

# **Antimony giant Twinkling Star winding down another perfect storm is rising...**

It is well known that the Bingham Canyon mine and a handful of South African gold mines date back to the days of Queen Victoria. The Antimony space though is typified by long-lasting mines, as I have written before, with Mandalay's Costerfield mine outside Melbourne having operated on and off since the 1860s, the Consolidated Murchison Mine in South Africa has functioned (also sporadically) since the 1940s and the industry giant, Twinkling Star in China having a history going much further back.

But all good things must come to an end and Twinkling Star is staggering on its last legs and Cons Murch was recently put into care & maintenance (yet again). This creates something of a perfect storm which may drown those short the very illiquid antimony metal market and leave many end-users with their "just-in-time" practices wrong-footed.

## **The 800lb Gorilla of Antimony**

The granddaddy of Antimony mining is the Hsikwangshan Twinkling Star Antimony Mine at Lengshui Jiang in China. It was originally found in 1541, when mining began artisanally, and it has been mined "formally" since 1897. This mine alone has produced around 25% of global supply in recent decades. It is this mine that gave China the 90% market dominance in the Antimony space it has enjoyed since the 19<sup>th</sup> century. Admittedly this mine is special in that it is not only long-lasting but also high volume. The mine is owned by Hunan Non-Ferrous (HNC), the world's largest Antimony producer, which itself is a satellite of China Minmetals. We have heard that the latter is now trying to fold the whole of HNC into its own

corporate structure. As an aside we might note that the Beaver Brook Antimony mine in Newfoundland that was opened several years ago, was bought very soon after but HNC and then shuttered. Official reasons related to grade but many felt it was an attempt to remove a “rogue” player from the market.

### **Some Technical Details**

Twinkling Star is a “Supergiant” Sb deposit. Statistics on the mine are somewhat sketchy, much as was the case with Bayan Obo when the Rare Earth boom broke. This should be seen in the context that Twinkling Star is a “national treasure” like Bayan Obo as it has long-cemented Chinese dominance. The numbers that we do have are that 801,000 tonnes of Sb produced in the period 1897-1990. Reserves (back in 2002) were 570,000 tonnes of Sb, but that is now mostly depleted and it is estimated that there are less than four years of ore remaining. Even that production is now in declining amounts per annum, at high production costs because the ore face is now located so far from the mine entrance.



Geologically speaking the mine consists of:

Four major deposits hosted in series of antiforms in 2km wide x 9km long belt

- No igneous rocks for 25 km<sup>2</sup> around ore field, except for a small ultramafic dike
- Mostly stratiform, carbonate-hosted and, to a lesser extent, black shale-hosted
- Collapsed breccias in limestones at shale contacts provide an important lithological control

However, even Antimony mines don't last forever and it is a widely held view that this mine is now in terminal decline with higher extraction costs and declining grades. Costs are rumoured to be \$2.50 per lb, thus requiring a meaningful

uplift in market prices to make mining the residual reserves a worthwhile endeavour.

The key thing to note is that there is no other Antimony mine in history that has even vaguely been of this size and it is highly unlikely that another such will come along.

### **Some Other Pressures Building**

As mentioned earlier the Cons Murch mine went into care & maintenance mode in late 2014 after the sale to Stibium (which was then going to list on the AIM) fell through. So Village Main Reef, the JSE-listed current owners mothballed it. Cons Murch is the perennial canary in the coal mine and its closure represented the effect of Sb dropping below \$9,000 per tonne and the high costs of u/g mining in South Africa. However as a harbinger in the industry it will also inevitably reopen as soon as Sb prices spike. It is (was) the West's major producer at 5,000 tonnes per annum so its effect is not insignificant.

Meanwhile the Hillsgrove mine in Australia is back in production. However information is scant as the operators are private and the only noise on the airwaves about this is the probably apocryphal utterances of US Antimony boosters that claim that UAMY's Mexican roaster is "processing containers of ore from Hillsgrove". Hmmm. Make up your own minds on that one.

The more relevant development relates to Burma. Long mired in civil war, the rebel tribes in the north of the country stumbled upon artisanal Sb mining as a good way to pay for guns and a growing tide of material, in recent years, has made its way to China across the unsupervised border. DERA, the German equivalent of the USGS or BGS, has estimated that up to 14,000 tonnes was exported (smuggled?) from Burma in 2011. There are two negative dynamics for Sb supply here. The first is the obvious one that artisanal mining is almost always the easiest pickings and when the task involves declining grades

or going underground or creating deep open-pits for extraction then the effort peters out. These rebels were clearly over-exploiting whatever resource they had to hand which is a recipe for a steep drop-off in production at some point. More interesting though is the gradual opening of the Burmese economy and political stabilization. With the recent signing of accords between the government and some of the most prominent rebel groups this could put an end to artisanal pillaging of the metal supplies out of Burma and put the trade on some sort of more professional (and regulated) basis.

All of this spells less supply and less selling by desperados.

### **And the Effect**

A picture supposedly tells a thousand words so here goes:



Source: Argus Minor Metals

In fact, though one of my trading sources in Shanghai said the metal is trading at \$9,200 per tonne, having added 6% in just one day.

### **Conclusion**

So it looks like another one of Antimony's Perfect Storms is brewing. However the last time the Sb price spiked to over \$14,000 was largely on rumour and artificial constriction of supply. The demise and closure of Twinkling Star would be a much more permanent reordering of the global Antimony market place with the traditional Chinese dominance of the metal suffering a big and possibly mortal blow. This in turn would position non-Chinese sources to grab a bigger market share. However the latter is easier said than done when the West has allowed the bulk of its mines to fall into disuse..

The death of a star is usually followed by a super nova as it explodes and then implodes ending as a black hole. Though in

some cases a stars may just shrivel to become a white dwarf. Twinkling Star seems destined to become a black hole, followed by an explosion in the price of the metal left bereft of its large mine source. Those end-users not well supplied from alternative sources may find themselves in turn sucked into the alternative universe on the other side of this black hole and that alternative universe may well consist of a few years of absolute shortage of supply.