

## **“There’s Gold in Them There .....Stars!”**

This may be a play on a quote to encourage the original gold rush miners in Georgia in the 19<sup>th</sup> century not to head off for the gold mining opportunities in California, but there is definitely some truth in it with the latest developments in the industry looking to the stars to source untapped resources. So says Lucy Donald, a Director of WRS, a recruitment company that supports the global mining sector. Here she gives her thoughts on recent media coverage on asteroid mining and reflects on what those in the industry should consider if they want to jump on this intergalactic band wagon when the opportunity arises.

It's well documented that parts of meteorites that survive and fall to earth after asteroids disintegrate in the atmosphere yield significant amounts of gold as well as many other precious metals too, like platinum, rhodium, iridium, rhenium, osmium, ruthenium, palladium and germanium. Studies based on observation and meteorites suggest space is even richer in iron ore, while Wall Street research firm, Bernstein, notes that an asteroid measuring some 200km across, located between Mars and Jupiter, may contain 17 million billion tonnes of nickel-iron - enough to satisfy mankind's current demand for millions of years.

But costs and technical hurdles rule out hauling resources down to Earth in the foreseeable future, experts say, so is Asteroid Mining the next big trend for the industry?

One such company that thinks so is Planetary Resources, a US based organisation, who believe using resources mined from the nearly limitless number of asteroids in the galaxy will serve as a source of scarce minerals for earth. They also claim that many of the issues facing earth mining aren't as problematic in space - there are no natural disasters or inclement weather to cope with, no oxidization to battle and plenty of solar energy. Too far-fetched perhaps? Well this company are not alone in their quest to be at the forefront of this pioneering mining activity as another US based organisation, Deep Space Industries, are also well underway with development too.

Lucy comments: “I read that Planetary Resources received over 2,000 applications in April this year, although they only currently have two dozen engineers as they are dramatically trying to keep the costs down, given how expensive the actual technology will be. I expect that most of their investment will go into research, technology and logistics initially rather than personnel, although they even suggested that they will be targeting 2012 university students, so perhaps they will be looking for organic growth rather than making costly external hiring's with more experienced professionals with robotics experience.”

Within three years, both Planetary Resources and DSI plan prospecting missions to passing asteroids. When even a modest asteroid might meet demand for metals like platinum or gold for centuries, and with Nasa too having a project that may put astronauts on an asteroid in under a decade, it is little wonder they both hope to turn asteroid mining into the next big thing for the industry within the 21<sup>st</sup> century. Planetary Resources plans to send telescopes into space to study asteroids between Earth and the Moon, with a later phase sending craft carrying deep-space lasers to gather data on some of the thousands of more distant asteroids. As for DSI, as early as 2016, the first of their exploration satellites will be launched to start scouting for suitable rocks and a year later, larger craft would begin two-to-three year missions to land and take samples for analysis. Most dramatic of all, the company sees a "harvester" craft heading out in 2019 to capture and divert the most promising asteroids so that they settle into orbit around Earth by 2021.

With the first phase estimate for DSI at some US\$20m, these new ventures have backing from some extremely wealthy investors, including government and research institute contracts as well as corporate advertising and sponsorship.

Lucy predicts some high salaries and great opportunities to be in at the start as certain skill sets become required when these projects develop, “Inevitably this new focus for the Mining sector will lead to a very niche skill set whereby demand for such professionals will become increasingly great as more and more companies attempt to replicate what Planetary Resources and DSI are doing. I would not say in the short term, but certainly in the long term, this particular sector could exceed the salaries in sectors such as Oil & Gas and Banking, especially with billionaire investors like Google executives and Film Director James Cameron on board.”

In summary, there may be gold up there, but the draw for now is water for investors willing to get the new industry off the ground, as the real value in asteroid mining is for further space travel. So, the priority is to source hydrogen and oxygen, which are locked in compounds on asteroids, to refuel rockets – making them as attractive as any precious metal.