

Zenyatta's Vein Graphite challenges Synthetic on Purity and Production Costs

✘ During the week of December 3, a rather unstable week in the markets, shares of Zenyatta Ventures ('Zenyatta', TSX.V: ZEN) shares were rather strong, rising slightly from market opening on December 3 to market closing on December 7. Graphite has been the object of much attention over the past year thanks to advancements in battery technology and growing interest in graphene, the wonder material of the decade thanks to its multiple applications and potential in the advancement of battery technology and strength enhancing qualities in structural materials. However, as exciting and numerous the technological applications are, the graphite required to achieve the high technological goals must present very high purity. So far, high purity (+99% purity or higher) applications resort to using synthetic graphite, the market for which is over six times larger than natural graphite. However, synthetic graphite is very expensive to produce, deriving from petroleum coke and costing up to 10 times as much as the best natural graphite.

Manufacturers of batteries and other sensitive technology have stressed the importance of purity and natural graphite, capable of being converted to high grades, is hard to find; on average the highest natural grades are in the 94% range, which can then be improved toward the 99% through additional processing. Nevertheless, Mother Nature can sometimes be very cooperative; the Zenyatta owned Albany property has so far yielded vein or Sri Lankan type graphite, featuring remarkable purity levels for rough concentrates at 97.2%. With such a high starting point, Zenyatta is confident that it will be able to raise the purity level to over 99% – or synthetic purity standards – after the process is optimized. The higher

the graphite purity levels the higher the price it can command in the markets. At 99% or above, Zenyatta will be able to charge several times more than the typical USD\$ 500-2000 range for natural flake graphite. Vein or 'Sri Lankan' variety graphite makes all the difference and Zenyatta's graphite resource is the one, which most closely compares to this when compared to some of the other emerging graphite plays.

Sri Lankan or Ceylon graphite is so named from its first noted occurrence at the Bogala Mine, in Sri Lanka, first produced in 1847. Deposits of Sri Lankan graphite can yield as much as 99.5% purity. This makes it ideal for use in a number of high value added applications such as high quality electrical motor brushes (electric motors seeing a surge of demand due to the growing popularity of fully electric vehicles), in advanced brake and clutch components and any other application that can also use flake graphite. Vein graphite is also the type used in pebble-bed nuclear reactors. Lower quality, amorphous graphite can cost three times less; moreover, natural graphite, even at such high grades as could be achieved by Zenyatta, is much cheaper, and environmentally responsible, to process than synthetic graphite. Zenyatta has been working with SGS Lakefield (a provider of metallurgical and environmental expertise) to devise a commercially viable process able to deliver consistently high grades of graphite.

Not surprisingly, investors have become increasingly interested in Zenyatta and the share price has risen steadily over the past few months.