody itself, enabling early cash flows in the development process. A decline or shaft involves more work in non-productive ground prior to reaching the orebody. It takes longer and costs more, but it does enable higher tonnages to be mined. However, always remember that large tonnages and economies of scale start to highlight dilution risk.

Note the physical restriction involved in opening up a mine in the first instance. Every time a face is blasted, the swelling factor of the broken ore needs to be considered. It can be a long process to blast and remove enough rock in the development drives and stopes faces to get enough room to move around. Expect that you could be looking at up to two years from the first blast to having enough faces opened up to enable continuous ore production.

Another thing to consider is that the early delivery of ore to a treatment plant will involve a mix of development and stoping ore. The orebody itself might be 15 gpt in-situ, falling perhaps to 11-12 gpt with mining dilution, but development ore might constitute 40-60% of the feed to the mill in the early years. That means the average head grade could easily fall to 6-8 gpt. So, you can quickly see how investors can be disappointed with the reported numbers when a mine gets up and running for the first time.

Examples of high-grade discoveries in Australia

There are plenty of promoters that try to get investors excited about high-grade gold discoveries, but you must take care to consider whether there is actually enough of the material to justify developing. Three promising recent discoveries come to mind. You have Nagambie Resources (NAG) and Southern Cross Gold (SXG) in Victoria, and Pacgold (PGO) in Queensland. Are these likely to result in the development of high grade mines or will they hang around for years while the management tries to work up the courage, and raise the finance, to break ground? Time will tell.

First, the Victorian discoveries - gold and antimony

The two Victorian discoveries have been identified over the last 18 months, so there has not yet been enough time for shareholders to become impatient. While the systems are similar in terms of geometry and metallurgy, each company is approaching them from different perspectives. Southern Cross has opted to present very large intercepts at good grade, averaging very high grades with lesser grades. That focuses on the rich gold endowment of the project rather than the practicality of mining. The market seems to love this approach with the SXG share price being one of the best performers on the bourse. However, once the geologists have done their job, the engineers will need to go to work. They will need to design a mine that takes into account all aspects of development, including social and environmental considerations, whilst dealing with a mines department in Victoria that is anything but mining friendly. A large open pit mine will be very hard to permit, whereas a more focused, smaller footprint underground mine may be more acceptable to the greenies.

Nagambie shareholders are probably feeling a bit miffed that their discovery has not received the accolades that have been attributed to Southern Cross. After all, it is an excellent discovery that could support a long life, high grade gold/antimony mine. For better or worse, Nagambie management has decided to by-pass the stock market euphoric phase when a geological success is showcased to the market. Rather than generate and milk the market excitement, Nagambie has taken its guidance from the engineering perspective and focused on minimum mining widths rather than broader geological reporting. Whether this is pragmatically the best approach is open to debate but it is showing courage in focusing on the ultimate goal, that of proving mineable orebodies.

Both of these Victorian discoveries could reasonably develop into long life, high-grade gold mines. However, these won't happen overnight and there is plenty of room for market perspectives to vary over time.

Next, Far North Queensland

The third example is Pacgold, with its Alice River Gold Project in Far North Queensland. Pacgold is exploring a high-level intrusion related gold system that initially excited the market, but which more recently has lost some momentum such that the market capitalisation is only $16m, with a cash balance of around $4.2m. I first saw this about two years ago and noted that it was something special, so the question is "*when will it return to favour*?" Will more of the same i.e. continuing positive exploration drill results move the market, or will it be some other event such as first gold production?

There is already an historical open pit going down to 30-40m, into fresh rock, so excavating a decline off the floor of the pit could relatively quickly give good information on the orebody with respect to mining conditions and recoverable grades - all valuable information - but should this be the strategy right now?

One geological opinion suggests that the ore system could easily extend down to depths of 1 km or more, but the focus at the moment is on the top 400m. Drilling has been widely spaced with 100m and 200m step outs that support the theory that this a big system rather than tightly constrained, but that does mean that continuity is still to be proved. The 30 km of strike potential means that it is quite an exerccise to determine where the best location is to first open up a decline.

At times the best path is to get underground sooner rather than later, but where you have a regional scale project the decision point is not so clear. We note that Pacgold has a strong institutional shareholder base, accounting for almost 30% of the issued capital. These guys are there for the big picture rather than a small start-up and incremental growth. Pacgold management is obliged to respect their views as shareholders own the Company. However, institutions do not have a monopoly on smart decisions - as we have seen when they exit registers of junior companies. They are fund managers rather mine operators and their opinions can vary with market sentiment. They might be happy to be patient for now, but they can change their mind. Sometimes their views are at odds with the wider population of investors. What matters most to Pacific is that its supportive shareholder base will continue to fund the programs as and when capital is needed.

There is nothing wrong with a two pronged strategy of opening up underground workings whilst still exploring for the big picture. However, this requires more capital than the company has now, having recently raised $3.2m. Another $5m would be needed and that would be difficult with the share price so low.

So, it seems that Alice River will be not be turning a profit in the near future. In that sense it is similar to the two above mentioned Victorian discoveries. Nevertheless, Pacgold could be a suitable investment for longer term thinkers while the stronger gold price recently could encourage greater speculative market activity.

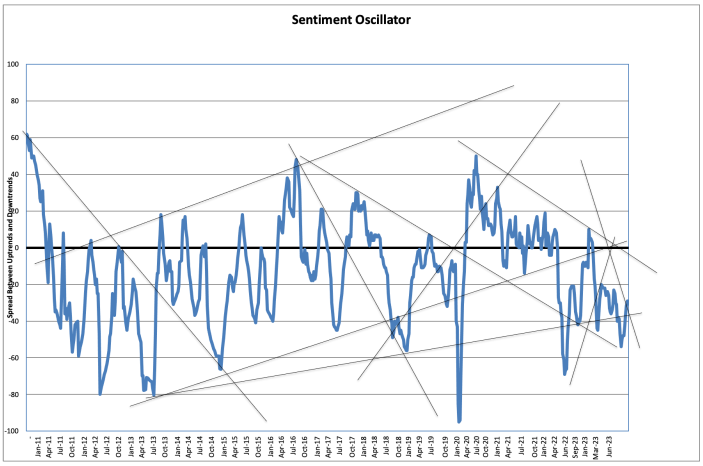
The Bottom Line

High-grade underground gold mines can be profitably developed in Australia, over time, but there are many considerations to take into account before getting enthusiastic. One may get excited by initial drill results but what really counts is what the eventual head grade to the mill will be, and that will always disappoint the shallow thinking punters. As with most mining projects, one needs to be patient as the real truth begins to filter through.

Next week we will look at an alternative approach to developing underground gold mines - a fast track, low capex approach that could be more suitable for junior gold companies rather than the compliance driven approach.

Disclosure: Interests associated with the author owns shares in Nagambie and the author is a director.

This week we have added Aurora Energy Metals (1AE) to our chart coverage, giving greater weighting to uranium stocks.



Sentiment Oscillator: Sentiment improved slightly There were 22% (22%) of stocks in uptrend and 51% (54%) in downtrend at the close of the week.

Detailed Chart Comments

NB. Only the bold comments have been updated. Comments in grey type are from previous weeks and will be less relevant. Please note that this list is a cross section of the market. It IS NOT a list of recommendations.

Indices	Code	Trend Comment	
All Ordinaries	XAO	bouncing from lows	
Metals and Mining	XMM	at final resistance line	
Energy	XEJ	continuing to fall	
Information Technology	XIJ	bouncing from lows	
Stocks	**Code**	**Trend Comment (updated comments in bold)**	**Main Interest**
Aurora Energy Metals	1AE	down	uranium
5EA Advanced Materials	5EA	returned to downtrend - new low	boron
92 Energy	92E	rising	uranium
Alpha HPA	A4N	strong recovery	HPA
Adriatic Resources	ADT	new high	zinc, polymetallic
Advance Metals (was Pacific American)	AVM	back to lows	coal, gold exploration
Aguia Resources	AGR	at lows	phosphate, copper exploration
Alkane Resources	ALK	down	gold
Alicanto Minerals	AQI	testing new uptrend	base metals, silver, gold
Almonty Industries	AII	breached downtrend	tungsten
Altech Chemical	ATC	sideways	HPA, anodes
Alto Metals	AME	at lows with a placement	gold exploration
American Rare Earths	ARR	sideways	rare earths
Anax Metals	ANX	new low	copper
Anteotech	ADO	new low on placement	silicon anodes, biotech
Antilles Gold	AAU	new low	gold and copper expl.
Arafura Resources	ARU	new low	rare earths
Ardea Resources	ARL	secondary downtrend	nickel
Arizona Lithium	AZL	breached downtrend	lithium
Astral Resources	AAR	rising	gold
Aurelia Metals	AMI	breaching downtrend	gold + base metals
Australian Rare Earths	AR3	about to test downtrend	rare earths
Australian Strategic Materials	ASM	strong rally	rare earths
Azure Minerals	AZS	another surge higher then pullback	nickel exploration
BHP	BHP	breached downtrend	diversified, iron ore
Barton Gold	BGD	testing downtrend	gold exploration
Beach Energy	BPT	breached uptrend	oil and gas
Bellevue Gold	BGL	back to highs	gold exploration
Black Cat Syndicate	BC8	steep rally	gold
BMG Resources	BMG	down	gold exploration
Boab Metals	BML	rising	silver/lead

Calidus Resources	CAI		new low	gold
Caravel Minerals	CVV		strong rally	copper
Carnaby Resources	CNB		new low	copper
Castile Resources	CST		back to lows	gold/copper/cobalt
Cazaly Resources	CAZ		breached downtrend	rare earths
Celsius Resources	CLA		sideways	copper
Cobalt Blue	COB		down again	cobalt
Cyprium Metals	CYM		forming a base	copper
Dateline	DTR		down	rare earths
Ecograf	EGR		rising, but approaching resistance line	graphite
Emerald Resources	EMR		rising, new high	gold
Empire Energy	EEG		risen to resistance line	gas
EQ Resources	EQR		breached uptrend	tungsten
Euro Manganese	EMN		testing downtrend	manganese
Evolution Energy	EV1		new low	graphite
Evolution Mining	EVN		rising again	gold
First Graphene	FGR		breached uptrend	graphene
Fortescue Metals	FMG		new high	iron ore
FYI Resources	FYI		testing steepest downtrend	HPA
Galena Mining	G1A		new low	lead
Genesis Minerals	GMD		new high	gold
Genmin	GEN		suspended	iron ore
Gold 50	G50		down	gold exploration + gallium
Great Boulder Resources	GBR		new low	gold exploration
Group 6 Metals	G6M		down	tungsten
Hamelin Gold	HMG		testing downtrend	gold exploration
Hastings Technology Metals	HAS		back to lows	rare earths
Hazer Group	HZR		breached steepest downtrend	hydrogen
Heavy Minerals	HVY		down	garnet
Highfield Resources	HFR		new low	potash
Hillgrove Resources	HGO		rising gently	copper
Iluka Resources	ILU		heavy fall	mineral sands
ioneer (was Global Geoscience)	INR		down	lithium
Ionic Rare Earths	IXR		breached downtrend	rare earths
Jervois Mining	JVR		rising	nickel/cobalt
Jindalee Resources	JRL		new low	lithium
Kaiser Reef	KAU		new low	gold
Kalina Power	KPO		testing downtrend	power station additive
Krakatoa Resources	KTA		surge on lithium drilling	rare earths
Kingfisher Mining	KFM		breached downtrend	rare earths
Lepidico	LPD		improving	lithium
Lindian Resources	LIN		testing downtrend	rare earths + bauxite
Lion One Metals	LLO		surge out of downtrend	gold
Li-S Energy	LIS		new low	Lithium sulphur battery technology

LCL Resources	LCL		back to lows	gold exploration
Lotus Resources	LOT		rising	uranium
Lucapa Diamond	LOM		sideways	diamonds
Lunnon Metals	LM8		new low	nickel
Lynas Corp.	LYC		still down	rare earths
Marmota	MEU		surged higher	gold exploration
Matador Mining	MZZ		breached downtrend	gold exploration
Mayur Resources	MRL		back in uptrend	renewables, cement
Meeka Gold	MEK		down	gold
Megado Minerals	MEG		down	rare earths, gold exploration
MetalsX	MLX		down	tin, nickel
Meteoric Resources	MEI		off its high	rare earths
Metro Mining	MMI		sideways	bauxite
Midas Minerals	MM1		slump	lithium
Nagambie Resources	NAG		breached downtrend	gold, antimony
Neometals	NMT		new low	lithium
Newfield Resources	NWF		down	diamonds
Northern Star Res.	NST		rising	gold
Nova Minerals	NVA		spiked higher	gold exploration
Pacific Gold	PGO		breached short term uptrend	gold exploration
Pantoro	PNR		breached downtrend	gold
Panoramic Res	PAN		suspended	nickel
Patriot Battery Metals	PMT		breached uptrend	lithium
Peak Resources	PEK		new low	rare earths
Peninsula Energy	PEN		collapse on $60m raising	uranium
Perseus Mining	PRU		rising again	gold
Poseidon Nickel	POS		collapse	nickel
Provaris Energy	PV1		turning down	hydrogen
QMines	QML		new low	copper
Queensland Pacific Metals	QPM		long term down	nickel/cobalt/HPA
RareX	REE		breached downtrend	rare earths, phosphate
Regis Resources	RRL		breached steepest downtrend	gold
Renergen	RLT		strong bounce from lows	gas, helium
Richmond Vanadium	RVT		heavy fall on release of escrowed shares	vanadium
RIO	RIO		rising again	diversified, iron ore
Rumble Resources	RTR		secondary downtrend	gold exploration
S2 Resources	S2R		sideways	gold exploration
Sandfire Resources	SFR		sideways through downtrend	copper
Santos	STO		weaker	oil/gas
Sarama Resources	SRR		at rock bottom	gold exploration
Sarytogan Graphite	SGA		new low	graphite
Siren Gold	SNG		new low	gold exploration
South Harz Potash	SHP		testing downtrend	potash
Southern Cross Gold	SXG		surge higher	gold exploration

Southern Palladium	SPD		breached downtrend	PGMs
Stanmore Coal	SMR		new high	coal
Strandline Resources	STA		suspended	mineral sands
Sunstone Metals	STM		meeting resistance line	gold/copper exploration
Suvo Strategic Minerals	SUV		sideways	kaolin
Talga Resources	TLG		down	graphite
Tamboran Resources	TBN		improving	gas
Technology Metals	TMT		down	vanadium
Theta Gold Mines	TGM		strong rise	gold
Thor Energy	THR		back into downtrend	uranium
Tietto Minerals	TIE		surge on takeover approach	gold
Vanadium Resources	VR8		drifting lower	vanadium
Venture Minerals	VMS		down	tin, tungsten
Vintage Energy	VEN		breached downtrend	gas
Voltaic Strategic Resources	VSR		new low	REO + lithium
West Cobar	WC1		down	rare earth + lithium
Westgold Resources	WGX		new high	gold
West Wits Mining	WWI		sideways	gold
Whitehaven Coal	WHC		testing downtrend	coal
Xantippe Resources	XTC		down	lithium
Zenith Minerals	ZNC		strong rise	gold exploration
Totals	22%	31	Uptrend	
	51%	71	Downtrend	
		138	Total	

Guides to Chart Interpretations

- Charts usually go pass from one trend (up or down) into the other via a period of indecision and uncertainty during which the trend can either recover or change. This period is signified by the orange colour. The orange represent both the greatest risk and greatest reward possibilities.
- Once a chart is in confirmed up or downtrends it is not uncommon for 10-20% of that trend to have already transpired.
- There are trends within trends. The focus of this chart review is the immediate trend that affects the sentiment i.e. it can be a downtrend within a long-term uptrend.
- Not every chart warrants a new comment every week. The new comments are in bold type. Grey type comments may be dated.
- Individual charts provide a single view. It is valuable to look at charts of other companies in similar commodities, and the overall sentiment is also very valuable. Not many stocks can swim against the tide.
- We periodically add or delete charts, some times for obscure reasons. If a chart consistent gives poor signals or is very erratic, we may delete it. Sometimes we add a chart because we want to see what all the fuss is about. We do have a preference for charting stocks that we cover in our research as well.
- Errors and omissions may occur from time to time, especially in fast moving markets.

Amber Lights in Tables: Just a reminder if when the amber light is used in the table – it is when the charts are ambiguous or when there is a change of trend taking place. If a chart is breaching a downtrend it can either be a positive sign or a trap. Only once it has done more work can it be confirmed as a new uptrend. Maybe it is a new uptrend (or conversely a new downtrend); the risk takers can decide to jump on board early (or sell). They will maximise their profits (or minimise their losses if indeed it is the start of the new uptrend (downtrend). More risk-averse investors should wait a little longer, being prepared to give up some of the gains in return for greater certainty.

Weightings of Sectors Represented in the Company Charts

Sector	No. of Companies	Weighting	
Gold Exploration	18	13.0%	
Gold	18	13.0%	
Rare Earths	16	11.6%	
Lithium	10	7.2%	
Oil/Gas	8	5.8%	
Copper	9	6.5%	
Nickel	7	5.1%	
Iron Ore/Manganese	5	3.6%	
Graphite/graphene	5	3.6%	
Uranium	6	4.3%	
Silver	4	40.0%	
Tungsten	3	2.2%	
Mineral Sands	2	1.4%	
Vanadium	3	30.0%	
Zinc/Lead	2	1.4%	
Coal	2	1.4%	
Potash/Phosphate	3	2.2%	
Bauxite	2	1.4%	
Tin	2	1.4%	
Cobalt	1	0.7%	
Diamonds	2	1.4%	
Other	10		
Total	138		

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