

Tungsten Downunder

I was prompted to revisit this theme due to a nifty transaction in recent days that Almonty Industries Inc. (TSXV: AII) managed to pull off. Almonty, of course, is the consolidator in the industry and one of the assets it corralled into its corner in recent years was the Wolfram Camp mine. Now it has folded this mine into a listed Australian company with the effect that it ends up with a majority of the Australian company, the main asset of which is a brand new Ferro-Tungsten plant in Vietnam. Ergo, Almonty moves into the midstream part of the Tungsten space.

When I did my mine-trip to Spain last November there was much talk on site about the the Wolfram camp mine but I did not write it up at the time as production at the Wolfram camp mine is currently on hold pending the completion of the optimization of the milling circuit that is in its final phase of completion. On completion, which is anticipated to be before the end of June 2016, mine production is expected to resume and ramp up to full capacity in a matter of weeks.

The back story here is that Almonty picked this mine from the German “fund” Deutsche Rohstoffe, which I highlighted last year for other reasons. At that time it had already sold out to Almonty and become a large shareholder in Almonty as a result. The mine that the Germans sold is in the state of Queensland and is located approximately 130 kilometres west of Cairns. The points to note on this are:

- Fully permitted open-pit tungsten mining operation
- High-quality mine infrastructure
- Commercial production achieved in November, 2013
- Production of approximately 40,000 metric tonne units of tungsten oxide in 2015
- Four-year mine life with substantial exploration potential

The Latest Deal

Earlier this week Almonty announced it had signed a binding heads of agreement to sell the Wolfram camp mine in Queensland to ATC Alloys Ltd (ASX:ATA), formerly known to Tungsten mavens as Hazelwood until a name change earlier this year. Indeed, one of the reasons this significant deal did not fire up Almonty's price, when it should have, was that many did not know that Hazelwood had changed its name to ATC and thus even people who know the space did not cotton on to the enormity of this combination.

The proposed consideration is 120 million fully paid ordinary shares in ATC at price of five Australian cents per share, or AUD\$6mn, plus the assumption of intercompany debt owed to Almonty by Wolfram Camp Mines.

Following the acquisition, Almonty will become the largest shareholder of ATC with an ownership interest of approximately 53% (based on the issue of the consideration shares) and will be entitled to appoint two members to the board of ATC. Completion of the acquisition is conditional on:

- Completion of due diligence by ATC and Almonty
- Finalization of legal documentation
- ATC shareholder approval
- ATC completing an equity raise of at least AUD\$6mn
- Third party lender approvals
- Other statutory, regulatory and other approvals that may be required by the parties

What is ATC?

In May 2010 Hazelwood acquired a majority interest in Asia Tungsten Products Company Ltd (ATC), which has recently completed the construction of a new ferrotungsten refinery near Vihn Bao in Vietnam. Stage one of the ATC Ferrotungsten Project has a nameplate capacity of approximately 4,000 tonnes of ferrotungsten alloy per annum, equivalent to 3,000 tonnes

of contained tungsten per annum (at 75% minimum tungsten content). This is the largest ferrotungsten plant outside of China and its design is believed to be the most advanced in the world.

The ATC Ferrotungsten Project will initially commence operation as a refining business and it is planned to vertically integrate the refinery with Hazelwood's Australian tungsten projects to decrease the reliance on third party feedstock (tungsten concentrate) and improve product quality.



ATC has signed an exclusive agency agreement with Wogen Resources Limited for the distribution of ferrotungsten worldwide for an initial period of five years. Wogen, which primarily engages in the physical trading of specialty metals and minerals and the processing of metals and alloys, is one of the big names (but scarcely known to the general public) in the specialty metals space.

The combination of the ATC's ferrotungsten plant in Vietnam with the Wolfram camp will create a significant tungsten mining and downstream processing business and potentially have implications for Almonty's Sangdong asset in South Korea. Frankly we can see a path to ATC eventually combining with Almonty at some point.

Carbine Tungsten

This company has become a tungsten concentrate producer in recent times from its flagship project, the Mt Carbine tungsten mine, in far North Queensland. Its goal is to become a producer of tungsten concentrate through its Tailings Retreatment Project which commenced production in 2012 along with the re-awakening of the Hard Rock open-cut mine which is scheduled to commence production in 2016.

Mt Carbine was discovered at the end of the 19th Century, and was a major tungsten producer in the past. The deposit is still relatively unexplored and the company feels that there is potential for new tungsten mineralisation in the Mining Leases and surrounding exploration tenements. When it last operated between 1973 and 1987, the Mt Carbine mine produced exceptionally high grade concentrate, and was in the lowest quartile of cost of production for global tungsten producers.

The Mt Carbine tungsten mineralisation is similar to several other large tungsten deposits around the world, for example some of the deposits in southern China, Spain and southern UK (Hemmerdon), in that it is low grade (the grade of the inferred hard-rock resource at Mt Carbine is 0.14%W₃ at a cut-off of 0.05% W₃). However, at current low prices this ultra-low grade deposits are going to need to wait for a much more robust price for APT (the main traded Tungsten mineral).

Meanwhile the tailings will, wisely, be the focus. It is anticipated production from the tailings will be 50 tonnes of W₃ per month (5,000 metric tonne units or MTUs per month).

We would note that this company should not be confused with Carbine Resources.

King Island Scheelite (ASX:KIS)

One to keep an eye out for is this company that is reviving one of the largest Tungsten mines that ever operated which is located on a island in the strait that separates Tasmania from

the Australian mainland. In recent times the company has been working towards a revised DFS on its project with a view to reopening the mine.

Conclusion

Onwards and upwards, it seems with the recovery of Tungsten mining on the Australian scene. We have looked at the three main players here and this should be enough to keep things bubbling and make Australia an interesting player again without busting the market with an excessive flow of product.

Prices have perked up for the main traded Tungsten mineral (APT) since bottoming in January at \$150. The move in recent weeks has been accelerated.

01 Apr 2016	170	185
08 Apr 2016	175	190
15 Apr 2016	190	200
22 Apr 2016	188	210

It's still a fair way to go until we can say happy days are here again. It's worth noting that we have a rather bullish target price of \$325 per MTU for the end of 2016.

Almonty are certainly, to steal Donald Trump's thunder masters at the "art of the deal". The transaction with ATC is yet another example of this. With Wolfram Camp ready to start producing product for the Vietnamese plant we are seeing here the beginning of the erosion of Chinese dominance (even in Asia) over this highly strategic metal.

The tungsten “brain trust” on the Almonty Los Santos mine tour

In the first week of November, we went to visit the Los Santos mine, one of the largest tungsten reserves in Spain, with a view to seeing current operations and discussing the other activities of the company in Spain, Australia and South Korea. The CEO of Almonty Industries (TSXV:AII), Lewis Black was on site at the time, as were staff that had worked at or visited the company’s other operations around the globe. Interestingly the staff are composed of a strong component of Portuguese mine staff, many of whom are known to the company management since the days when the Almonty team ran Primary Mining, which owned the Panasquiera Tungsten mine in Portugal.



The Los Santos scheelite deposit is in the province of Salamanca in western Spain. It is 180 km west of Madrid, 50 km south of the city of Salamanca. The drive to the mine from Salamanca is an easy one over a double carriageway most of the way through flat to lightly rolling landscape. The area around the actual mine is low hills with a mix of small holdings. The cultivation of pigs is the major industry in the region as the “capital of Jamon Iberico” is a small town nearby where the pigs fed on acorns produce this famous and costly product.

Los Santos (pictured below) is a large village of around 2,000 people. The mine has become quite an important feature of the local economy over the nine years it has been operating. With around 65 contract staff and tens of direct employees, the mine has a significant trickledown effect in such a small community. It is also worth remembering that unemployment in Spain is 25% at this time and has been even higher since 2008

and that in isolated rural areas it can be significantly higher. The company has strong relations with local mayors and councils. It has even established its company “canteen” in the town, rather than out at the minesite. This has effectively doubled the number of eating places in the town!



The mine is one kilometre east of the town of Los Santos and there is a newly paved road to the mine gate.

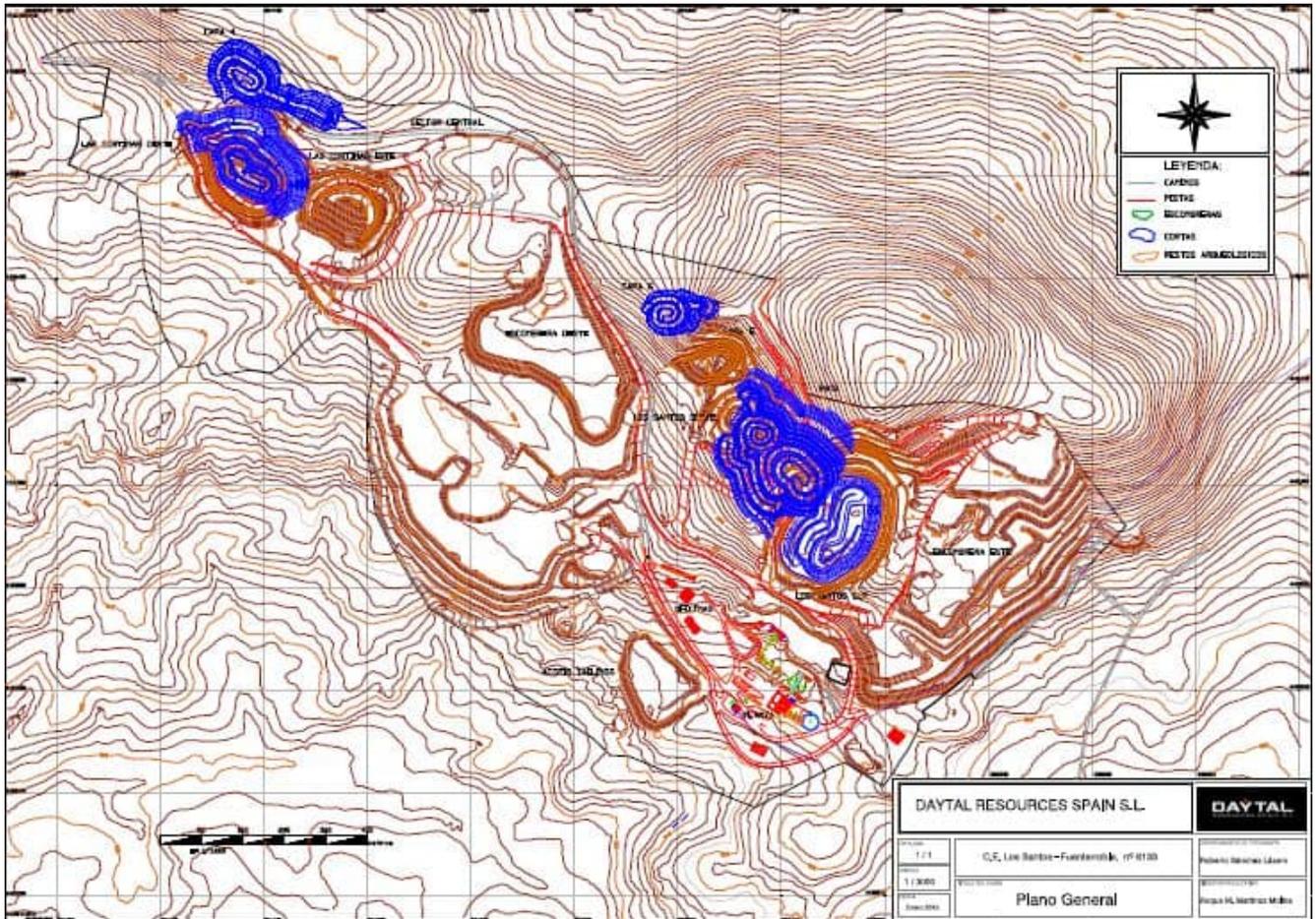
The Los Santos Mine

The Los Santos scheelite deposit was originally investigated by Billiton starting in 1979. Work undertaken included trenching and drilling. In one of the zones, Los Santos Sur, an 825m underground ramp was developed, along with level development at the 950m elevation, which provided bulk samples as well as underground drilling access. The ramp is still visible but has largely been consumed by the pit construction.



Billiton went as far as to carry out a pre-feasibility study of the prospect. By 1985, however, with a prevailing tungsten price of US\$81/mtu, the project was not considered viable.

The project passed to the ownership of the ASX-listed company, Heemskirk. Under this new management the mine build began in 2008 and it was commissioned in July 2010.



The map above shows the minesite. Thus far one of the pits has been fully mined out and refilled. The blue represents the pits currently in production or planned. The two pits to the right (west) that nearly touch are intended to be combined into a sort of “super-pit” (well, not by Kalgoorlie standards) to exploit the mineralisation in the pit wall between the two existing pits.

Mining

The open pit operations are conventional drill and blast operations. The aerial view below shows the main pit with the green structure to the left being the processing plant and the Los Santos South (Main) pit being the bright white patch just right of centre. Towards the town at the top of the photo is a smaller Las Cortinas pit that has been developed over the last few years.



The production mining & drilling operations currently employ 65 people and this task is undertaken by a contractor. All of the other 68 employees on site work directly for Daytal (Almonty's Spanish subsidiary).

For the moment plans for going underground have been discounted (while the price for APT remains where it is). In some ways the need for that strategy has been reduced by making the pits deeper and via the mini "super-pit" implementation.

Processing

The plant is located immediately to the south of the Los Santos Sur pit close to existing mine workings, the main waste dump and other infrastructure. The plant is now processing 500k tpa and is primarily based on gravimetric separation, aimed at recovering a high grade scheelite concentrate, so as to provide a concentrate containing greater than 68% W03.



The image above is our analyst with the plant management inside the processing facility with the rod mill shown below.

Below can be seen scheelite concentrate running off one of the shaking tables under an ultra-violet lamp.



The process plant in the following picture.



Production during the three months ended June 30, 2015 rose 18.75% when compared to the three months ended March 31, 2015. The main plant is currently undergoing a meaningful expansion to debottleneck operations and boost concentrate grade and recoveries. This expansion has been rather rapid only beginning a few weeks ago and expected to be finished before the end of November. The extension is being added to the end of the main building closest to us in the photograph above (which was taken before work began). Below can be seen the frame that was up last week. Cladding is probably already finished by now.



The latest additions will double throughput from the finishing circuit and remove what the company terms the “last bottleneck” in its process. It is expected that the extra pieces of kit to be housed in the extension will hike recoveries from 65% to 69% and boost the W03 content from 63% to 67%. Output will rise from 5 tonnes per day to $5\frac{3}{4}$ tpd (therefore a 15% increase). The additional equipment has enhanced the ability to reprocess the tailings stockpiles.

This added production will come at no increase in staff costs.

Tailings Reprocessing

On another score the company has been considering the issue of tailings recovery as specific areas where tailings have been deposited still contain economic W03 grades. The amount in the dumps is a not insubstantial amount at half the level of the current reserve in the ground.

Los Santos - Dumps @ 0.05% WO3 cutoff

Classification	Tonnes '000	WO3%	Tonnes WO3
Stockpiles	66	0.25%	164
Tailings	1,932	0.16%	3,105
Total	1,998		3,269

Almonty tested reprocessing the tailings stockpile by blending tailings with fresh ore during Q1 2014. Bulk testing of 100% tailings ore was run through the plant at Los Santos without any additional modifications. Recovery rates achieved exceeded expectations and management believes that target recovery rates for tailings reprocessing will be achieved when the tailings stockpiles are eventually reprocessed.

Conclusion

Los Santos is clearly the milch-cow that feeds the rest of the Almonty empire. With its reserve, its stockpiles, its tailings to rework and the planned mini- "super-pit", it should have another four years mine-life at least. Wolfram Camp's turnaround has essentially been funded by Los Santos as has the Valtreixal mine plan. Planning is already advanced for Valtreixal to pick up the slack and use equipment and personnel from Los Santos as it becomes available. Then there is the Sangdong mine which really awaits a price turnaround to fire up its motors.

Almonty's management team, last decade, managed to get one Tungsten producer (Primary Metals) off the ground and now they are on their second go-around. This time they are not building to sell it but rather putting together a long-term producer and creating that hitherto elusive investment opportunity, a geographically diversified multi-mine Tungsten player. As they say, seeing is believing and certainly the mine trip brought home that Almonty is a tightly run operation with somewhat of a dream team in having corralled a goodly proportion of the Western World's Tungsten "brain's trust" into its employee

ranks.