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HALLGARTEN & COMPANY

Portfolio Strategy

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Model Resources Portfolio:

Prizes of War?

Performance Review – April 2022

Model Resources Portfolio

Prizes of War?

- + **Gold and silver held up despite the generalized move around the world towards higher interest rates**
- + **Lithium holds at high levels due to a near panic sentiment sweeping the batteries metals space with regard to securing supplies**
- + **Zinc crossed the key $2 per lb threshold in mid-April then slid backwards**
- + **Antimony has been hitting new highs and currently sits at over $14,700 per tonne on the supposedly temporary closure of the 500 year old Twinkling Star mine in China**
- + **Oil sustained its rally**
- ✘ **War and inflation (and the concomitant higher interest rates) are starting to impact on global growth**
- ✘ **Chinese exceptionalism now means that it suffering the pandemic's worst effects after most other countries have started to recover**
- ✘ **Economic fears are now impacting major base metals**

Prizes of War

It can be said that the mining sector is "having a good war". The prices of any metal with an industrial use is up, or sustained, while even gold and silver have been able to hold their ground in the face of interest rate rises. In theory the first-line "winners" from the Russian invasion should be platinum and palladium but the former is up a mere $20 per oz from where it was three months. Price surges should be made of sterner stuff. Palladium, a tighter supply story, is up 10%. Tis scarcely a moment to break out the champagne as the few Western producers of this metal.

Nickel had its infamous "moment" when the LME allowed Chinese speculators to have their way (of which more anon). Copper has not done much of note while Zinc has powered upwards with its own dynamics that have little to do with the conflict.

Overlaid on the war "economy" and the higher interest rates that are already impacting matters, is the immense own goal that China has administered to its own economy through the *induced coma* of perpetual lockdowns in their vain bid to resist accepting Western vaccines to ameliorate the virus which, frankly, they let lose upon the world in the first place. This is a least-expected long tail to the virus. From crowing about having dodged a bullet they have now taken one squarely in the forehead. Whatever the variant to the fixed-in-stone growth rate of ~6% that they usually tout, it will be surprising if the real growth is even positive this year. This must impact metals demand.

Then we have the steady flow of evidence that China is losing its key role as a producer (as distinct from processor) in elements such as Rare Earths, Antimony & Tin. Most of the antimony capacity in China has been shuttered in recent weeks due to lack of concentrate. These issues are driving the prices specialty metals higher, over and beyond any “war premium” which is frankly a stretch in specialty metals anyway (beyond Titanium, where Russia is a major supplier).

In the final wash, the war will probably do more damage to metals demand than it provides in the form of a perverse fillip to prices in the initial reaction. The fragile global growth picture in the wake of the pandemic at first looked like it would rebound but now a triple headwind of the war, rising inflation/rising rates and finally China self-harming makes it difficult to see how recession on a global scale can be avoided.

In this context the main thing metals have going for them is that, in so many categories, the decades-long underinvestment has started to impact upon the supply picture.

Fraser Institute Hitting the Spot and Missing the Target

By its very nature the much-awaited Fraser Institute mining survey is backward looking. This was even more the case this year as it came out last year in late-February and this year in mid-April. We can only presume that this was due to correspondents (mainly mining executives) being too busy fanning the flames of the mining boom.

We are not sure if we would call our response to the rating afforded Spain to be disappointment or bemusement, though we suspect more the latter. Did they ask Atalaya (probably not, as listed in London), or did they ask Almonty (probably not as management is in Paris), did they ask Elementos (probably not, as listed in Australia or did they ask Nex-listed Strategic Metals Europe (probably not, as management is in Madrid). We suspect the airwaves on Spain are dominated by the booming retro-justifications of a certain peeved Uranium developer that did everything wrong in the book and then sought to blame Spain for their set-backs. Otherwise on the ground Spain is booming as a mining location…. Sigh…

Western Australia came out on top and we have heard no complaints of any substance on doing business there but…. as the WA government website says “The State Government has implemented a ‘no uranium’ condition on future mining leases. Four uranium projects that received State Ministerial approval under the former Liberal National Government will be allowed to progress”. Not much difference between this policy and the problems encountered in Spain by a certain company, but hey, ho…. Never let it be said that double standards on loving or not loving jurisdictions are unknown in the mining community.

Which brings us to Chile….. this country suffered a slight setback in its ranking that is quite surprising because of its moderation. Chile is rapidly being seen in many circles as heading the same way as the DRC (used to be). Frankly the goalposts are clearer and move less in the DRC than in Chile these days. To say that Chile's fans are die hard is an understatement but they will die hard (in a ditch) if they don't smarten up on the threats that the new government is making there. However, let's not blame the new government as the previous government was busy putting stones in the road of the Lithium industry and Pascua Lama was a by-word for mistreatment of a major. Few companies have lost so much money on a project as Barrick with this one and yet Chile kept getting a free pass from mining opinion makers…

Now some of the Young Turks in the new government are rattling the sabres on nationalising the Lithium industry in the country.

Argentina

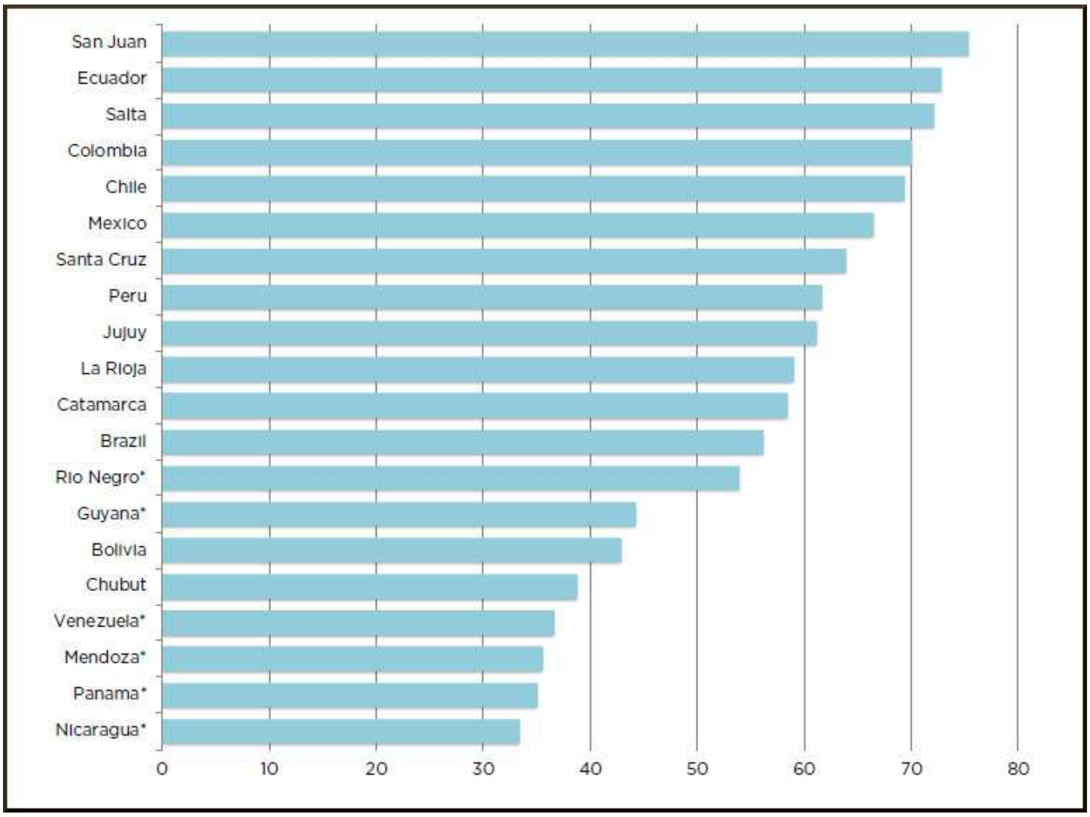
As we wrote recently Argentina is the new Saudi of Lithium and foreign investors despite their lingering fondness for Chile realise that there is little to be done West of the Andes as long as "Roadblocks R Us" is the Chilean government's policy on everything.

A glance at the rankings would make anyone think that this monumental return to favour is not happening. Why would investors/miners want to stampede into Argentina when Chile is still a favoured son? That there are virtually no stones on the road for Lithium in Argentina versus a whole lot of alternative agendas and interests in Chile is one of the best reasons. Moreover though, copper projects of size are burgeoning in Argentina, sustaining the long-ignored observation of the country's strong fans that the proliferation of large copper deposits should be replicated (geologically) on the eastern side of the Andes. So it has come to pass. Meanwhile gold and uranium exploration bubble along, and Argentina is one of the largest gold producers in South America.

The latest set of rankings are shown below:

	Score					Rank				
	2021	2020	2019	2018	2017	2021	2020	2019	2018	2017
Catamarca	58.39	65.49	63.93	68.39	53.91	48/84	44/77	44/76	37/83	67/91
Chubut	38.78	40.58	33.13	54.83	30.54	73/84	76/77	75/76	69/83	88/91
Jujuy	61.17	63.55	51.21	52.61	58.57	44/84	47/77	62/76	72/83	59/91
La Rioja	58.99	44.44	34.48	48.7	46.06	47/84	73/77	74/76	75/83	80/91
Mendoza	35.54	48.98	44.46	50.15	29.29	77/84	71/77	66/76	73/83	89/91
Rio Negro	53.92	54.79	44.76	**	**	55/84	64/77	65/76	**/**	**/**
Salta	72.05	74.69	67.19	54.09	62.51	27/84	23/77	36/76	70/83	45/91
San Juan	75.32	63.35	76.2	55.9	63.21	22/84	49/77	21/76	64/83	42/91
Santa Cruz	63.91	67.39	60.49	62.46	60.98	40/84	40/77	53/76	49/83	52/91

For us the most startling thing is the slippage in the ranking of Catamarca, which has been bending over backwards to get Lithium projects moving. Are the respondees to this survey not actually involved in matters to do with Argentine mining or more particularly matters in Catamarca? La Rioja on the same footing as Catamarca, methinks something is wrong with the methodology here. On top of this the scores in Salta and Jujuy are lower while foreign miners are literally stampeding into these jurisdictions. Below can be seen the Fraser Institute results for 2021 for Latin American and the Caribbean:



We might also note that what comes around goes around and the rapidly changing landscape includes number five ranked Chile getting a new government which is making ominous noises and number six ranked Mexico having passed legislation to nationalize Lithium "mines".

So at best the latest report is well out of date on developments, at worst it has people not involved in certain areas pontificating and getting equal, if not more, weight than people who actually know the foibles of Argentine provinces (not to mention Spain).

Portfolio Changes

We closed out our LONG in Teck during the month which had exceeded our target price (despite the target having been moved up). The company still had not taken the opportunity of the point in time to demerge its coal assets and finally bury the ghost the Fording that had haunted it so long, or capitalized on its high market cap to do a all-stock deal in base metals to restore its cred in the space.

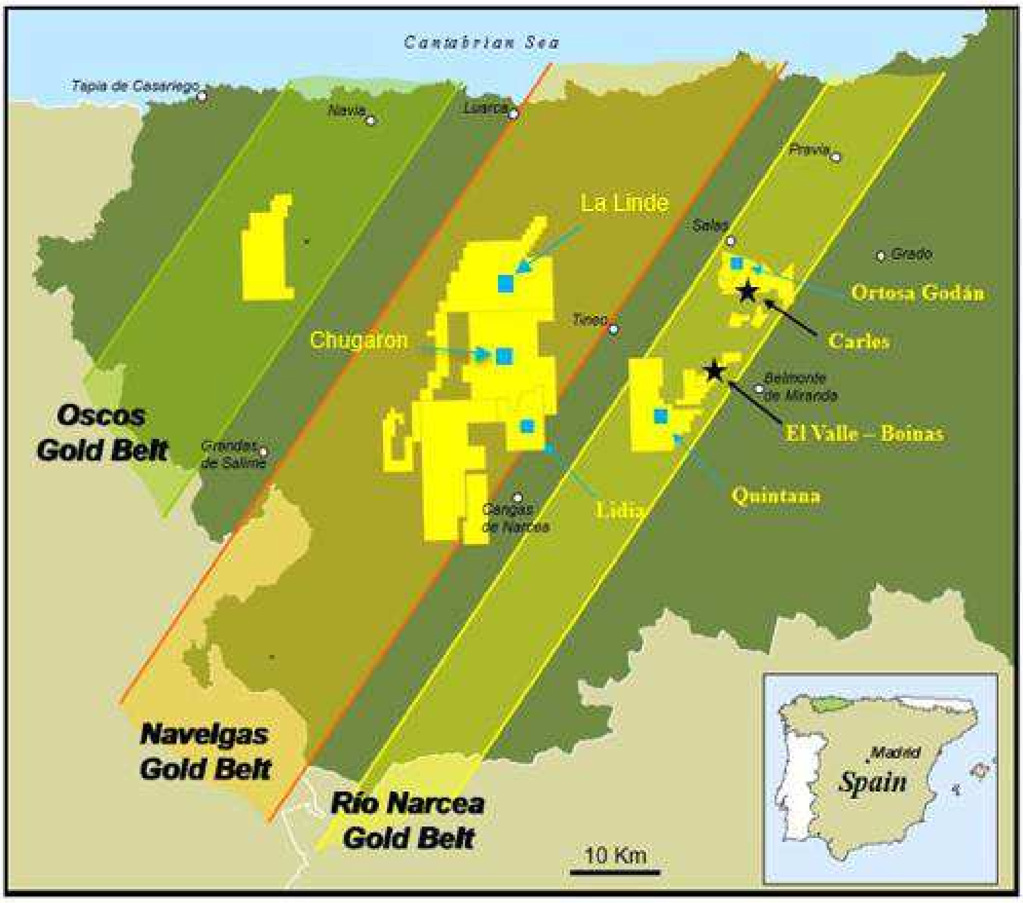
We added a LONG position in Orvana Minerals (ORV.to) which we discuss below. Looking at Verde Agritech, we suspect that its massive run-up represents a long-awaited reward for our enthusiasm but ultimately it has been taken to levels (probably prompted by the fertliser panic induced by the Russian invasion) to levels which make it too expensive. It is on the watch list now to be taken out of the portfolio.

Orvana Minerals (ORV.to, OTC:ORVMF) – Dancing to a Latin Beat

Strangely this company, that we have met several times, doesn't seem to feel Spain is as burdensome a jurisdiction as the Fraser Institute Survey's contributors would have us believe

We liked it at first encounter and then a second meeting prompted us to add it to the Model Resources Portfolio as it appeared to be exceptionally cheap. Its asset base consists of the producing mine in Spain, a recently past-producing mine in Bolivia and a large target in Argentina.

Firstly, there is the producing EVBC mine which Orvana acquired in September 2009 through its acquisition of Kinbauri Gold Corp. The EVBC Mine is located in the Rio Narcea Gold Belt of northern Spain and was previously mined from 1997 to 2006 by Rio Narcea Gold Mines. That company produced nearly one million ounces of gold and over 20,000 tonnes of copper prior to the closure of the mine.



The map above shows that the current producing area is a mere fraction of the territory that the company has at its disposal.

The following table sets forth the production from the EVBC Mines for the periods indicated together with guidance for the upcoming period.

OROVALLE	Low	High	Q1 2022 Actual
Gold oz Production	48,000	53,000	11,731
Copper 000's lbs Production	5,800	6,500	1,451
COC $/oz Au (by-product) *	1,050	1,150	1,140
AISC $/oz Au (by-product) *	1,550	1,700	1,446
Capital Expenditures ($)	22M	25M	2.8M

Not many companies with this much gold production have such a lowly market cap of only $45mn.

Bolivia – Turning the Corner

Despite what many may think there is a changing mood towards Bolivia. The drama of several years ago has seen a changing of the guard and Bolivia is almost respectable again. It certainly has realized that a favourable regime towards foreign miners can bring reactivation of interest. Someone recently mentioned Glencore's problems but we rebuffed with the response that if you bribed to get and asset why should you stake out the high ground against expropriation? Glencore is in a class of its own when it comes to sleaze.

Orvana's operations are located in the flatlands of Bolivia, near the Brazilian border. The Don Mario district has three main mineral deposits of which the largest, the Don Mario Lower Mineralized Zone, a low-cost gold mine, was depleted in the fourth quarter of fiscal 2009 after producing more than 420,000 ounces of gold. The second, the Las Tojas open-pit gold mine, was depleted in March 2011 after producing nearly 50,000 ounces of gold. The open-pit mine on the third deposit, the copper-gold-silver Upper Mineralized Zone, reached commercial production in January 2012 and was depleted in 2016.

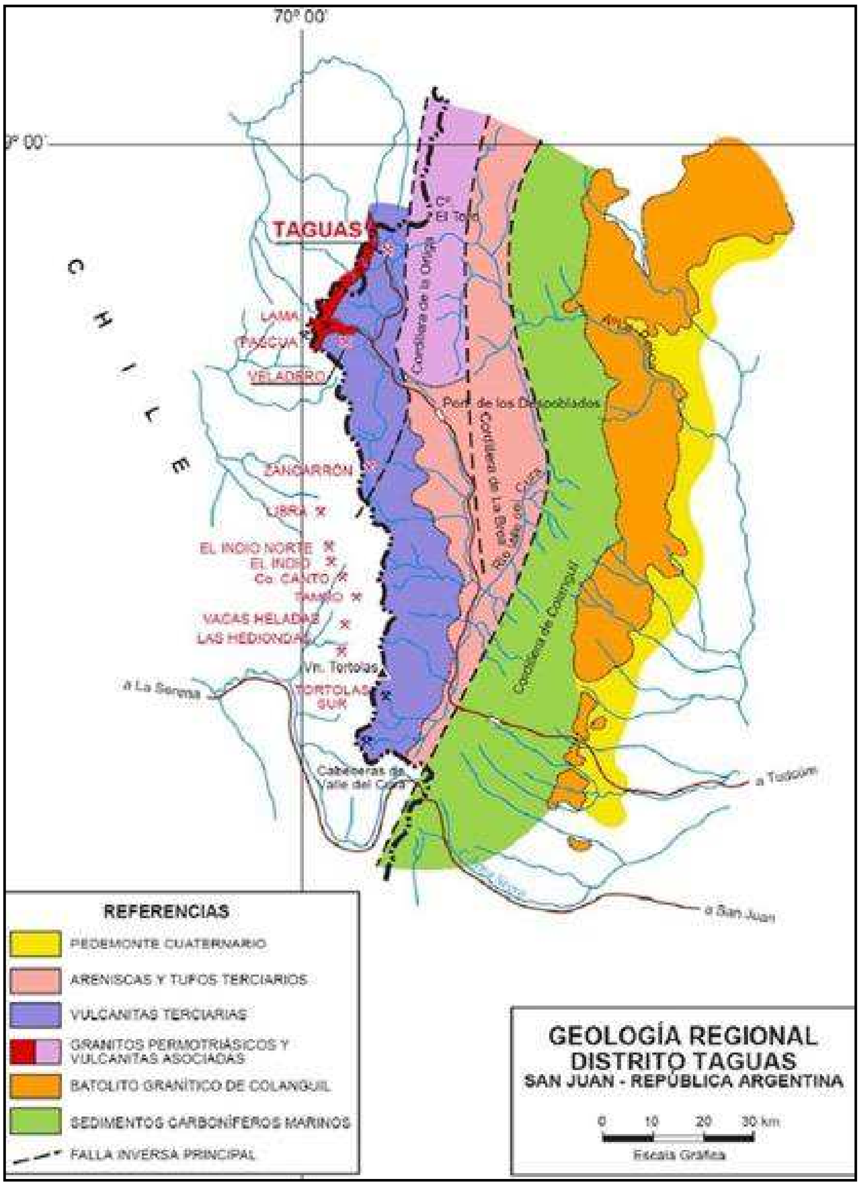
Since Don Mario Operation suspended mining in 2019, due to depleted resources and reserves in the deposits, the only current mineral resource estimates on the Don Mario Property are the Don Mario Mine tailings and oxide stockpiles. The company is currently looking to reprocess this residual material.

Argentina

The Taguas property consists of 15 individual claims/concessions 3,273.87 ha and is located in high

Andes of San Juan province, Argentina

The general vicinity is shown in the map at the right:



The mineralisation is a high-sulphidation epithermal gold-silver system, located in a highly prolific belt for major deposits with Barrick's Veladero Mine some 25 km N-NE of Taguas. Access to the site is via Tudcum (a road which also services Veladero).

Geologically Speaking

The Taguas project is host to a high-sulphidation epithermal gold-silver system hosted in altered tertiary age rhyolite volcanoclastic rocks. Supergene-oxidized gold-silver mineralization occurs on the south half of the Property. The oxide gold-silver mineralization consists of sub-vertical, northeast striking mineralized structures in an envelope of lower grade mineralization.

The high-grade zones consist of relatively continuous mineralization with gold grades ranging from 0.2 g/t Au to over 4 g/t Au and 10 g/t Ag to over 50 g/t Ag. Oxidation extends from surface to approximately 100m – 200m below surface. The present PEA refers only to this oxidized gold-silver mineralization occurring near surface in Cerros Taguas.

Nearly 56,600m of drilling has been carried out thus far on the property. Further work is being undertaken to enlarge the resource in Cerros Taguas & Campamento with infill drilling to upgrade the resource to Measured & Indicated status.

The current Mineral Resource (all in the Inferred category), dating from June 2021, is derived from five deposit areas, all in the southern half of the property:

Estimate of Inferred Mineral Resource for Cerro Taguas Oxides reported at 0.25 g/t AuEq Cut-off

COG	Tonnes	Grade			Contained Metal	
AuEq	(Mt)	Au (g/t)	Cu (%)	Ag (g/t)	Au Ounces (000's)	Cu Lbs (000's)
0.25	55.0	0.35	12.1	0.49	619	21,429

It used $1700 Au and $20 Ag for calculation of the pitshells constraining the resource.

The PEA

In December of 2021 a new Preliminary Economic Assessment (PEA) was published. This PEA refers only to the oxidized gold silver mineralization occurring near surface in Cerro Taguas and was prepared by Kappes , Cassiday and Associates.

It envisages an open pit mine with throughput of 15,000 tpd. The processing method would heap leaching and the Merrill Crowe Process.

Assumptions

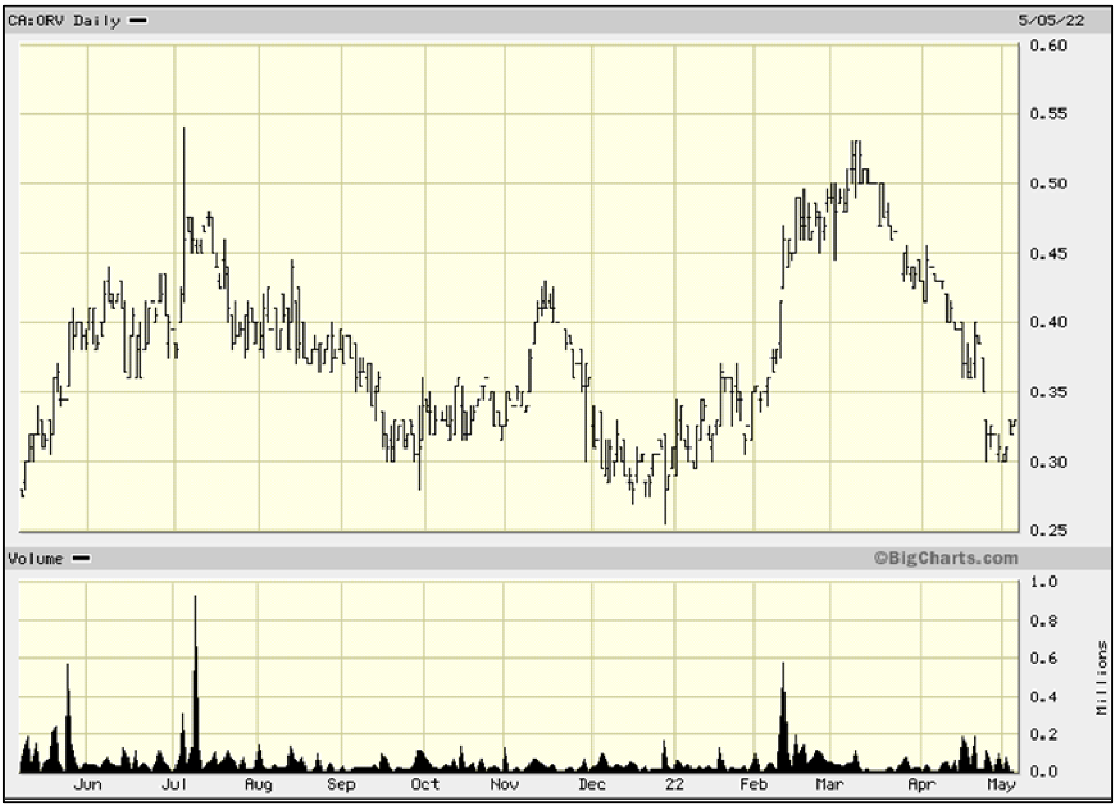
Gold Price per oz	US$1,700
Silver Price per oz	US$22
Construction period	one year
Life of Mine	9.2 years
Waste/Processed Feed ratio	0.69
Total mined plus rehandling (max)	14 mn tpa
Plant:	15,000 tpd
Au Recovery	83%
Ag Recovery	42%
Au LOM Production	430,000 ozs
Ag LOM Production	7,618 ozs

Our rule of thumb is that if the NPV is lower than the capex then we would rather pass on the project. In this case though, the fact that the PEA only dealt with the oxide component and that the resource is still only Inferred implies to us that there is potential to significantly enhance the economics without the capex increasing in a meaningful way.

Key PEA Metrics	
Pre-Tax NPV at 8.0% discount rate	US$103.7mn
Pre-Tax Internal Rate of Return (IRR):	27.40%
After-Tax NPV at 8.0% discount rate	US$56.9mn
After-Tax IRR:	20.20%
Payback Period (from start of operations):	2.9 years
Initial Capital:	US$141.2mn
LOM Capital:	US$147.8mn
Estimated Av. LOM (AISC)	US$915 per Au oz

So in short Orvana has one revenue source, the Bolivian workover could be added without too much complication and then there is an open-ended upside in the Argentine asset located in a propitious neighbourhood.

During the last month we added Orvana as a **LONG** in the Model Resources Portfolio with a twelve-month target price of $0.60.



Parting Shot

Truth may be the first victim of war but the London Metals Exchange (LME) has been carried from the battlefield on a stretcher in the first days of the conflict. While still showing signs of life its reputation has suffered a catastrophic amount of self-damage and has removed and thrown in the trash. The Hong Kongers had done relatively well in maintaining the image of the institution until recently but should never have been allowed to acquire the exchange in the first place. The new post-1986 (Big Bang) attitude of everything and everyone in the City of London being for sale prevailed. Now we see the price that is paid.

The HK crowd clearly march to the beat of Peking and letting one of the national champions go spectacularly to the wall while taking down one of its largest banks was a bridge too far for their sleazy crowd. *Dictum Meum Pactum* be damned, and *Sauve Qui Peut* (or the Chinese equivalent) should be the new motto of the institution. You let the riff-raff in and are you surprised the place goes to the dogs?

Despite the post-facto stiff upper lip of the LME's administration, all the denizens of the market we speak to see the entity as mortally wounded. We are surprised that there has not been a break for freedom yet by members. It would be relatively easy for the inner circle (pardon the pun) to decamp across the road and set up an alternative market. Maybe one of the Grand Panjandrums of the private equity world should back it. The current LME would wither on the vine within hours if the big traders and their clients exited stage left.

It is rather an indictment of the current government's grasp of City matters that the apocryphal "men in grey suits" have not paid a visit and advised the Hong Kongers that they might now need to sell the exchange back to its former members. After all they can do that or be publicly declared to be "not fit and proper people"…. Their choice… It would be the ultimate putdown but, frankly, they are not fit, and not fit for purpose. They are lucky they don't a tar & feathering into the bargain!

MODEL RESOURCES PORTFOLIO @ END APRIL

	Security	Ticker	Currency	Price	Change last 12 mths	Change last mth	12-mth Target
LONG EQUITIES							
Diversified Large/Mid-Cap	Hochschild	HOC.L	GBP	1.18	-41%	-9%	£3.40
	Sherritt International	S.to	CAD	0.72	38%	-1%	$0.95
Uranium	Sprott Physical Uranium	U.UN.to	CAD	16.9	214%	-10%	$15.00
	GoviEx	GXU.v	CAD	0.37	37%	-16%	$0.45
Zinc/Lead Plays	WisdomTree Zinc ETF	ZINC.L	USD	12.54	46%	-4%	$14.00
	Altaley Mining	ATLY.v	CAD	0.33	-27%	-6%	$0.90
Silver Explorer	Southern Silver Exploration	SSV.v	CAD	0.2407	-37%	-13%	$0.75
Silver ETF	IShares Silver ETF	SLV	USD	21.04	-8%	-8%	$26.00
Gold Producer	Soma Gold	SOMA.v	CAD	0.31	-3%	0%	$1.20
	Orvana Minerals	ORV.to	CAD	0.31	-3%	0%	$0.60
Gold Explorer	Desert Gold	DAU.v	CAD	0.10	-38%	-17%	$0.35
Metallurgical Coal	Colonial Coal	CAD.v	CAD	1.64	134%	-23%	$2.45
Project Generator	Altus Strategies	ALS.L	GBP	0.532	-25%	-7%	£1.00
Copper Explorers	Panoro Minerals	PML.v	CAD	0.17	-19%	-11%	$0.30
	Phoenix Copper	PXC.L	GBP	0.50	52%	-12%	£0.90
	C3 Metals	CCCM.v	CAD	0.11	-31%	10%	$0.44
Tungsten Producer	Almonty Industries	AII.v	CAD	0.85	-16%	-13%	$1.25
Graphite Developer	Blencowe Resources	BRES.L	GBP	0.0439	-45%	-5%	£0.22
Vanadium Developer	Vanadium Resources	VRB.ax	AUD	0.14	100%	40%	$0.08

MODEL RESOURCES PORTFOLIO @ END APRIL

	Security	Ticker	Currency	Price	Change last 12 mths	Change last mth	12-mth Target
LONG EQUITIES							
Lithium	Neometals	NMT.ax	AUD	1.59	318%	-18%	$1.50
	Lithium Power Intl	LPI.ax	AUD	0.79	204%	-13%	$0.80
Scandium Developer	Scandium International	SCY.to	CAD	0.10	-50%	-29%	$0.25
Gold Explorer	Cabral Gold	CBR.v	CAD	0.4	-30%	-7%	$0.60
	BTU Metals	BTU.v	CAD	0.07	-50%	-13%	$0.12
	Gunpoint Exploration	GUN.v	CAD	0.61	-6%	-6%	$0.75
	Bold Ventures	BOL.v	CAD	0.13	44%	44%	$0.18
	MetalsTech	MTC.ax	AUD	0.25	85%	-31%	$0.68
Fertilizers	Verde Agritech	NPK.to	CAD	10.33	584%	31%	$10.00
Cesium et al.	Essential Metals	EXX.ax	AUD	0.66	500%	14%	$0.30
Rare Earths	Rainbow Rare Earths	RBW.L	GBP	0.1351	-19%	-13%	£0.30
	Neo Performance Materials	NEO.to	CAD	12.91	-37%	-15%	$24.00
	Aclara	ARA.to	CAD	0.59	n/a	-19%	n/a
Tin Miners	Alphamin	AFM.v	CAD	1.39	136%	19%	$2.00
	Metals X	MLX.ax	AUD	0.74	252%	9%	$0.45
Oil & Gas	Shell	SHEL.L	EURO	21.73	62%	3%	£24.00
Royalties	Elemental Royalties	ELE.v	CAD	1.47	1%	-4%	$2.30
SHORT EQUITIES							
Shorts	NioCorp	NB.to	CAD	1.00	-22%	-7%	$0.40
	Aya Gold & Silver	AYA.to	CAD	8.04	58%	-13%	$8.00
	Galane Gold	GG.v	CAD	0.13	-41%	-7%	$0.06
	Texas Mineral Resources	TMRC	USD	2.07	-35%	-5%	$0.30

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