

Cornwall – Treasure House of Tin?

The recent revival of mining in Southwest England with Wolf Minerals Hemmerdon Mine in Devon has sparked a revival in interest in what is one of the longest established mining districts in the world. Mining in Cornwall and Devon began in the early Bronze Age approximately 2150 BC and ended, ostensibly, with the closure of South Crofty tin mine in Cornwall in 1998.

The tin trade between ancient Rome and Cornwall was a famous vector of commerce and one of the justifications for Rome's invasion of Britain. Before then it was the Phoenicians that controlled the trade. At its peak, reached in the 19th century, thousands of workers were employed in up to 2,000 mines, before the industry collapsed when ores began to be produced more cheaply abroad (mainly Malaya). In 1870, the 10,000 tpa produced in Cornwall represented 50% of world production. The closures produced an amazing diaspora of Cornish miners who fanned out across the globe to found, and work in, all sorts of mines in the second half of the 19th century.

The area is somewhat of a treasure chest with extensive tin and copper mining, as well as arsenic, silver, zinc, Antimony and other metals. Tin, and later copper, were the most productive of the metals extracted in Cornwall. Some tin mining continued long after mining of other metals had become unprofitable.



As a result of geological studies some forty distinct minerals have been identified from type localities in Cornwall, e.g. endellionite from St Endellion. Quarrying of the igneous and

metamorphic rocks has also been a significant industry: in recent times the extraction of kaolin has been the most important economically. Indeed the Hemmerdon mine used to be a china clays mine for English China Clays.

In recent years no less than four revivalist proposals for tin “mines” in Cornwall have passed across my desk. Three of them were for the same property. We shall look at some of these here.

Tin Resurgent?

The vibe is improving in specialty metals, with Lithium leading the charge. Despite a worsening supply outlook (and no appreciable weakening in demand) Tin’s chart moves don’t exactly look all that auspicious. Off the bottom, yes, but scarcely booming.



South Crofty – a perennial

The South Crofty mine is located near Camborne on the north coast of Cornwall. The mine has seen production from near-surface copper mineralization and deeper tin-only mineralization. Talk of its resurrection is a constant with a strong local support base for such a move. When it closed in 1998 it was Europe’s last tin mine.



Several companies attempted to revive the mine between 2001 and 2013. Significant advances were made, primarily the agreement to secure a site for future mill construction, and the grant of a mining permit which is valid until 2071, subject to certain planning conditions being met. However, the timing of the mine permit grant coincided with the current poor market conditions in the resource sector and the assets were put into administration in 2013.

Its then owners Baseresult Holdings Ltd, which bought the mine in 2001, created a new company, Western United Mines Limited to operate it and claimed to be spending in excess of £50m on restarting the mine. The company claimed that the mine had potentially another 80 years of life. The plans were beset with a row with the South West Regional Development Agency (RDA) over use of more than 30 acres of land surrounding the site. The RDA wanted to make a compulsory purchase order on the site for leisure, housing and industry.

Celeste

Celeste was a TSX main board listed entity which morphed from copper explorer to the pursuer of the South Crofty opportunity in 2012. At some time after that it was presented to us as something to get involved in. It was intriguing at least. Around about that time the intrepid private equity group, Liberty Mines and Metals became a shareholder and appointed a director. Things went sour in 2013 though with a suspension of work in the middle of that year. The company was declared in default by the Earn-In partner, while the CEO and other directors were thrown under the bus. Last news was 2014 and then a deathly hush descended on the company and it disappeared from the TSX.

Tin Shield

Then along came a private entity, Tin Shield, who wanted us to run our sliderule over the project in 2015. Private entities not really being our thing, we passed on that.

Strongbow

Next to step into the shoes at South Crofty has been Strongbow Exploration (TSX-V:SBW), which hitherto had been pursuing a large bulk tonnage nickel copper sulphide deposit at Nickel King, Northwest Territories and holding an interest in the Skoonka Creek gold property in British Columbia.

This company took a novel turn in recent times when it signed a property purchase agreement with Osisko Gold Royalties and a Mr. R. Netolitzky to acquire 100% interests in two Alaskan tin projects, the Sleitat and Coal Creek properties. This is an area we have looked at written before, particularly as it pertains to Ucore's rarely mentioned Ray River asset.

Then Strongbow moved into the Tungsten space when it signed an interesting agreement with Teck Resources, in which it purchased Teck's royalty interest on the Mactung and Cantung projects (which I have written upon before) located in the Yukon and Northwest Territories. These had previously been owned by the stricken North American Tungsten. To pay for this Strongbow drew down the full amount of a line of credit from Osisko Gold Royalties Ltd. and paid \$1,500,000 to Teck.

It then topped off this frenzy of activity by signing an agreement (in March 2016), relating to the stricken assets of Western United Mines, with Galena Special Situations Fund (the only secured creditor) and the aforementioned Tin Shield Production Ltd. (that agreed to forego its option with Galena to acquire the project). We had encountered Galena before also in regards to Tin when we met its founder, who had previously been the King of Tin trading at Trafigura.

The deal relates to the acquisition of Western United Mines Ltd. (in Administration) and Cornish Minerals Limited (Bermuda), both of which were placed into administration in 2013, which hold the rights to the South Crofty underground mine permission area, plus additional mineral rights over a further 7,500 hectares located in various parts of Cornwall. Strongbow agreed a deal with the administrator managing the affairs of the problem companies to acquire the shares and to fund the exit of the companies from administration by settling a proportion of claims owed to unsecured creditors. The exit from administration was budgeted to cost up to \$350,000.

Galena, the only secured creditor, converted all of the debt

owed to it into common shares of Western United Mines Ltd and then all those shares were acquired by Strongbow.

The focus for Strongbow will be to evaluate the deeper tin-only mineralization that occurs primarily from a depth of 400m below surface.



Marine Minerals

I am a regular denizen of the All Party Parliamentary Group on International Mining that meets several times each year at the Houses of Parliament in Westminster. At one of these sessions in late 2014 the topic turned to the evolving mining scene in Britain. After that someone came up to me with a proposal that he thought I would find strange. But having been exposed previously to the Nautilus Minerals (TSX:NUS) undersea mining proposal nothing would surprise me.

In this case the proposition was to exploit the mine tailings mineral sand asset lying in the shallow waters off the northern coast of Cornwall. These had been explored and calculated as resources back in 1985. There is also believed to be potential for economic heavy metal concentrations in buried beaches and paleochannels. The origin of this offshore resource is partly geological (erosion) but largely from the millennia of mining onshore, most of which happened very close to the coast with runoff carrying the tin out to sea.

The goal of the project is to essentially operate like the diamond miners off the coast of Namibia but with a suction system rather than dredges. Most specifically the company intends to employ seabed crawlers tethered to a dynamically-positioned vessel and pre-concentrating the material on board using screens and spirals. This would reduce the material to a 5% Sn pre-concentrate which would then be brought ashore at a port on the south side of Cornwall, like Fowey.

The problem with this project that has left it in limbo was the requirement for \$35,000 per tonne Tin price (vis a vis around \$15,000 currently!). In a ten-year project life there would be revenues of £191mn with an NPV of between £58-64mn . While the capex, estimated at £28.5mn (mainly for building the mill and refitting the rented vessel) is not high the insurmountable problem (for the moment) is the Tin price target which is ritzy to say the least. It's still not clear to us why a Tin mill should actually be all that expensive to build. Time to trade in the Rolls Royce for a Volkswagen, methinks.

Conclusion

With 3,000 years of history behind it, Cornwall certainly ranks as a mining region with form. It is somewhat ironic that it was the discovery of the alluvial tin deposits in the Malay peninsula put paid to Cornwall's mining (in the most part) and yet now with alluvial production in Malaysia and Indonesia in steep decline that may actually be the trigger for a revival in the Cornish minefields.

It's clear why South Crofty is the Great White Whale of Tin and therefore why so many have tried (and failed) to harpoon it. What intrigues us more is if there was so much Tin in the region and so many past producing mines (most limited in their depth by primitive pumping equipment in their day and age) then why haven't promoters turned their attention to less well-known mines that may not come with as much hair on them? And these would certainly be available at a lower price. Marine Minerals have thought outside the box but their alternative is still too expensive.

We are believers that there is a Tin supply crunch coming down the pike and that Tin is a metal that is not liberally endowed with deposits around the world that can be turned on at whim. Indeed the opposite is the case with few regions that one can actually call richly stannifereous and these are either in

decline (Malaysia and Indonesia), in difficult jurisdictions (Bolivia, DRC) or in relatively higher cost places like Tasmania and Cornwall. North America is particularly poorly supplied with Tin prospects.

On the Tin treasure map there is a big "X marks the spot" on Cornwall.