

Sarytogan - a super high-grade graphite with special merit

Where to the gold price now that Trump has been victorious? The knee-jerk reaction of a 3% fall on the news is curious as Trump's win wasn't really a surprise, so why the sell-down? It should have already been factored in. Perhaps it is just a direct correlation with the upward movement in the US dollar as Americans beat their chests. Whatever the reason, it caused an aggressive sell-down of our gold stocks the subsequent day. Not to worry. I'd be inclined to say this gives us a buying opportunity as this gold bull market is definitely not over. Look how the gold price rallied as the week progressed.

Currently the two main areas of influence on the gold price are inflation and interest rates in the USA, and international geopolitical tensions. If Trump bumps up tariffs it will contribute to inflation in the USA, and keep interest rates higher for longer, but if that is what the market was thinking, why did the Dow rise 3.6% on the election outcome?

Is it possible that Trump will be the peacemaker who solves the wars? That would be fanciful for a President who is more concerned with domestic affairs than cultural and political battlefronts in distant regions. If anything, having Trump in the White House increases uncertainty, and that should be good for the gold price.

Given that most of the buying of bullion has been coming from outside of the USA in recent years, we are not seeing anything that is about to change the trend. The US Presidential politics is more of a distraction at the moment.

Trump is known for his disdain for all things environmental. His election cannot be good for new age and battery metals stocks, especially if he pulls the Inflation Reduction Act. He said "drill baby drill" as he is encouraging more oil production in the USA. The USA is already the largest exporter of oil products in the world, courtesy of shale oil. His policies will lead to an increase in oil supply and a lower oil price, which will be useful in keeping inflation under control. We watch with interest.

Graphite has been a serial non-deliverer

Based on the performance of graphite stocks over the last 10 to 15 years it is surprising that the narrative has continued for so long, with so few successes. The winners have been the performers in the stock market rather than operationally. If you combine heavy promotion with limited technical information to an audience that is very naive and uninformed, it is always possible to suck in buyers.

Graphite is an industrial mineral and not a rare commodity. Orebodies are seldom generic, meaning that you need to understand the geological and metallurgical characteristics of each deposit to see if there is room for it in the market place. You have to consider logistics and most importantly, you have to find a buyer.

Companies work hard to say why their type of graphite is the best. Earlier on in the story we saw the debate about flake sizes with bigger being better, according to promoters,

even though the market was limited. Then we saw companies going downstream to get involved in anode production (or at least design) as a way to work their way into a demand situation for their graphite. That route is very challenging as introducing a purportedly disruptive product is not easy for an Aussie junior company. The flip side for going down this path is really that they can't sell their product without something extra, and they have to convince battery makers that the "extra" has sufficient technical merit and more importantly, economic merit. It is no wonder that we can't see this business model as having achieved any commercial success yet.

Sarytogan is somewhat different, in a good way

Trying to distinguish one project from the next brings us back to Sarytogan Graphite (SGA), a relatively recent entrant into the field. Remember that this Kazakhstan-based project has an Indicated and Inferred Resource of 229 Mt at 28.9% TGC, making it even higher grade than Talga's. The Probable Ore Reserve is 8.6 Mt at 30% TGC. If SGA can get a mine up and running here, the life will be indefinite, but more than 100 years.

Bespoke processing method due to ore type

Most graphite companies tell us that they can achieve graphite concentrate grades of > 95% ahead of purification to get >99% quality. However, due to the fine grain size at Sarytogan, it could only get its 5-10 μm size product to achieve 80% concentration via flotation. As the market wants 20 μm size carbon spheres, SGA will use spheronisation mills to "snowball" the physical size up to 20 μm .

The next step to get to a 99.9992% grade is thermal purification followed by the spheronisation step. Other graphite companies would go to chemical purification to get the final upgrade, but the lower grade of the Sarytogan concentrate (80%) resulted in up to 20% deleterious material remaining. Removing this through chemical purification is possible but expensive.

By going straight to thermal purification using a fluidised bed reactor, the concentrate is inductively heated to 2,800^o very quickly. This process sublimates (evaporates) impurities when it goes from a solid to a gaseous phase in quick time, giving an ultra-high purity graphite grade. The process route delivers three saleable products;

- i) Micro80C - 80% pure industrial product,
- ii) UHPF - a 99.9992% product for advanced industrial use, cathode conductivity enhance and nuclear moderator, and
- iii) USPG and CPSG, 99.99% pure carbon products for use in Li-ion anodes for EVs. The PFS values USPG at \$2,500 pt and CSPG at \$8,000 pt.
- iv)

Staged capital costs for incremental product lines

The first stage, to produce beneficiated industrial products, has an estimated capex of US\$62m for 50,000 tpa capacity. Adding a thermal reactor will cost another US\$97m for 6,000 tpa of product. Another two thermal reactors would cost an incremental US\$97m, and a spheronisation and coating facility would add another US\$88m. Thus cumulative capex would be US\$344m for a NPV of US\$514m.

Strong economic advantages

The projects have a number of key advantages over competing projects. Firstly it is very high grade at 30% TGC. Compared with an orebody with a 5% grade, such as one in South Australia, a producer would have to mine 6x as much ore for the same amount of carbon. Secondly, the very low waste:ore ratio of 0.2: means further cost saving in material movements. Thirdly, power costs of only US\$0.04¢/kWh are wonderfully low. Add the lower labour costs in Kazakhstan and the project offers many advantages.

Share Price Performance and Funding

The share price performed reasonable well after listing in 2022, hanging around the IPO price of 20¢ for some time, but it succumbed to the bear market in June 2024. Over recent months previously escrowed shares have been dumped in the market, overpowering any good news along the way. The net result was a low 7.1¢ in September, but since then the downtrend has been breached and the price has recovered to 10¢.

It is noteworthy that Saratogan has received the imprimatur of the London-based European Reconstruction and Development Bank. After 18 months of DD, in August the Bank agreed to invest \$5m at 16¢ a share, in two tranches subject to government approvals.

The Bottom Line

Sarytogan has an excellent resource and a well thought out business plan, but it would be a mistake to say it is simple ... or inexpensive in terms of capital. Nonetheless, we have been impressed with how much progress it has made in the last two years.

It is starting off with lower cost industrial graphite products, building up to the more specialist higher value products in time. Thus it is more than a prospective graphite producer. It is aiming to be a specialist downstream supplier of premium graphite products. Essentially it is planning for a specialist graphite processing complex for high quality products. The PFS study needs to be followed up with more detailed costing and information on business partners and funding possibilities.

The share price will respond to news flow and general market sentiments. Without a crystal ball it is difficult to

make predictions, but we see considerable merit in the company at present, at these low share prices.

Agua going down the smart capex route

While the Santa Barbara Gold Project is very advanced on the path to gold production, the Tres Estrades Phosphate Project in Brazil is starting to show some real legs. After many years of exploration under previous management the Company was able to announce very expensive phosphate reserves, but it lost momentum on the path to development when NGOs objected to the environmental approvals. That delayed the project by three years until the case was dismissed by the Federal Trial Court last October. That delay almost sent the company broke but it is a whole new ball game now with new management and funding.

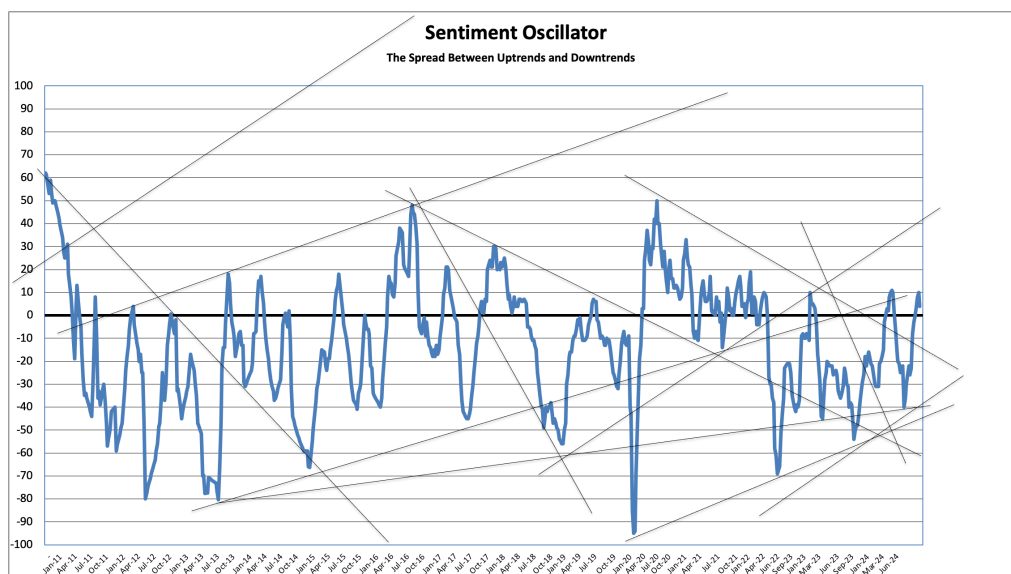
We are seeing the benefits of lateral thinking management with the announcement of a deal to utilise an existing treatment plant within trucking distance of the phosphate orebodies. Why spend \$25m on a brand new plant, and take two years to finance and construct it, when there are plenty of regional processing facilities that could be used? Hence the release last week.

For less than \$2m, Agua has the opportunity to lease a facility for 10 + 10 years, with capex of less than \$2m up front. This production line is surplus to the needs of DB, a family-owned producer of agricultural soil enhancers for more than 100 years. There are obvious benefits in teaming up with such an established team that offers operational support and the availability of a regional sales force that is eager to market the Agua phosphate product.

Sure the starting production rate will be 100,000 tpa, rather than the 300,000 tpa capacity described in the BFS of March 2023, but maybe it is prudent to start small, achieve market penetration from the local buyers, and grow from there. The production facility has enough space to be able to add another drying unit to lift capacity to 200-300,000 tpa within six months of pushing the button. The cost of such an expansion would be less than \$3m. That is a lot smarter than going for a brand new, greenfields development that would now cost close to \$30m.

The leasing deal is subject to formalisation in a binding contract form, but no-one is expecting any problems. Lawyers just like to take their time (as they are paid by the hour).

Disclosure: Interests associated with the author own shares and in Agua and the author is the Executive Chairman.



Sentiment Oscillator: Sentiment softened over the week. There were 36% (41%) of stocks in uptrend and 32% (31%) 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	testing ST downtrend	
Metals and Mining	XMM	pullback	
Energy	XEJ	strong rally	
Information Technology	XIJ	new high	
Stocks	Code	Trend Comment (updated comments in bold)	Main Interest
Agua Resources	AGR	consolidating at highs	phosphate, gold
Alkane Resources	ALK	breached downtrend	gold
Alicanto Minerals	AQI	strongly higher	base metals, silver, gold
Alligator Energy	AGE	breached steepest downtrend	uranium
Almonty Industries	All	rising	tungsten
Alpha HPA	A4N	rising again	HPA
Altech Chemical	ATC	rising	HPA, anodes
Alto Metals	AME	new high	gold
American Rare Earths	ARR	sideways breach of downtrend	rare earths
Anax Metals	ANX	new low after placement	copper
Andean Silver	ASL	new highs	silver
Anteotech	ADO	spike higher	silicon anodes, biotech
Arafura Resources	ARU	secondary downtrend in play	rare earths
Ardea Resources	ARL	down	nickel

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Arizona Lithium	AZL		sideways through downtrend	lithium
Astral Resources	AAR		new high	gold
Auric Mining	AWJ		rising	gold
Averina	AEV		hugging downtrend line after initial breakout	phosphate
Aurora Energy Metals	1AE		back to lows	uranium
Aurelia Metals	AMI		rising	copper + base metals
Australian Gold and Copper	AGC		weaker	base metals, silver, gold
Australian Rare Earths	AR3		surge then heavy pullback	rare earths
Australian Strategic Materials	ASM		new uptrend breached	rare earths
BHP	BHP		secondary downtrend in play	diversified, iron ore
Barton Gold	BGD		gently higher	gold exploration
Beach Energy	BPT		new low	oil and gas
Bellevue Gold	BGL		recovering	gold
Besra Gold	BEZ		still down	gold
Black Cat Syndicate	BC8		slump on \$80m placement at 52c	gold
Boab Metals	BML		rising	silver/lead
Brazil Critical Minerals	BCM		new low - two tranche plus 1 for 3	rare earths
Brazilian Rare Earths	BRE		breached downtrend	rare earths
Brightstar Resources	BTR		higher	gold
Caravel Minerals	CVV		sideways	copper
Carnaby Resources	CNB		breached downtrend	copper
Castile Resources	CST		gently higher	gold/copper/cobalt
Catalyst Metals	CYL		surge to new high	gold
Cazaly Resources	CAZ		breached new downtrend	rare earths
Celsius Resources	CLA		sideways	copper
Challenger Gold	CEL		hugging uptrend line	gold
Cobalt Blue	COB		breached downtrend	cobalt
Critica. (was Venture)	CRI		sideways	tin
Cyprium Metals	CYM		down again	copper
Emerald Resources	EMR		rising, new high	gold
Empire Energy	EEG		breached uptrend	gas
EQ Resources	EQR		testing uptrend	tungsten
Evolution Energy	EV1		testing uptrend	graphite
Evolution Mining	EVN		rising	gold
Felix Gold	FXG		breaching steps uptrend	gold exploration, antimony
First Graphene	FGR		down	graphene
Fortescue Metals	FMG		rally run out of steam	iron ore
Genesis Minerals	GMD		rising	gold
Globe Metals and Mining	GBE		down	niobium
Gold 50	G50		breached downtrend	gold exploration + gallium
Great Boulder Resources	GBR		new low	gold exploration
Group 6 Metals	G6M		suspended	tungsten
Hamelin Gold	HMG		breached downtrend	gold exploration
Hastings Technology Metals	HAS		back in downtrend	rare earths

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Heavy Minerals	HVY		testing brief, sharp uptrend	garnet
Hillgrove Resources	HGO		testing downtrend	copper
Iltani Resources	ILT		pullback	antimony
Iluka Resources	ILU		breached uptrend	mineral sands
ioneer (was Global Geoscience)	INR		rising	lithium
Ionic Rare Earths	IXR		new low	rare earths
Jindalee Lithium	JLL		new low	lithium
Jupiter Mines	JSM		new low	manganese
Kaiser Reef	KAU		improving	gold
Kalina Power	KPO		breaching steep uptrend	carbon sequestration
Krakatoa Resources	KTA		back to lows	rare earths
Larvotto Resources	LRV		steep rise	gold, antimony
Lindian Resources	LIN		sideways at lows	rare earths + bauxite
Li-S Energy	LIS		spiked higher	Lithium sulphur battery technology
LCL Resources	LCL		sideways at the bottom	gold/nickel exploration
Lotus Resources	LOT		breached downtrend, rising gently	uranium
Lucapa Diamond	LOM		collapsing due to institution dumping shares	diamonds
Lunnon Metals	LM8		steep rise	nickel
Lynas Corp.	LYC		rising	rare earths
Marmota	MEU		testing downtrend	gold/uranium exploration
Mayur Resources	MRL		stronger	renewables, cement
Meeka Gold	MEK		uptrend	gold
MetalsX	MLX		rising	tin, nickel
Meteoric Resources	MEI		recovering	rare earths
Metro Mining	MMI		breached downtrend	bauxite
Midas Minerals	MM1		pullback	lithium
Nagambie Resources	NAG		returning to downtrend	gold, antimony
Neometals	NMT		breached uptrend	lithium
Newfield Resources	NWF		rallying	diamonds
Nexgen Energy	NXG		breached downtrend	uranium
Northern Star Res.	NST		rising again	gold
Nova Minerals	NVA		surged higher	gold exploration
Novo Resources	NVO		sideways through downtrend	gold exploration
Pacific Gold	PGO		breached downtrend	gold exploration
Paladin Energy	PDN		crunched down	uranium
Pantoro	PNR		rising again	gold
Patriot Battery Metals	PMT		collapse to a new low	lithium
Peninsula Energy	PEN		new low	uranium
Perseus Mining	PRU		correcting lower	gold
Provaris Energy	PV1		new low	hydrogen
QMines	QML		breached uptrend	copper
Queensland Pacific Metals	QPM		rising	nickel/cobalt/HPA
RareX	REE		sideways at the bottom of a downtrend	phosphate, rare earths
Regis Resources	RRL		new uptrend	gold

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Regergen	RLT		surge on production news	gas, helium
Richmond Vanadium	RVT		sideways	vanadium
RIO	RIO		pullback	diversified, iron ore
RTG Mining	RTG		down	copper
Rumble Resources	RTR		slump on placement	zinc exploration
S2 Resources	S2R		down	gold exploration
Sandfire Resources	SFR		rising again - new high	copper
Santos	STO		down	oil/gas
Sarytogan Graphite	SGA		testing downtrend	graphite
Siren Gold	SNG		spike and fall on corporate bid	gold exploration
Southern Cross Gold	SXG		breaching uptrend	gold exploration
Southern Palladium	SPD		spiked higher	PGMs
Stanmore Coal	SMR		risen to meet resistance line	coal
St George Mining	SGQ		down	rare earths, niobium
Stellar Resources	SRZ		rising again	tin
Summit Resources	SUM		down	niobium, rare earths
Sun Silver	SS1		breached uptrend	silver
Suvo Strategic Minerals	SUV		sideways through uptrend	kaolin
Talga Resources	TLG		back to downtrend line	graphite
Tamboran Resources	TBN		down	gas
Terra Uranium	T92		down	uranium
Theta Gold Mines	TGM		rising again	gold
Toro Energy	TOE		breached downtrend	uranium
Torque Metals	TOR		back to lows	gold exploration + lithium
Vanadium Resources	VR8		back to lows	vanadium
Vintage Energy	VEN		new low	gas
Vertex Minerals	VTX		steeply higher	gold
Walkabout Resources	WKT		sideways	graphite
Warriedar Resources	WA8		down	gold exploration
West Cobar	WC1		new low	rare earth + lithium
Westgold Resources	WGX		spiked higher	gold
West Wits Mining	WWI		sideways	gold
Whitehaven Coal	WHC		strong rally	coal
Totals	36%	49	Uptrend	
	32%	43	Downtrend	
		135	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	25	18.5%	
Rare Earths	16	11.9%	
Gold Exploration	14	10.4%	
Copper	11	8.1%	
Uranium	9	6.7%	
Lithium	6	4.4%	
Oil/Gas/Hydrogen	7	5.2%	
Graphite/graphene	5	3.7%	
Iron Ore/Manganese	4	3.0%	
Nickel	3	2.2%	
HPA/Kaolin	3	2.2%	
Tungsten	3	2.2%	
Tin	3	2.2%	
Silver	3	2.2%	
Antimony	4	3.0%	
Potash/Phosphate	2	1.5%	
Coal	2	1.5%	
Diamonds	2	1.5%	
Niobium	1	0.7%	
Vanadium	2	40.0%	
Zinc/Lead	1	0.7%	
PGMs	1	0.7%	
Mineral Sands	1	0.7%	
Bauxite	1	0.7%	
Cobalt	1	0.7%	
Other	5	3.7%	
Total	135		

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