Wednesday, April 5, 2017

HALLGARTEN & COMPANY

Portfolio Strategy

Christopher Ecclestone
cecclestone@hallgartenco.com

Model Mining Portfolio:

Cobaltmania

Performance Review – March 2017

Model Mining Portfolio

Cobaltmania

- ＋ **Most precious and base metals were in a holding pattern near their recent highs**
- ＋ **Cobalt has continued its stellar run as competition for scarce supplies looms**
- ＋ **Financings continue at a steady pace**
- ✘ **Upward momentum in most metals is lacking**
- ✘ **Many of the metals needing meaningful exploration work (e.g. Lithium) are receiving financings that are merely "maintenance" funding**
- ✘ **A difficult first few months for the Trump Administration has resulted in the infrastructure "surge" getting lost in the general din**

Collateral Advantages from the Cobalt Crunch

One does not usually expect a sober conference of traders and other players in the battery metals space to go all apocalyptic but that is what happened when the topic of Cobalt arose at the recent Argus Metals Week in London. As is well known the price for Cobalt has been on a tear, dragging along prices of Cobalt "stories" in its wake. While much of the move has been attributed to the Lithium ion battery dynamic we would note that long term underinvestment in the metal (particularly in development of primary mines) and the closure of Cu-Co mine capacity by Glencore during its late-2015 near-death experience also played a part.

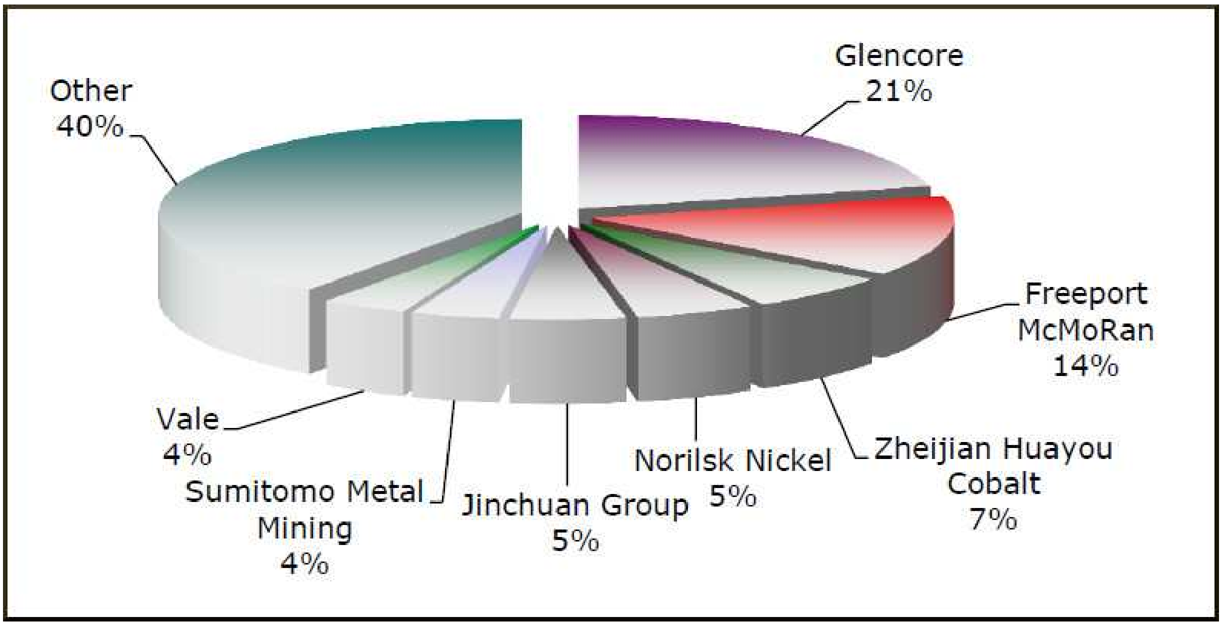
Lift-Off

The pace of change in the battery space has moved up a gear with the Cobalt crisis moving into centre stage and focusing minds on supply issues in the battery space, particularly as regards the "blue" metal. The Cobalt producers have annual output of around 100,000 tonnes. The price of Cobalt has soared (though still not back to pre-

2008 levels) and the chatter in markets has been of an imminent supply crunch in absolute terms that might precipitate rationing by price and possible switching to alternative technologies.

While opinions differed on just how steep the rise in prices might ultimately be we perceived an even bigger threat in that there might be an absolute shortage of Cobalt, transitory or longer, in which case end-users (and by that we mean beyond just the battery space) may not be able to secure Cobalt for "love nor money" as they say in the classics. One might compare it almost to like a situation of war-time shortage when "nylons" or suchlike might have totally disappeared. Clearly in a rationing scenario there will not be governments (except maybe the DRC) in a position to ration supply and thus the advantaged parties will be those for whom the cobalt is only a tiny part of a high cost product (pharmaceuticals and electronics) while the most negatively impacted will be bulk users like paints and glass.

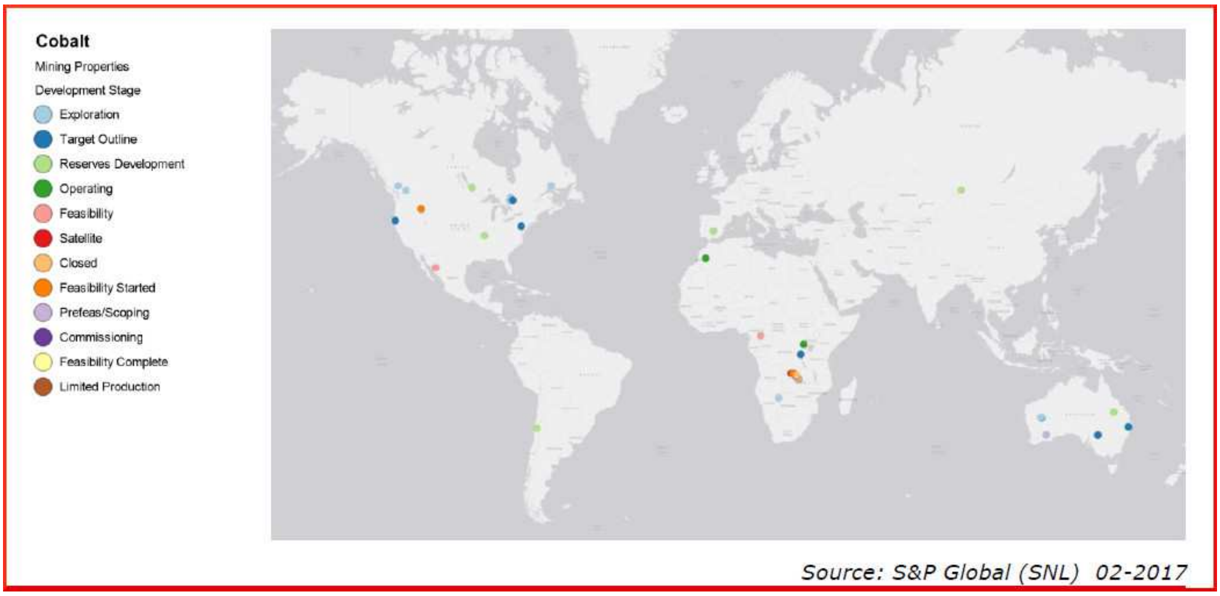
The problem is that while higher prices might produce elasticity in demand (depressing sales of some end products or prompting big price hikes or use of alternatives, where possible) the supply side is totally inelastic because of the lack of "turn-on-able" mines either in the primary or secondary category. Glencore is due, in 2018, to bring the Katanga mine in the DRC back on line after a US$430mn overhaul of its processing system. The operation has the potential to add as much 22,000 tonnes of cobalt. The chart below from Dorfman Anzaplan shows the current breakdown of global producers.



Beyond this there is no substantial pipeline. The long stalled primary mine project of eCobalt (formerly Formation Metals) in Idaho is one of the most advanced towards construction but even then we are talking several years at the least before a sellable product might appear. That company at least (after a long drought) has been able to raise quite a large amount of money in recent months to regain momentum towards production.

There are a handful of other projects in the works (though Dorfner Anzaplan claims that there are 46 active projects now, up from 10 at the same time last year). How many of these are credible is hard to gauge but we know some to be severely lacking in credibility both due to their very nature and also by the people involved with them.

The map below from SNL Global shows the spread of these theoretical projects in the first half of 2017. Geographically the diversification looks good, at least.



So with a growing number of projects the picture for filling the production gap looks auspicious, but in fact it is not. Even if one third of these projects were "good", most are still very formative indeed. If they went from 10 to 46 in number over 12 months then that signifies most have had little to no work done on them and we would also note that the real price liftoff was only in recent months so the bulk of these projects are of significantly less duration than six months.

That then in its own way confuses the market. It's like a horse race where virtually none of the runners have seen a racetrack before. There is no "form". That then means that punters do not know who to back and understandably place very small bets and spread them around. This does NOT make for a great financing environment. We have already seen in the Lithium space that few have put their money where their mouth is. Financings (except for a few choice or advanced names) have been little more than "maintenance" financings that pay to keep the lights on and fund the IR budget. Raises of sub-$500,000 do not pay for meaningful drill campaigns that lead to a resource. We are seeing the same thing happen in Cobalt as occurred in Lithium. That stretches out the timeline for the various staging posts on the way to production. Years to get a resource, then delays the PEA, then the DFS and BFS years later. Production then becomes little more than a twinkle in the eye. This solves no problem at all and will drive end-users insane with frustration at the dysfunctional equity markets in the mining space.

Stampede

The current rash of interest in the Cobalt space is all light and no heat. The situation now seems rather binary with the options being a slump when Glencore production feeds right through into the market OR one in which demand keeps rising, little new supply arrives and a crunch develops. Glencore now is interested in orderly markets and has benefitted massively by enforcing discipline (mainly upon itself) in 2015 that then resulted in the rallies in Zinc and Copper than have put it back on a strong footing. The delayed effect of the 2015 cuts has now washed into the Cobalt space with soaring prices. Glencore are not going to want to damage this new Goldilocks scenario that they have engineered. Even better for them the lack of any up-and-coming producers means that they can now effectively control the market and pricing by being the swing producer for at least another half decade. Primary mines are likely to be smallish and not make a dent in supply even should they get to production. Megamines, particularly in the NiCo space, like Ambatovy are seen as dinosaurs and not likely to spur a rash of lookalikes for a very long time indeed.

This augurs a situation in which end-users end up like frogs in the steadily hotter water that only realise that it's boiling when they are well and truly cooked. We have had a mini-spike that has doubled the price to something like the levels that reigned pre-2008. There were speakers at the Argus event who mouthed the words "$65 per lb" and it did not rattle the teacups. Even at such a high historical level there is little that such a price could engender in new production, particularly if Glencore just sit back and decide to enjoy the situation, eking out supplies into the market.

Portfolio Changes

There were no portfolio changes during the month.

The Portfolio Move

The Model Mining Portfolio ended March at $4.291mn down slightly from the USD$4.449mn at the end of February. Net cash remained unchanged at $938,000.

Elcora – Climbing the Ranks

We have been decidedly unimpressed by the graphite sector since its emergence on the scene. Only a very small fraction of the players have seemed real and much of the science has bordered on the voodoo. Despite that we have taken a fancy to two players, Elcora and Talga, the first because it was first into production of the current batch, and Talga because it seemed more serious than most in getting into production. We did for a long while favour Flinders Resources (now restyled as Leading Edge) until it fell at the final turn with its Swedish project. Interesting all three are in locations that are not the promoter hotspots (i.e. Elcora in Sri Lanka and the other two in Sweden).

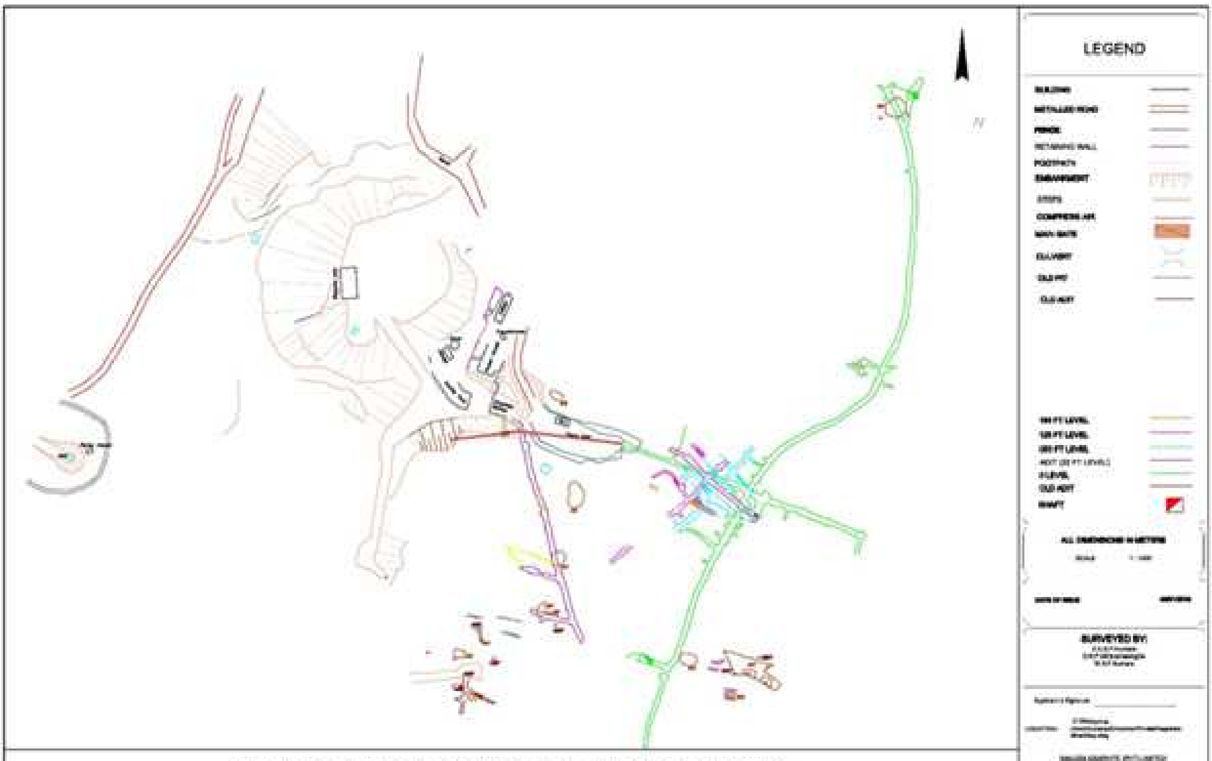
It's worth looking again at Elcora as it is on the verge of declaring mining to be "commercial" and ramping up to something like the true potential of its mine. Historically production (between 1974 and

1985) had been as high as 18,000 tpa, but methods were primitive and dangerous and on-site processing facilities to produce a higher-value product were lacking.

Since Elcora became involved with the Ragedara mine (via the so-called Sakura JV) the focus has been on supporting the underground exploration and construction work, including construction of emergency exits from the underground workings, and the mitigation of safety hazards such as low hanging ceilings and inadequate ventilation in some areas, and establishing proper safe locations within the workings.

In November 2015 the completion of the construction of its Ragedara Graphite Processing Plant was announced and that it had started processing the stockpiled graphite at site, of which there was some 250-300 tonnes, with an average grade of 80-95%.

The map below shows the site.



SURFACE & UNDERGROUND MAP - RAGEDARA MINES

During 2016 Elcora appointed Klaus Leiders as the General Manager for the Ragedara mine. He is a German national and a mining engineer and brings extensive experience to the Sakura Joint Venture. He oversees all facets of the operation, including the processing plant and the mine. Another key role will be to interface with customers like ThyssenKrupp.

In early October 2016 Elcora announced the first shipment of processed graphite extracted from its Ragedara mine. The shipment was distributed by ThyssenKrupp Metallurgical Products.

The mine is currently operating on one shift per day producing one to two tonnes of high quality graphite per shift aggregating approximately 20 tonnes per month at average at a cost of $136 per tonne of graphite.

A key part of the restart has been the construction of the Ragedara Graphite Processing Mill as there had hitherto been no modern processing facilities for the mine's output. Elcora has custom designed its processing technology targeting the high-grade graphite at Ragedara. This technology minimizes the use of chemicals and result in no environmentally damaging products, by products or waste, which makes the plant very environmentally friendly and safe.

Below can be seen the mixing tanks at the Ragedara processing plant.

The project involved the construction of a new housing for the plant. Long-order equipment was being modified to hydraulic drives allowing Elcora greater operational flexibility, including variable speed and torque on the equipment. Another task was the fabrication of custom designed graphite flotation vessels. On top of this the company needed to hire and train process engineers.

The now complete facility performs four refining activities: grinding, flotation, dewatering, and product load-out. The fully refined graphite has a purity of over 99% and size range between 5 microns to 1 millimeter.

A team of seven fulltime employees are currently working at the mill. The mill can operate both in batch mode or process a continuous flow of material in a closed-circuit mode. The current processing capacity is 2,500 tonnes per year; with final product purity reaching over 99%. This capacity can be increased to 10,000 tonnes without significant further investment once the mining production increases.

The team defined the targeted graphite particle size distributions and finalized the designs for various stages of the process circuit accordingly. As part of the plan, Elcora is capable of producing a particle size distribution suitable for lithium ion battery applications.

The Sakura JV expects to ship 5,000 tonnes of graphite this year at prices which will range from $1,500 to $2,500 per tonne. The second module with a capacity of 2,500 tonnes per year will cost less than $1mn to build and Elcora has sufficient cash on hand to fund the development of this plant.

In our worldview, production trumps all (pardon the bad pun) and Elcora has dashed ahead of the pack with its Ragedara mine. Now it is set upon getting into the graphite anode business for the Lithium Ion battery supply chain with a plant under consideration for Halifax. Despite being small the company has shown itself to me considerably more nimble than many of its larger brethren.

Talga in Passing

This company had a substantial share price uplift in the last days of the month when it announced that it had signed a Joint Development Agreement with Chemetall, a global business unit of BASF Coatings Division, to co-develop and commercialise graphene-enhanced metal surface coatings.

This is yet again another sign of a graphite “miner” staking out space in the mid-stream with the logic seemingly being to build one’s market/demand before building one’s mine.,

Parting Shot

We have been on the verge of discarding our Westgold holding, and even our Metals X, in recent months due to what we deemed conduct unbecoming by the company towards its US shareholders during the demerger. If a company does not want US shareholders then it should not market to them.

We held back from selling because the demerger caused a big dumping of Westgold stock that caused an unacceptable price retreat (since remedied) and also because Metals X (despite its faults like the Quixotic, virtually shambolic Aditya Birla Minerals “bid) also represented about the best available point of access to a tin miner.

Then in recent days the aforementioned Cobalt boom washed up on Metals X shore with them drawing attention to their long dormant Wingellina Nickel project in Western Australia and the fact that it “has cobalt” with a target of 3,000 tonnes per annum (not to mention that its resource of 150,000 tonnes represents one and a half year’s current global production).

This prompted us to revisit the project. We note it refers to its 2008 Feasibility Study. Even shameless Vancouver promoters do not refer to Feasibility Studies that old (except maybe in fine print) and yet Metals X have it in their corporate presentation and claim it is “production ready”. In our book, 2008 calculations in the mining industry just do not cut it and should not even be mentioned as a major selling point. The project also falls through the cracks with an AU$2.5bn CapEx (in 2008 dollars?) and production costs in USD (also 2008?) we were left confused…. Back to the drawing board methinks…

Mining Model Portfolio as at: 1-Apr-17

	Security	Initiated	Currency	Price Avg.	Price Current	Portfolio Weighting	Increase in Value	Target
	Long Equities							
Various Large/Mid-Cap	Capstone Mining (CS.to)	5/29/2009	CAD	2.32	1.3	1.40%	-44.00%	$2.00
	NevSun (NSU)	3/23/2012	CAD	3.45	3.42	4.00%	-0.90%	$5.00
	Sherritt International (S.to)	7/11/2013	CAD	1.78	0.94	3.30%	-47.20%	$2.50
	Palladium ETF (PALL)	10/16/2014	USD	72.08	76.43	4.70%	6.00%	$74.00
	Metals X (MLX.ax)	29/5/2014	AUD	0.98	0.78	2.50%	-20.30%	$1.00
Uranium	Uranium Participation Corp (U.to)	10/20/2010	CAD	7.01	4.06	2.40%	-42.10%	$6.00
	Western Uranium (WUC.cx)	7/5/2016	CAD	2.25	1.79	2.50%	-20.40%	$4.80
	GoviEx (GXU.cx)	6/29/2015	CAD	0.08	0.17	4.70%	106.90%	$0.50
Zinc/Lead Plays	Zinc ETF (Zinc.L)	1/15/2010	USD	7.04	8.17	2.50%	16.10%	£9.00
	Canadian Zinc (CZN.to)	12/9/2011	CAD	0.82	0.22	0.60%	-73.20%	$0.70
	Ascendant Resources (ASND.v)	10/31/2016	CAD	0.48	0.68	3.20%	43.20%	$1.70
	Nyrstar (NYR:BR)	9/28/2009	Euros	65.1	16.48	11.20%	-74.70%	€ 11.00
	Southern Silver Exploration (SSV.v)	8/25/2016	CAD	0.49	0.485	2.80%	-1.00%	$0.94
Gold Producers	NewGold (NGD.to)	5/31/2013	CAD	7.05	3.97	2.80%	-43.70%	$8.00
	Patagonia Gold (PGD.L)	10/2/2013	GBP	3.6	1.73	1.30%	-51.90%	£4.00
	Komet Resources (KMT.v)	11/25/2016	CAD	0.47	0.41	1.90%	-12.80%	$1.28
	Para Resources (PBR.v)	2/17/2017	CAD	0.23	0.22	2.50%	-4.30%	$0.58
	Westgold (WGX.ax)	12/6/2016	AUD	2.01	2.36	4.90%	17.40%	$2.40
	Eldorado Gold (EGO)	6/21/2012	USD	9.12	4.55	4.20%	-50.10%	$7.00
	Teranga Gold (TGZ.to)	6/21/2012	CAD	1.57	0.85	2.40%	-45.90%	$1.50
Copper Producer	Coro Mining (COP.to)	2/23/2015	CAD	0.03	0.15	3.50%	400.00%	$0.30
	Royal Nickel (RNX.to)	11/17/2016	CAD	0.33	0.3	2.10%	-9.10%	$0.60
Processor	IBC Advanced Alloys (IB.v)	4/29/2016	CAD	0.3	0.4	0.90%	33.30%	$1.40
Driller	Cabo Drilling (CBE.v)	9/28/2016	CAD	0.025	0.01	0.50%	-60.00%	$0.08
Tungsten Producer	Almonty Industries (AII.v)	7/31/2015	CAD	0.36	0.28	3.20%	-22.70%	$1.00
Copper Explorer	Asiamet Resources (ARS.v)	4/28/2016	CAD	0.05	0	0.00%	-100.00%	$0.24
Nickel Explorer	Sama Resources (SME.V)	23/2/2015	CAD	0.16	0.15	2.80%	-6.30%	$0.30
Lithium	Neometals (NMT.ax)	7/31/2014	AUD	0.04	0.31	3.60%	737.80%	$0.60
	Galaxy Mining (GXY.ax)	6/28/2016	AUD	0.35	0.46	2.30%	33.10%	$0.70
Scandium Explorer	Scandium International (SCY.to)	8/23/2016	CAD	0.14	0.38	5.30%	171.40%	$1.00
Graphite Producer	Elcora Resources (ERA.v)	29/5/2014	CAD	0.2	0.32	3.70%	60.00%	$0.64
Graphite Developer	Talga Resources (TLG.ax)	8/25/2016	AUD	0.27	0.5	5.90%	88.70%	$0.42
REE Explorer	Northern Minerals (NTU.ax)	6/9/2011	AUD	0.73	0.12	0.40%	-83.60%	$0.38
	NET CASH					938,572		
	Short Equities							
						Weighting		
Shorts	Bacanora (BCN.v)	12/4/2015	CAD	1.53	1.32	54.50%	13.70%	$0.80
	Galane Gold (GG.v)	4/28/2016	CAD	0.06	0.06	45.50%	0.00%	$0.03

Current Cash Position	**938,572**
Current Liability on Shorts Not Covered	**109,173**
Net Cash	**1,047,745**
Current Value of Bonds	**0**
Current Value of Long Equities	**3,244,122**
TOTAL VALUE OF PORTFOLIO	**4,291,867**

Important disclosures

I, Christopher Ecclestone, hereby certify that the views expressed in this research report accurately reflect my personal views about the subject securities and issuers. I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or view expressed in this research report.

Hallgarten's Equity Research rating system consists of LONG, SHORT and NEUTRAL recommendations. LONG suggests capital appreciation to our target price during the next twelve months, while SHORT suggests capital depreciation to our target price during the next twelve months. NEUTRAL denotes a stock that is not likely to provide outstanding performance in either direction during the next twelve months, or it is a stock that we do not wish to place a rating on at the present time. Information contained herein is based on sources that we believe to be reliable, but we do not guarantee their accuracy. Prices and opinions concerning the composition of market sectors included in this report reflect the judgments of this date and are subject to change without notice. This report is for information purposes only and is not intended as an offer to sell or as a solicitation to buy securities.

Hallgarten & Company or persons associated do not own securities of the securities described herein and may not make purchases or sales within one month, before or after, the publication of this report. Hallgarten policy does not permit any analyst to own shares in any company that he/she covers. Additional information is available upon request.

Hallgarten & Company acts as a strategic consultant to Elcora Advanced Materials and as such is compensated for those services, but does not hold any stock in the company, nor has the right to hold any stock in the future.

Web access at:

Research: www.hallgartenco.com