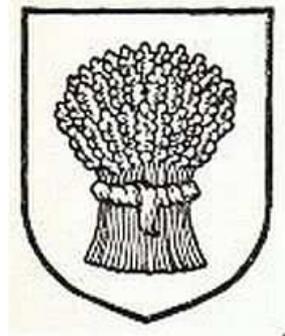


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HALLGARTEN & COMPANY

Portfolio Strategy

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Model Resources Portfolio: Land of the Lithium Giants

Performance Review – December 2021

Model Resources Portfolio

Land of Lithium Giants

- + Zinc had a stellar month in December and is definitively pulling ahead of copper as the base metal to be positioned in
- + Shipping rates have rebounded highlighting the real cost of providing minerals from far flung places to processing locations that do not make economic sense
- + Gold struggled to get above the key \$1800 mark but was at least trying, Silver was looking decidedly feeble
- + Tin continued to flirt with the \$40K per tonne price level while Antimony held nicely above \$13K per tonne
- + Energy stocks were the second top performing asset category in 2021 justifying our faith in majors like Shell etc.
- ✗ Further waves of the pandemic threaten to tip fragile economies, both East & West, back into recession
- ✗ The “EV Revolution” is driving Lithium to record prices and in turn lifting the good, bad & the ugly in the Lithium junior category
- ✗ Energy crises are showing the folly of decarbonisation and denuclearization with either growth and production suffering or a reversal of short-sighted policies

In the Land of the Lithium Giants

Deng Xiao Ping is most famous in mining circles for his oft-repeated aside from the 1980s that whereas “Saudi Arabia has oil, China has Rare Earths”. It didn’t grab much attention at the time because Rare Earths were largely a mystery to most listeners and moreover were not worth all that much and did not have many day-to-day applications besides bringing red colours to one’s cathode ray tube television. The rest is history with the final wake-up call in 2009-10 as to what Deng was actually referring to in strategic terms.

Now we can add a third leg to the mantra because Argentina has Lithium and oh, potentially, how much lithium it does have! In theory, Chile was the place to source Lithium from brine lake Lithium deposits (salares) but in a curious own-goal situation Chile has squandered that advantage by trying to keep a tight control on the number of players and advantaging the two incumbents. Predictions are that Argentina will overhaul Chile in terms of Lithium production by 2030. The result of the Chilean torpor at welcoming new entrants is that the surprisingly more laissez-faire attitude in Argentina has made it the go-to place for those wishing to stake positions in salares. Argentina has become something like, to

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paraphrase Deng, the Saudi Arabia of Lithium.

The Fluctuating Fortunes of Salares

One of the paradoxes of the middle of the decade was the “talking down” of *salares* as being in some way “too difficult” or too “long term”. Having said that though, several of the highest-flying stories in the First Lithium Boom such as Orocobre, Galaxy and Lithium Americas were *salar*-based. Back in that boom, and its current revival, there was/is a staking boom in the Argentine part of the Lithium Triangle that makes California in the 1850s pale into insignificance. Explorers, quite literally, cannot get enough of Argentine lithium territory.

The caution relating to *salares* exploitation was powered by the mishaps that befell Orocobre and Rincon. However, in both these cases the lessons learnt mean that others will have the benefit of their difficult experiences. The argument that there is a longer lead time for *salar* development (due to the need to kickstart the evaporation process) does not hold much water (pardon the bad pun) due to the much longer (and more expensive) drilling and resource estimation phase at a hard rock deposit and the much higher development costs at underground mines.

The downfall firstly of Canada Lithium after the end of the First Lithium Boom and the travails of Nemaska, at the beginning of the latest recovery, have cast a pall in many investors’ minds over large-cap underground spodumene mines.

The Road Most Taken

Despite perennial concerns about the Argentina political direction, the metaphorical road to the Argentine *salares* opportunity has become more like a Los Angeles expressway in peak hour, of late. Argentina has been in the Lithium game for decades, so is no newbie, but was always perceived as playing second fiddle to Chile.

Chile is merely expansion of existing facilities these days. Chile’s attachment to an ancient Pinochet regulatory system, that required nuclear regulators (CCHEN) to clear Lithium projects, just showed that Chile could not get out of its own way. This reinforces the view that Chile is not the mining paradise that many would have us believe. Its arcane regulations make it look like they are trying to keep new kids out of the game, and that is just resulting in Argentina making all the running.

With opportunities to enter and develop new projects in Chile finding constant stones in the road, several of Argentina’s Andean provinces have become a veritable boomtown for the Great & Good of the global EV revolution. The long established Livent (formerly FMC) was joined by Orocobre and Galaxy Resources (which then merged), and then a stampede of the elephants in the Lithium space occurred with Posco, Ganfeng, Tianqi and most recently Zijin Mining Group reset the bar higher with their stunning move on NeoLithium.

Not to be forgotten is ASX-listed Argosy Minerals (with their Rincon project – not to be confused with

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Sentient's fraught Rincon project) are now developing their Phase 2 step-up with Mitsubishi as the offtaker.

Then in November of 2021 TSX-listed miner Lithium Americas offered \$400mn in shares and cash for Vancouver-listed Millennial Lithium, the third offer for the company this year following one by China's largest battery maker CATL and lithium producer Ganfeng Lithium. Then to finish off the year, RTZ snapped Rincon Mining, a company owned by funds managed by the private equity group Sentient Equity Partners, for \$825mn. A feeding frenzy has begun.

Beyond these majors, there is an array of junior players hoping to replicate the Neolithium success story. One of the stocks that has come to our attention lately is Edison Lithium (TSX.v: EDDY), that we shall be initiating coverage on in the next month.

There is a good case to be made that the relative lack of *salares* moving to production pre-2019 was due to the double negatives of the low lithium price between 2011 and 2016 and the death throes of the first Kirchnerite period making Argentina an unattractive place to advance projects. Pricing has resolved itself and the Argentine government is welcoming Lithium players with open arms. This has not provoked something of a stampede, which is not something we wish to stand in the path of.

Portfolio Moves

During the months of November we added a **LONG** position in Desert Gold to the Model Resources Portfolio and then in December we added Blencowe Resources, the graphite developer in Uganda, on which we published an Initiation.

Xenotime is (still) the Word

Many moons ago we described Xenotime as the "thinking man's REE mineralization".

In the film, "The Graduate", the unworldly character Benjamin (played by Dustin Hoffman) is told at the cocktail party that there is one word that he should know and that word is "plastics". We are not sure in light of plastic's progress over the last 40 years whether that would have been the best of tips. However in the Rare Earth space we have been convinced for some time that the word is "Xenotime" and this is what aroused our interest in those REE players who have a Xenotime component in their REE mix.

The mineral in question is a REE phosphate mineral, whose major component is yttrium orthophosphate (YPO₄). The rare earths dysprosium, erbium, terbium, and ytterbium, and metal elements like thorium and uranium (all replacing yttrium) are the expressive secondary components of Xenotime.

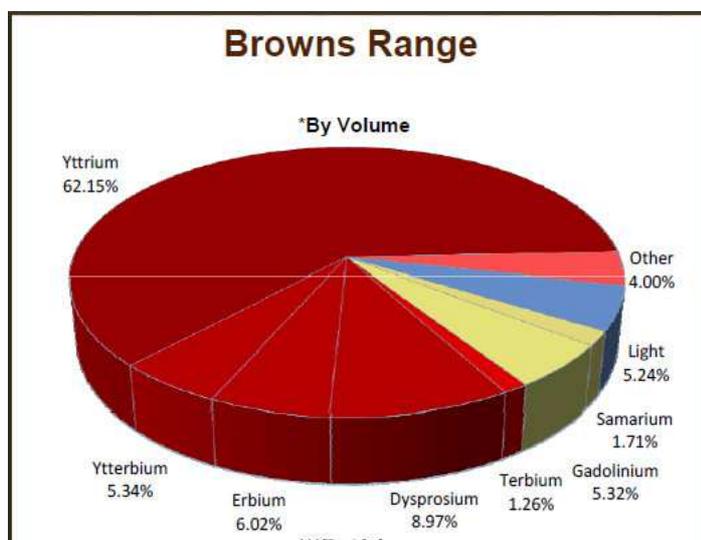
The beauty of Xenotime is the mix of REE in the mineral. The lanthanide content is typical of "yttrium earth" minerals, and runs about two-thirds yttrium, with the remainder being mostly the heavy and medium lanthanides, where the even-numbered lanthanides (such as Gd, Dy, Er, or Yb) each being present at about the 5% level, and the odd-numbered lanthanides (such as Tb, Ho, Tm, Lu) each being present at about the 1% level. The pie chart on the following page shows the REE weightings the Brown

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Range deposit in Western Australia, with the meagre exposure to Light Rare Earths (the blue segment) being particularly poignant.

We had favoured the main Xenotime play, Northern Minerals (NMT.ax that owns Browns Range) through most of the last decade and it did indeed reach production of a sort. However, we eventually purged it from the Model Resources Portfolio as it was clear that the sheer volume of shares on issue mean that moves in the price would at best be infinitesimal. Further

complicating the picture was a “Mexican standoff” (pardon the pun) with the Chinese shareholders.



Enter PWV

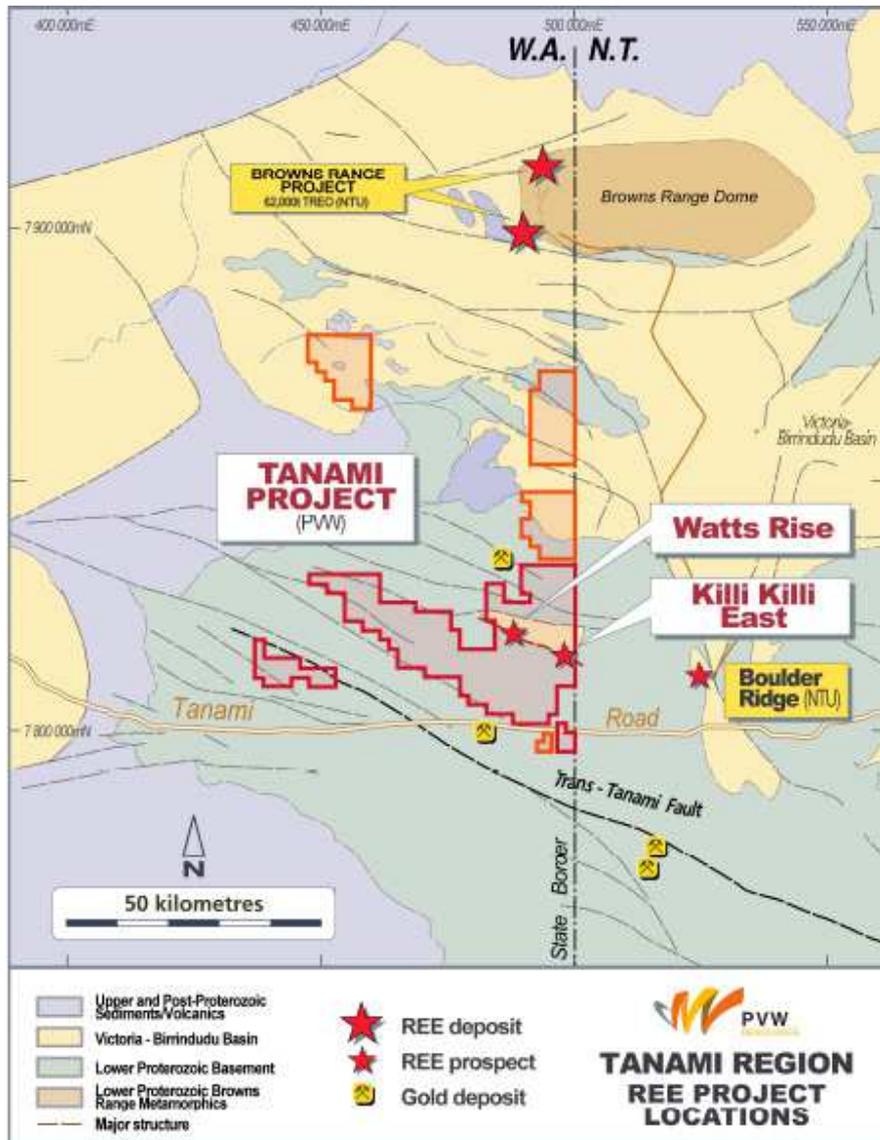
We remain card-carrying fans of Xenotime but precious little has been done to cultivate further projects of this mineralisation with Ionic-adsorption clays being very much a flavour (and not without merits) in this latest recovery of interest in Rare Earths, linked to the EV revolution.

Thus we were pleased to see that some of the key management that had decamped from Northern Minerals had set up shop at PWV Resources (PWV.ax) though seemingly the focus had shifted to gold. Those that transitioned over included:

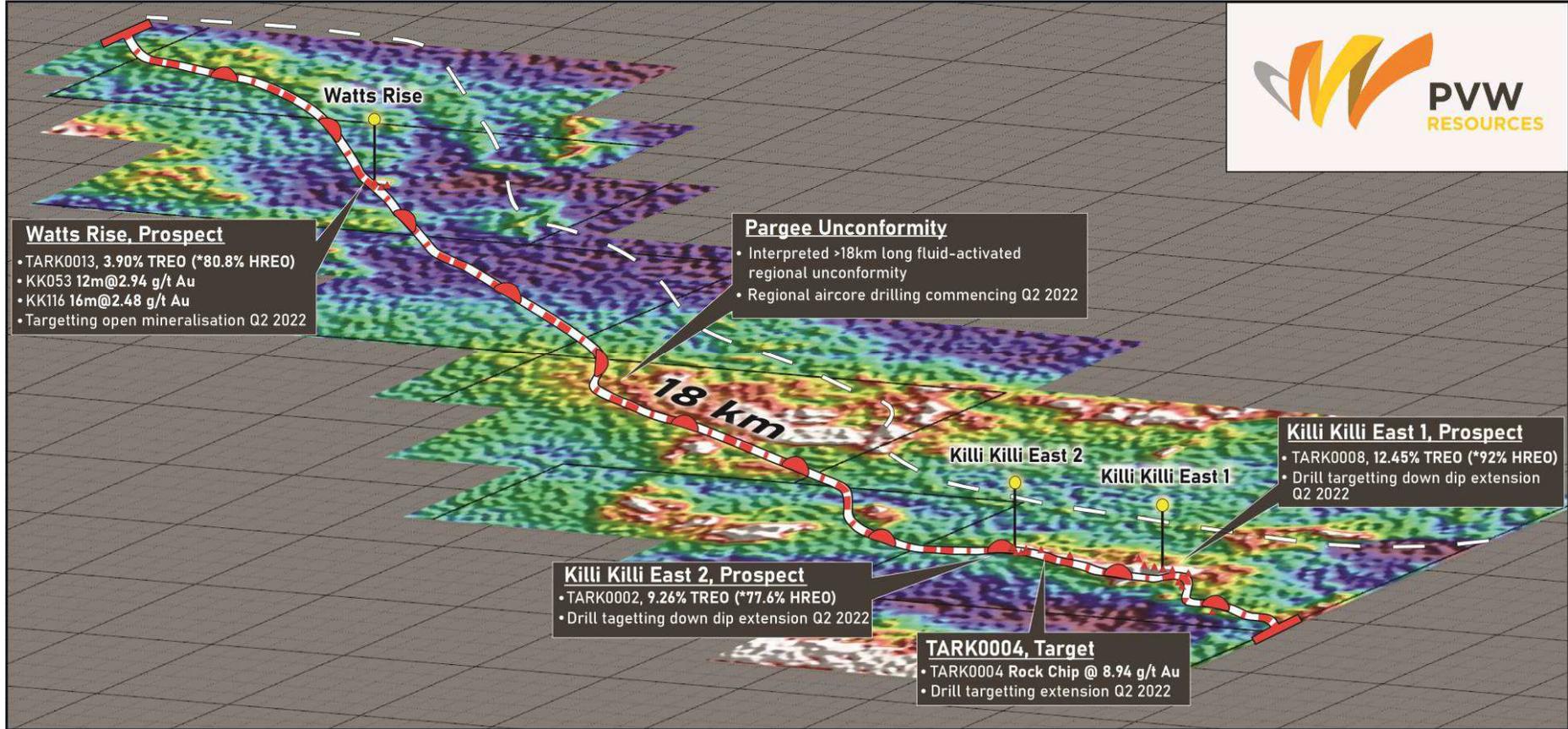
- George Bauk, former Northern Minerals MD/CEO, 2010-20 and led the transition to a producer of HRE carbonate.
- Robin Wilson, former Northern Minerals Exploration Manager, credited with discovery of Browns Range
- Colin McCavana, founder and former Northern Minerals Chairman who oversaw the companies development

The gold in the mix was more of a case of diversification though as the real target seems to be REE territory (and moreover Xenotime potential) to the south of Browns Range, ergo, familiar territory for the management team. However it would not surprise us if the gold was spun out at some early juncture if the Rare Earths prove to have legs, particularly as Rare Earths have a more propitious funding environment at the moment.

Leaving to the side the gold projects, the REE target of PVW is its Tanami project, located in the Kimberley region of WA, and occupies ~900km². It is located approximately 1,500km northeast of Perth, 220km south-southeast of Halls Creek in the Tanami desert, adjacent with the Northern Territory border.



REE's have historically been targeted within the project and are considered a focus for future exploration efforts. The PGE potential has not historically been tested by explorers in the project area, however the knowledge gained from recent discoveries of layered mafic hosted PGE's in otherwise Granite / Metasedimentary dominated regions adds to the suite of possible mineralisation styles. PVW will be investigating known magnetic anomalies that require testing to confirm lithology and geochemistry.



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PWV's field programs commenced in August 2021 at Killi Killi and Watts Rise prospects. The geological team sees regional potential for hydrothermal unconformity-related Rare Earth mineralisation along the 18km long Watts Rise/Killi Killi trend with the contact/unconformity between the Pargee Sandstone and the Killi Killi Formation being considered prospective for this style of mineralisation. Overarching this is the conviction that Tanami has a similar geological setting to Northern Minerals Browns' Range project which is located 100km to the north.

The upcoming work REE regional exploration program will focus on the area between Watts Rise and Killi Killi East, with reprocessing and interpretation of airborne radiometric and magnetic data reveal potential new REE targets. Further soil and rock chip assay results are expected in January with drilling planned for April 2022.

If the gold campaign starts to yield promising results... and the Rare Earth sampling lives up to expectations then a division of the company into two parts would look like the way to go. One to watch...

And on a Related Note....

In a surprising development, Nick Curtis, the former CEO of Lynas back in the days when it made the ill-fated decision to locate in Malaysia was revealed to have made a rather stunning AU\$20mn investment into our once beloved Northern Minerals (NTU.ax). He had previously been named the company's non-executive chairman in November. He acquired 200mn shares of NTU's stock in a transaction dated December 22nd. The stock was bought at an average cost of AU\$0.10 (US\$0.07) per share, with a total value of AU\$20mn (US\$14.5mn). This occurred while the stock was trading at 5.5cts, so we can only presume he took out one of the annoying Chinese investors that are in the name. Good riddance to them. And yet an interesting sign of faith in the NTU model/strategy.

Still not enough to tempt us back into the water, without a stock consolidation for starters.

Elemental in the Sights

The trajectory of this Portfolio holding in the public markets may end up being a short one as Gold Royalty Corp. (NYSE: GROY) announced on the 20th of December its intention to "pursue an offer" to acquire all of the outstanding common shares of Elemental Royalties (TSXV: ELE) for consideration consisting of 0.27 common shares of Gold Royalty in exchange for each Elemental share.

The offer valued Elemental at CAD\$1.78 per share (at the then prevailing share price) and represented a premium of 37% to Elemental shareholders. The offer represented a total equity value for Elemental of approximately CAD\$130mn on a fully diluted, in-the-money basis, and Elemental shareholders are expected to own approximately 12% of the combined entity upon completion of the transaction.

The company issued a statement that said this was not a firm offer and shareholders should await a definitive offer. They also advised that they had previously received proposals from the predator which

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after consideration had been found to be “not compelling”.

Sounds like GROY will have to significantly up their offer to get traction here but at least in the short term it justifies our thesis that there needs to be a rationalization of the royalty company space as many are offering nothing in particular that is very special.



Desert Gold – On a Mighty Trend

The first decade of the current century saw quite a lot of Canadian mining investors cast off their Afro-phobia and they charged into West Africa. The rest of the continent was left to the Australians and South Africans, particularly the south and eastern parts.

Back in the day we started looking at this area due to our coverage of Oromin. That was later taken over by Teranga, which spent a long time in the portfolio before being dropped when it retreated from dual-listed status. It then was taken over the Endeavour Mining in 2021 for \$2bn.

A recent conference appearance in London brought Desert Gold (DAU.v) to our attention. The first trigger for us was its proximity to Marvel Gold’s territory. Marvel (MVL.ax) is the JV partner of Altus Strategies (another of our Model Resources Portfolio constituents) in the Tabakarole project at the northern end of the trend. Altus is also a shareholder in Desert Gold (with 2.2%).

The flagship project of Desert Gold is the 410km² SMSZ project which overlies a 38 km section of the prolific Senegal Mali Shear Zone, which hosts four Tier One gold mines, including B2 Gold's Fekola Mine, Barrick's Goukoto and Loulo Mines and Allied Gold's Sadiola and Yatela Mines.

The graphic at the left shows the regional geology of this part of West Africa with its extensive and lengthy shear zones.

Regional Geology

The area along the Senegal-Mali border is underlain by Proterozoic and Archaean rocks of the West Africa Craton. The craton stabilised at approximately 1,800 Ma and is composed of the Reguibat Shield to the north and the Leo or Man Shield to the south. The Kédougou-Kéniéba Inlier is a north-northwest trending granite-greenstone belt which occurs along the Mali-Senegal border. The Kéniéba Inlier consists of Birimian volcano-sedimentary formations regionally metamorphosed to greenschist facies and intruded by large granitoid-gneiss complexes.

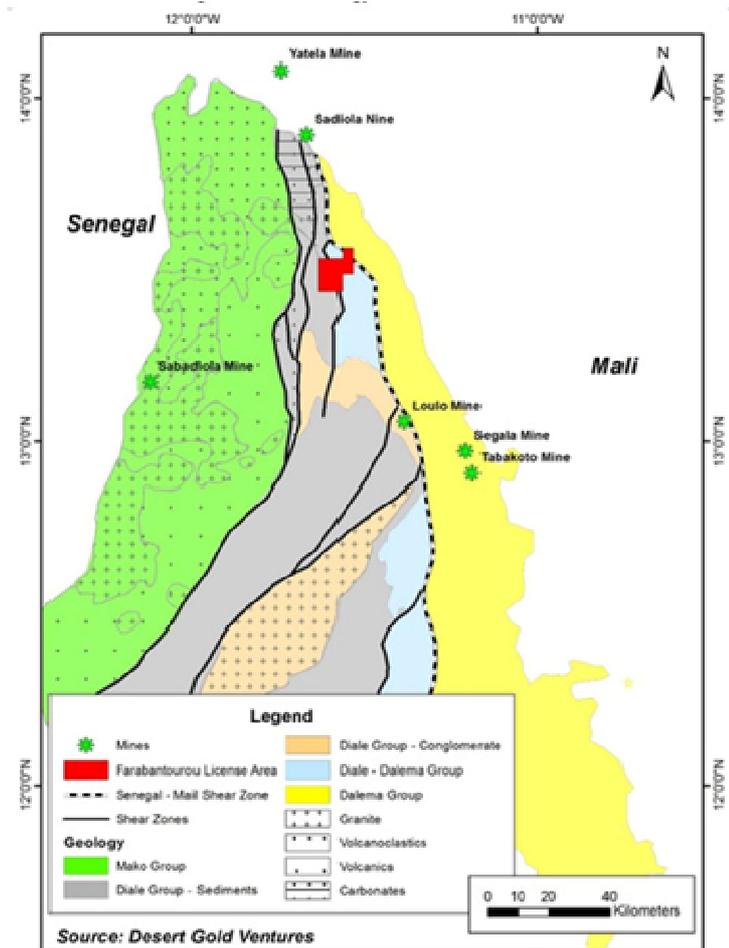
Airborne magnetic data (on the following page) shows the likely location of the Senegal Mali Shear Zone between high magnetic rocks to west and low magnetic rocks to east North-northeast. In this part of the world trending magnetic features often represent secondary shear zones, which control the location of gold zones.

Thus far 24 gold zones have been discovered and management feels that more are likely to be identified. The most significant drill results included 6.28 g/t Au over 13 metres.

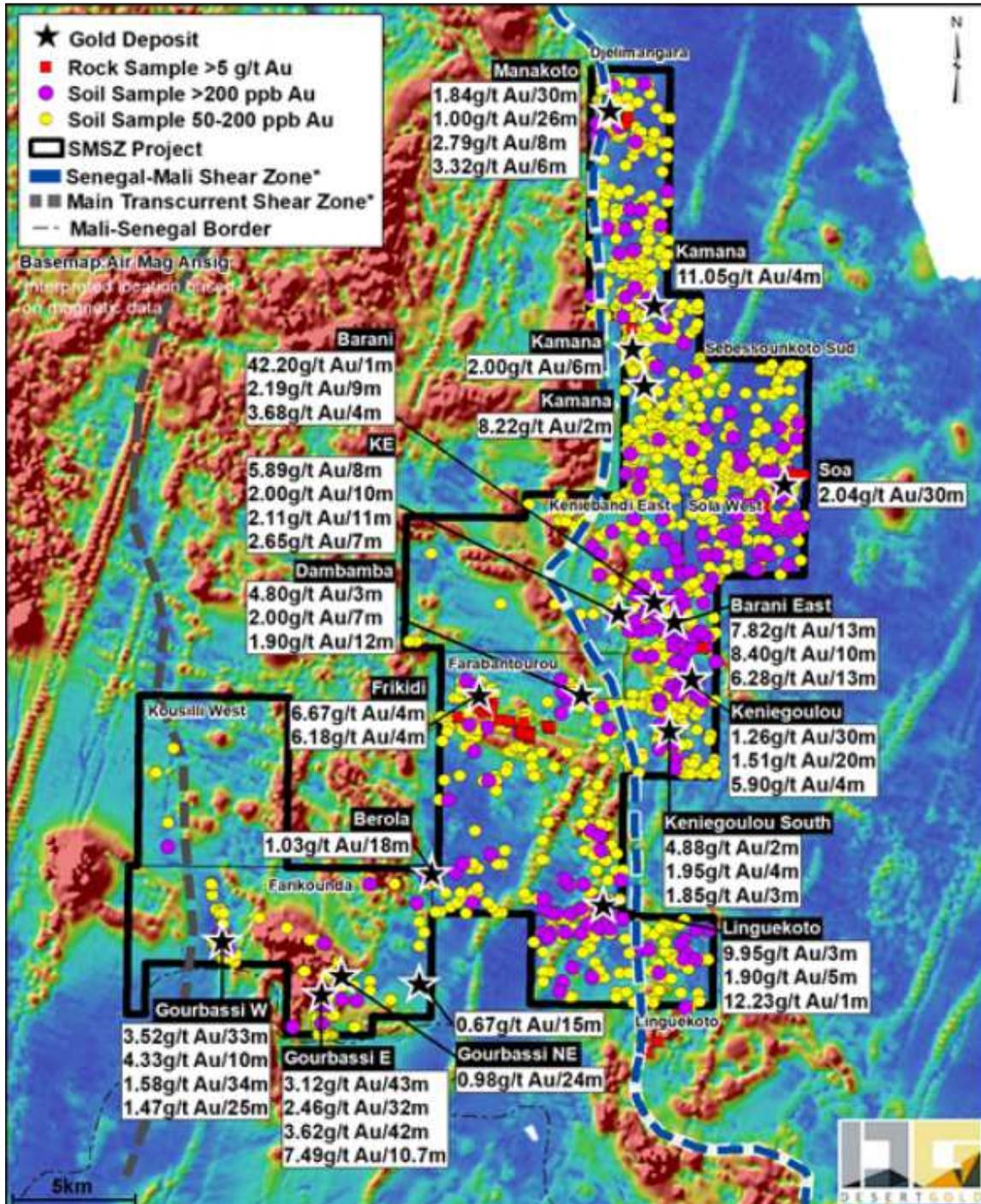
The targets at Gourbassi East, Gourbassi West, Barani East and Mogoyafara South have seen the most work thus far. Other areas have seen limited drill testing with follow up drilling required at most of them.

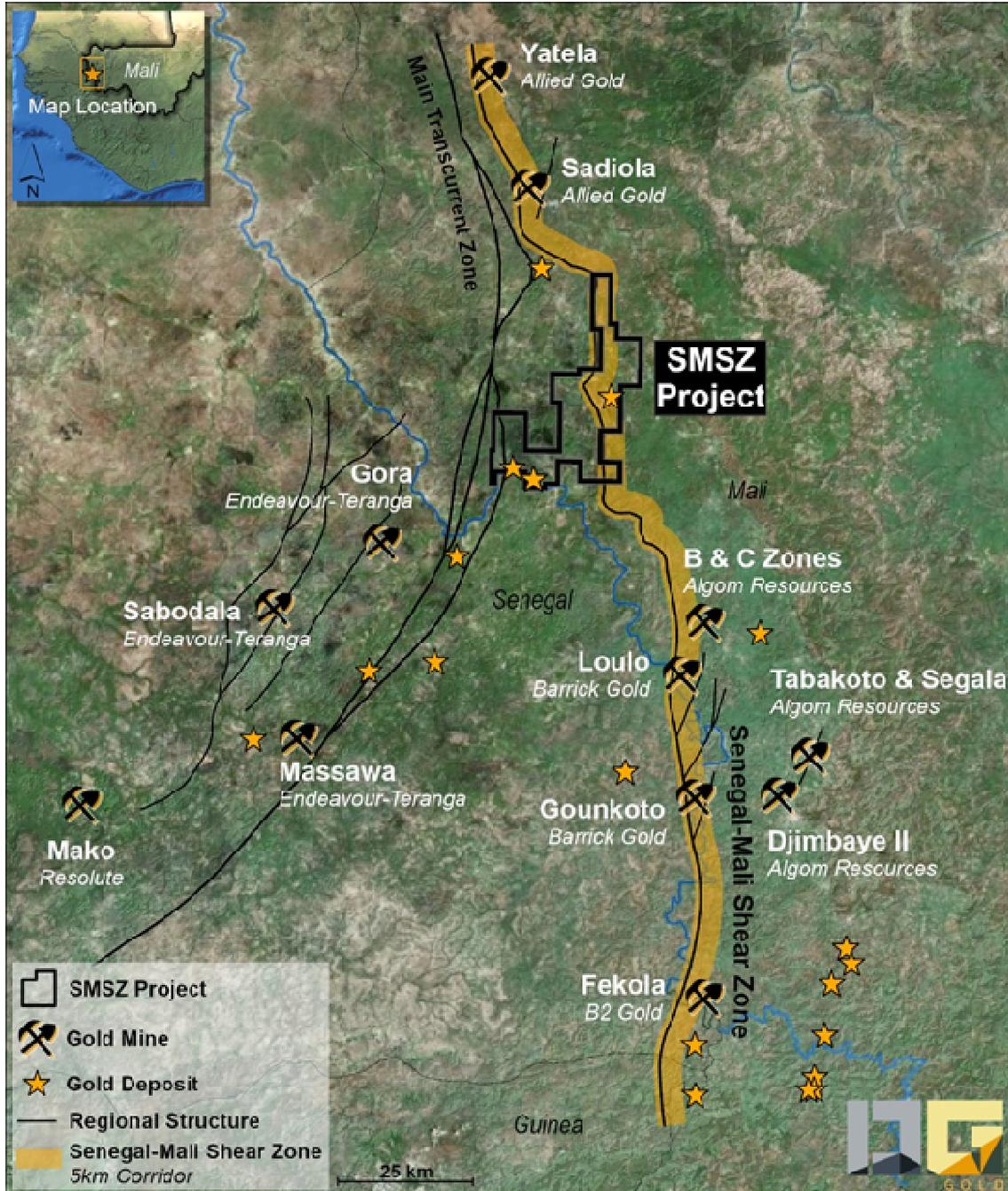
The Management

Essentially for us the clincher is the technical director (and director), Don Dudek. He brings to Desert over 40 years of experience in various roles with junior to senior exploration and mining companies. He recently served as the CEO of Savary Gold (which was sold to Semafo in April 2019). He also served as Senior V.P. of Technical Services for Endeavour Mining Corporation where he managed a feasibility



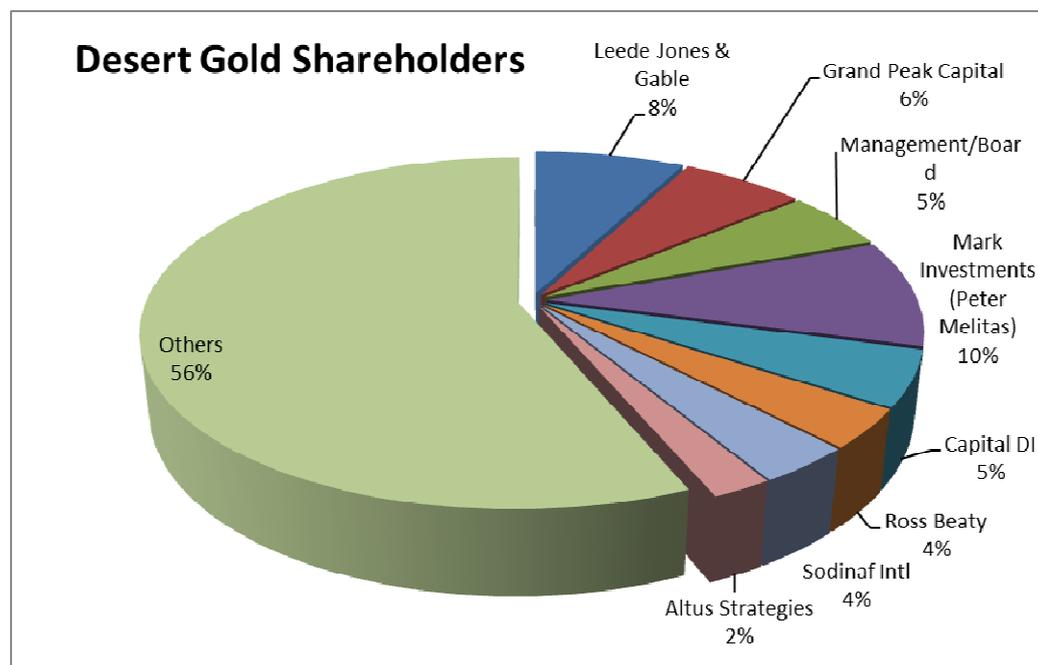
study for the Hounde Gold Project in Burkina Faso. Previously, he served as Senior VP Exploration of Avion Gold Corporation, another junior gold producer and explorer in Western Mali, which was also acquired by Endeavour. Ergo, he is steeped in West African gold experience.





Shareholders as the Giveaway

For what is still essentially a small cap the shareholder base makes interesting with Ross Beaty in the mix:



We have added a **LONG** position in Desert Gold to the Model Resources Portfolio with a twelve-month target price of CAD\$0.35.

Parting Shot

The past year has seen the most serious outbreak of inflation since the 1970s. While inflation was high in the early 1980s, that was the tail end of the inflationary bout that had started in the early 1970s. We have been quite surprised at central bankers and finance ministers tiptoeing past the graveyard of those times and projecting inexplicable confidence that they can keep the current outburst under control when their predecessors in the 1970s failed. Moreover, history shows that it was only Volcker and his interest rate sledgehammer and money supply control measures that brought the beast to heel. In our day and age, these are exactly the two remedies that are being renounced as too extreme. Even worse they are deemed unnecessary because "we have this under control". Famous last words, indeed.

The gold price has been collateral damage of this Phoney War. The second top asset class in 2021 was energy (and we are not talking wind turbines or solar panels but good old carbon-producing energy). This was due to the price surge of this asset class' outputs of oil and gas. And yet gold was second from the bottom in performance with a negative outcome for the year. We live in interesting times when yields can rise and stocks also rise. Something has got to give. We are not inclined to see energy fall and we are hanging onto our oil & gas predictions with gusto as the Green Revolution starts to show that it is a Potemkin Village blown away by the icy blast of reality.

Gold has definitely become decoupled in the minds of the masses from its traditional role as an inflation hedge (or hiding hole). Will it recouple? The coming year, 2022, should prove whether it can regain this

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status or not. The soft-peddling of inflation remedies should allow the beast to roam wild across the global landscape so the interest rate tool will have to go from being used as a feather duster to being a sledge hammer. That has all sorts of implications, not least of which is pricking the property bubble of the last 25 years. Removing the all-consuming property sector as an asset class would definitely help in letting currently unfashionable (or forgotten) classes have a chance at getting their own day in the sun.

Our metals price estimates will be published in a forthcoming note but, for us, we would see gold breaching the \$2,000 mark again over the next twelve months.

MODEL RESOURCES PORTFOLIO @ END DECEMBER							
Security	Ticker	Currency	Price	Change		12-mth Target	
				last 12 mths	last mth		
LONG EQUITIES							
Diversified Large/Mid-Cap	Teck Resources	Teck.B	CAD	36.43	58%	3%	\$30.00
	Hochschild	HOC.L	GBP	1.301	-37%	-12%	£3.40
	Sherritt International	S.to	CAD	0.41	0%	-16%	£0.95
Uranium	Sprott Physical Uranium	U.UN.to	CAD	13.93	184%	-2%	\$15.00
	GoviEx	GXU.v	CAD	0.36	57%	-20%	\$0.45
Zinc/Lead Plays	WisdomTree Zinc ETF	ZINC.L	USD	10.86	28%	7%	\$9.00
	Altaley Mining	ATLY.v	CAD	0.49	75%	14%	\$0.90
Silver Explorer	Southern Silver Exploration	SSV.v	CAD	2.8	237%	106%	\$1.80
Silver ETF	IShares Silver ETF	SLV	USD	21.51	-12%	-3%	\$26.00
Gold Producer	Soma Gold	SOMA.v	CAD	0.36	16%	-3%	\$1.20
Gold Explorer	Desert Gold	DAU.v	CAD	0.14	-26%	8%	\$0.35
Metallurgical Coal	Colonial Coal	CAD.v	CAD	2.62	198%	-6%	\$2.45
Project Generator	Altus Strategies	ALS.L	GBP	0.5877	-26%	-18%	£1.00
Copper Explorers	Panoro Minerals	PML.v	CAD	0.16	-6%	-11%	\$0.30
	Phoenix Copper	PXC.L	GBP	0.53	31%	-28%	£0.90
	C3 Metals	CCCM.v	CAD	0.16	39%	-24%	\$0.44
Tungsten Producer	Almonty Industries	AII.v	CAD	0.89	39%	-1%	\$1.25
Graphite Developer	Blencowe Resources	BRES.L	GBP	0.046	-39%	-22%	£0.22
Vanadium Developer	Vanadium Resources	VRB.ax	AUD	0.08	167%	0%	\$0.08

MODEL RESOURCES PORTFOLIO @ END DECEMBER							
Security	Ticker	Currency	Price	Change		12-mth Target	
				last 12 mths	last mth		
LONG EQUITIES							
Lithium	Neometals	NMT.ax	AUD	1.43	411%	40%	\$1.00
	Lithium Power Intl	LPI.ax	AUD	0.46	109%	-8%	\$0.30
Scandium Developer	Scandium International	SCY.to	CAD	0.14	-36%	-22%	\$0.25
Gold Explorer	Cabral Gold	CBR.v	CAD	0.41	-42%	8%	\$0.60
	BTU Metals	BTU.v	CAD	0.09	-47%	13%	\$0.12
	Gunpoint Exploration	GUN.v	CAD	0.57	0%	-5%	\$0.75
	Bold Ventures	BOL.v	CAD	0.11	-12%	0%	\$0.18
	MetalsTech	MTC.ax	AUD	0.29	41%	-15%	\$0.68
Fertilizers	Verde Agritech	NPK.to	CAD	2.8	237%	106%	\$2.00
Cesium et al.	Essential Metals	EXX.ax	AUD	0.2	150%	-9%	\$0.30
Rare Earths	Rainbow Rare Earths	RBW.L	GBP	0.1733	61%	14%	£0.30
	Neo Performance Materials	NEO.to	CAD	20.28	47%	6%	\$24.00
Tin Miner	Alphamin	AFM.v	CAD	0.94	141%	2%	\$0.80
	Metals X	MLX.ax	AUD	0.57	307%	54%	\$0.45
Oil & Gas	Shell A	RDSA.L	GBP	16.2382	25%	-1%	£14.90
Royalties	Elemental Royalties	ELE.v	CAD	1.66	n/a	23%	\$2.30
SHORT EQUITIES							
Shorts	NioCorp	NIO.to	CAD	1.29	59%	37%	\$0.40
	Aya Gold & Silver	AYA.to	CAD	9.55	148%	4%	\$8.00
	Galane Gold	GG.v	CAD	0.115	-50%	-12%	\$0.06
	Texas Mineral Resources	TMRC	USD	1.97	11%	-12%	\$0.30

Important disclosures

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