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**ASX Symbol**

MRF, MRFOA

# MRL doubles Sri Lankan graphite licence holdings

*New licence provides feedstock for MRL's strategy to grow  
production of vein graphite over the next 2-3 years*

MRL Corporation (ASX: MRF) is pleased to advise it has secured a major new exploration licence covering 7,600ha in highly-prospective graphite provinces of Sri Lanka.

This licence, which adds to the Company's existing 6,300ha of Sri Lankan exploration licences, is in the Warakapola region which hosts MRL's advanced Pandeniya graphite project.

As with MRL's other exploration licences, this new licence has been granted for two years with a further five renewals of 2 years each available.

MRL is preparing for the start of high-grade graphite production in the March quarter of next year. It will be one of the highest-grade graphite producers in the world.

MRL is also pleased to announce pilot plant testing has commenced at the University of Adelaide to determine the optimum route for extracting premium-priced graphene from the Company's graphite.

Previous test work on MRL's graphite found it to be highly suitable for producing premium-priced graphene. The first University of Adelaide tests found the quality of the prepared graphene from MRL's graphite was outstanding and comparable with the quality of graphene prepared by synthetic routes.

They showed that MRL's graphite has very high crystalline carbon content not observed in any other previously tested graphite materials.

With an exfoliation process time of only 10 minutes, 50% of graphite is exfoliated and gave a graphene yield of >90%.

### About MRL Corporation Ltd (ASX: MRF)

MRL is aiming to develop an underground mining operation to extract high-grade, crystalline vein graphite, which is unique to Sri Lanka. The Company holds exclusive rights to exploration licenses covering approximately 6,300 hectares in area, with historical workings located within nearly all license grids.

### About Graphene

Graphene, the well-publicised and now famous two-dimensional carbon allotrope, is as versatile a material as any discovered on Earth. Its amazing properties as the lightest and strongest material, compared with its ability to conduct heat and electricity better than anything else, mean it can be integrated into a huge number of applications. Initially this will mean graphene is used to help improve the performance and efficiency of current materials and substances, but in the future it will also be developed in conjunction with other two-dimensional (2D) crystals to create some even more amazing compounds to suit an even wider range of applications.

One area of research which is being very highly studied is energy storage. Currently, scientists are working on enhancing the capabilities of lithium ion batteries (by incorporating graphene as an anode) to offer much higher storage capacities with much better longevity and charge rate. Also, graphene is being studied and developed to be used in the manufacture of supercapacitors which are able to be charged very quickly, yet also be able to store a large amount of electricity.

### Nature of vein graphite

Sri Lankan graphite deposition model is best described from the 'bottom up': tension fractures formed in the metamorphic sediments, caused by the folding of the sediments, creating 'conduits' for the hydrothermal deposition of high quality vein graphite. Historically, mining of these veins has found the veins generally increase in thickness and grade quality with increasing depth. Graphite veins generally dip steeply at  $-70^{\circ}$  to near vertical, enabling 'narrow vein' extraction mining techniques similar to those used on narrow vein, high-grade gold deposits. The method commonly used is an overhead retreat stoping technique where the high-grade vein graphite is mined and hauled to surface without contamination. The graphite selvages, in contact with the surrounding waste, is hauled to surface and stockpiled for upgrading. The balance of the waste is used to fill the floor of the stope.

Due to the nature of the vein graphite, it is anticipated vein widths of  $\sim 25\text{cm}$ , using narrow vein mining techniques can be economically extracted from underground operations.

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