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**ASX Symbol**

FGR, FGROA, FGROB

## Completion of successful DHTEM survey and Operational Update

*First survey of its kind conducted in Sri Lanka*

First Graphite (ASX: FGR) is pleased to report on the completion of downhole electromagnetic (DHTEM) surveys at its Aluketiya and Pandeniya projects.

### Highlights

- Confirmation of extent of graphite mineralisation observed in geological logging
- Identification of potential graphite mineralisation not intersected by previous drilling
- Off hole anomalies in ALK11 and ALK28 show further potential mineralisation close to Aluketiya's Shaft H
- Proof of concept with the first ever use of DHTEM in Sri Lanka
- Mine shafts at Aluketiya and Pandeniya progressing

### DHTEM

Graphite is an excellent conductor of electricity, a property which makes it highly amenable to exploration using electrical techniques. Surface and airborne electromagnetic techniques have been used previously by FGR and other companies to search for graphite in Sri Lanka. The limitation of these techniques is that while presence of graphite can be determined, DHTEM can predict the location of veins in three dimensions.

GEM geophysics provided the field data acquisition services and Southern Geoscience provided the survey planning and data interpretation for the surveys conducted in August 2016.

## Aluketiya

Eight diamond drill holes, that have been drilled by FGR over the previous 12 months, were surveyed. Table 1 below summarises the observed graphite mineralisation in all of the holes.

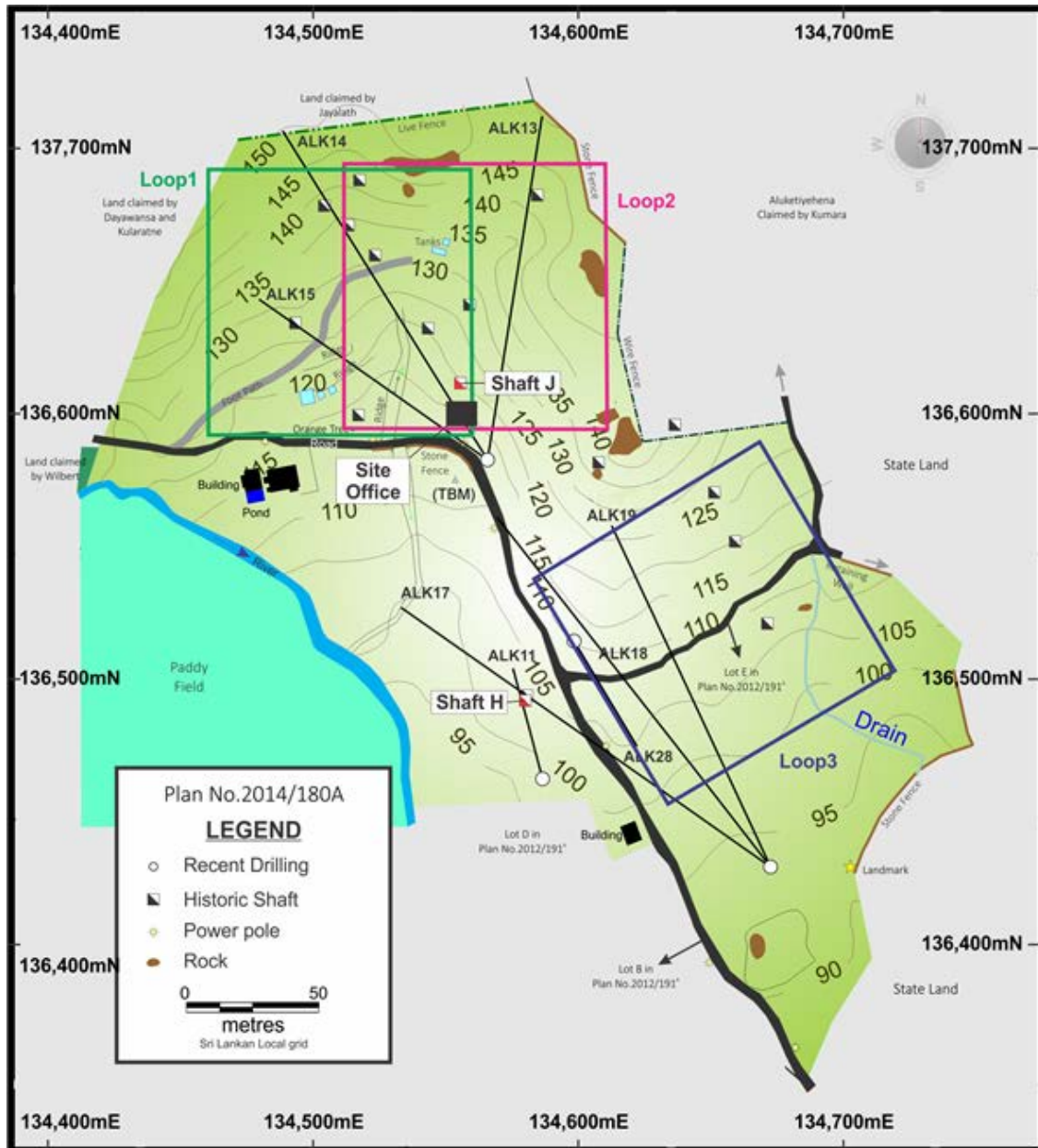


Figure 1: Showing the Aluketiya project with drill hole traces and transmitter loop locations

Hole ID	E_SLK	N_SLK	E_Local	N_Local	rL_Local	Dip	Azimuth	Depth	Depth From	Depth To	Comment
ALK11	134590	136462	2030.4	1875.2	97	55	345	75	48.55 48.80 49.29	48.70 49.10 49.43	15 cm vein 30 cm vein 14 cm vein
ALK13	134561	136574	2009.7	1995.4	115	45	9	185.2	23.10 23.72 25.65 46.33	23.36 23.88 25.90 46.73	26 cm vein 16 cm vein 25 cm vein 40 cm vein
ALK14	134561	136574	2009.7	1995.4	115	45	328	206.5			No significant intersection observed
ALK15	134561	136574	2009.7	1995.4	115	45	305	149	34.65 34.76 75.78 77.14 78.64	34.70 34.85 75.98 77.23 79.04	5 cm vein 9 cm vein 20 cm vein 9 cm vein 40 cm vein
ALK17	134673	136424	2116.4	1842.1	94.5	45	305	240.8	100.78 101.41 101.41 102.70 102.70 108.56 208.94	100.84 101.41 5 102.70 5 108.57 208.94 4	6 cm vein .05 cm vein .05 cm vein 1 cm vein .04 cm vein
ALK18	134673	136424	2116.4	1842.1	94.5	45	322	237.2	116.68 117.31 118.34	116.82 117.65 119.49	15 cm vein 34 cm vein 115 cm vein
ALK19	134673	136424	2116.4	1842.1	94.5	45	335	200.5			No significant intersection observed
ALK28	134592	136497	2042.2	1927.1	108.3	45	149	135.4	26.55	26.85	30 cm vein

Table 1: Aluketiya Drill Results

The results of the DHTM for drill holes ALK11, ALK17, ALK18, ALK19 and ALK28 are depicted in Figure 2 which shows the orientation of the conductors in both plan view and section view.

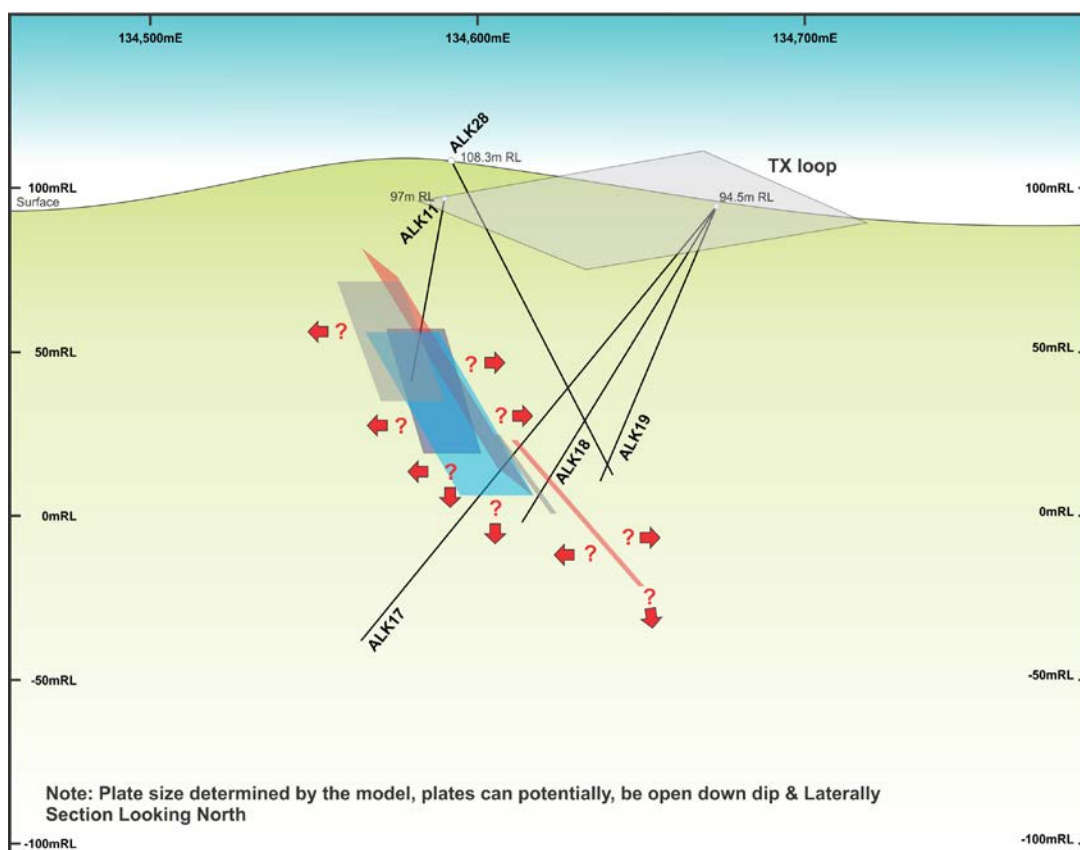


Figure 2: Plan and Section Views DHTeM ALK 11, 17, 18, 19 and 28

The results of the DHTeM for drill holes ALK13, ALK14 and ALK15 are depicted in Figure 3 which shows the orientation of the conductors in both plan view and section view.

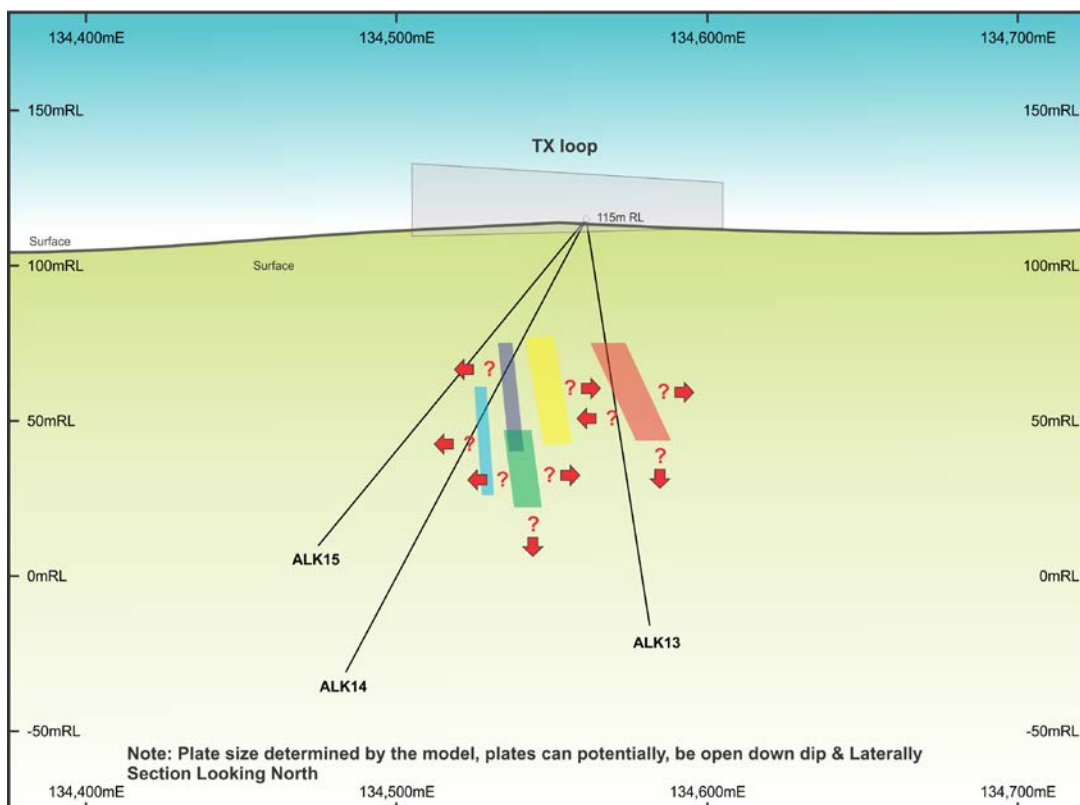


Figure 3: Plan and Section Views DHTeM ALK 13, 14 and 15

## Pandeniya

At the Pandeniya project three holes drilled by MRL in 2014 were surveyed using DHTeM. Figure 4 shows the location of the holes and the transmitter loop.

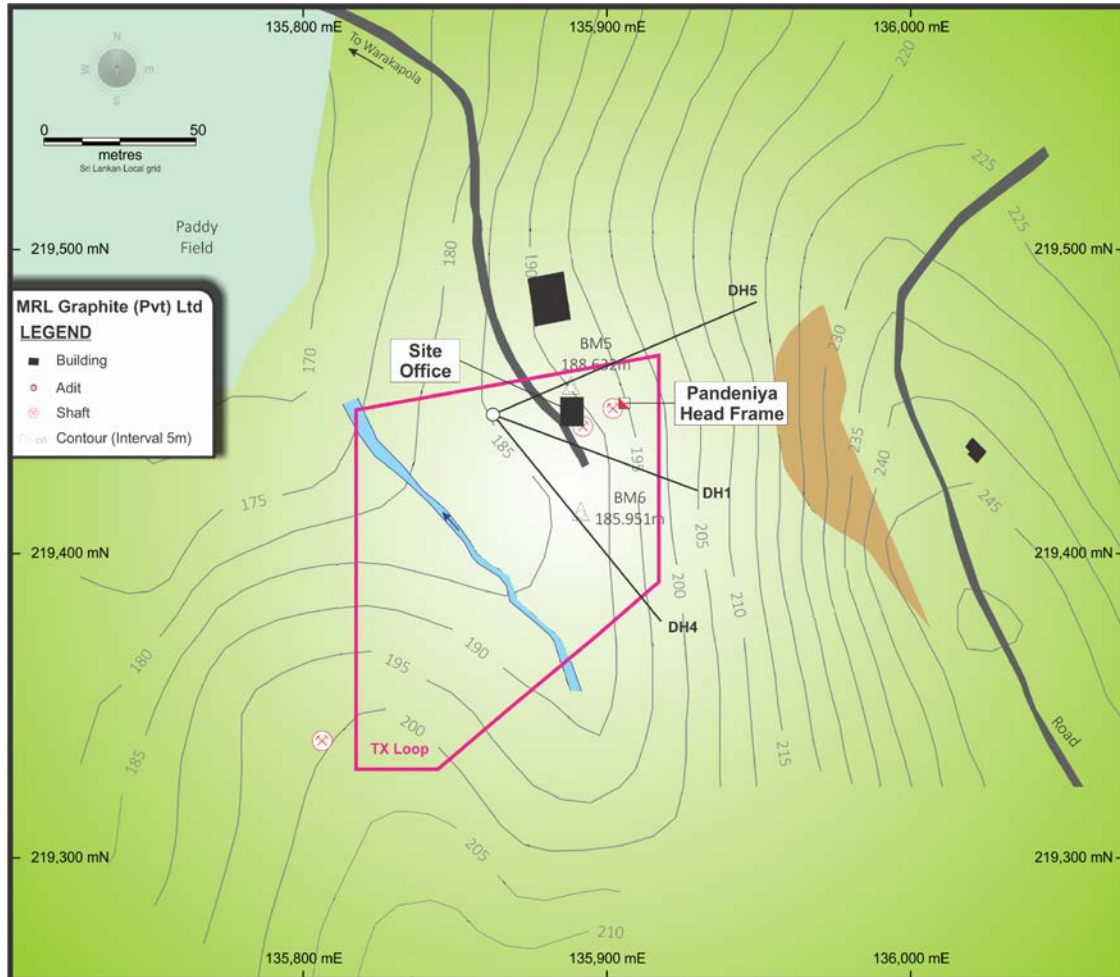


Figure 4: Previous drill holes and transmitter loop

Table 2 summarises the observed graphite mineralisation in each of the holes.

Hole ID	E_SLK	N_SLK	E_Local	N_Local	r_Local	Dip	Azimuth	Depth	Depth From	Depth To	Comment
DH1	135860	219445	4782.5	5164.0	189	55	109	125	91.62 97.00	92.31 97.94	69 cm vein 94 cm vein
DH4	135860	219445	4780.5	5162.5	189	50	140	134	30.59 35.78 38.05 38.68	30.595 35.785 38.055 38.685	.05 cm vein .05 cm vein .05 cm vein .05 cm vein
DH5	135860	219445	4782.5 0	5165.0	189	48	67	141	58.14 70.55 71.61 72.82 75.92	58.145 70.553 71.612 72.84 75.935	.05 cm vein .03 cm vein .02 cm vein 2 cm vein 1.5 cm vein

Table 2: Pandeniya Drill Results

Figure 5 below shows a plan view and a section view (looking north) of the modelled conductors relative to the drill holes.

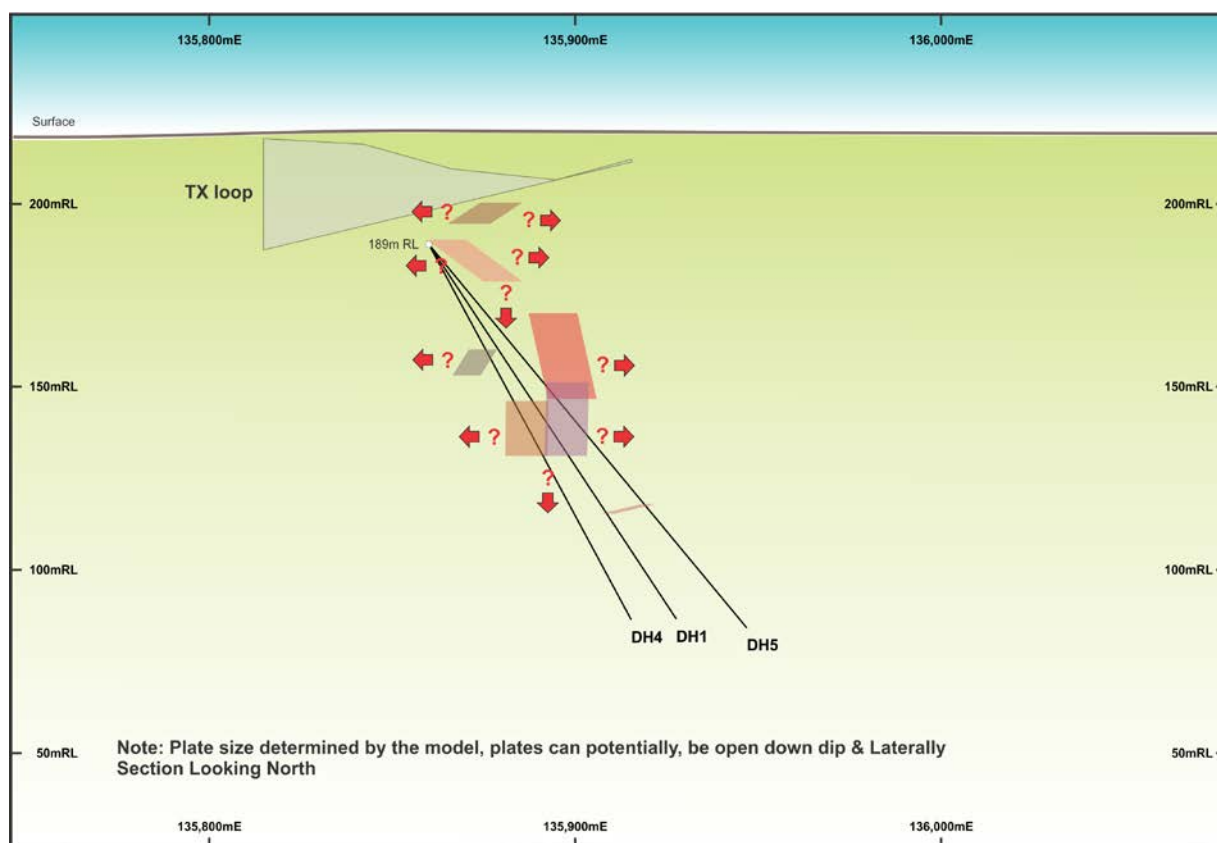


Figure 5: Plan and section view DH1, 4 and 5

As with Aluketiya the DHTM shows the presence of plates within the drill hole confirming the observed graphite mineralisation as well as the presence of conductors not intersected by the drilling.

## Future work

The DHTM survey reveals that due to the abundance of off hole anomalies there is more prospective graphite than initial drilling had identified. First Graphite will progressively confirm this with infill drilling targeting these anomalies and adjust the mine development plans as required to effectively set mining areas up for long term extraction. This may alter the timing of initial production however it will potentially provide the company with a longer term higher production rate from each shaft.

The off hole anomalies in ALK11 and ALK28 show there is further potential mineralisation close to Shaft H and to this end FGR has arranged for the diamond drill to work extended hours during the next month to provide this information to the mining engineering team as quickly as possible.

## Operational Update

### Pandeniya

As planned shaft rehabilitation at Pandeniya has successfully been completed to a depth of 30 metres to the shaft floor. At the bottom of the shaft a further 39 metres of horizontal drives/offset shafts were encountered, these workings were not anticipated in the initial mine plan however have been cleaned out and mapped where safe to do so.



Figure 6: South Winze and lower Historical workings

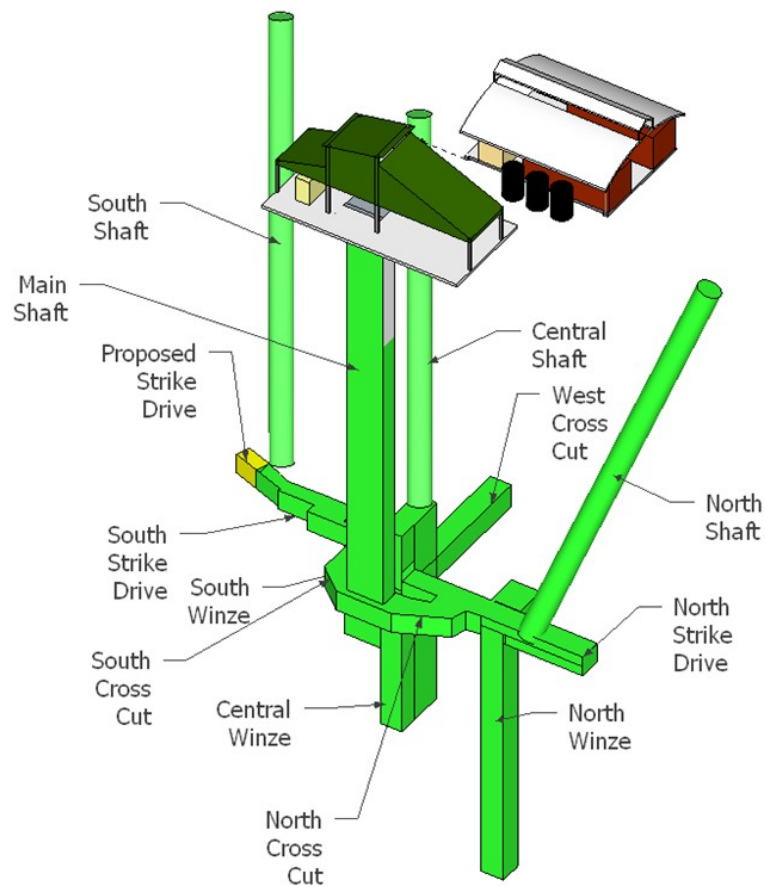


Figure 7: Schematic of Pandeniya mining development

Following cleanout and examination of these drives three older shafts were also found together with clear evidence of graphite vein stoping. The age and unstable condition of these old workings made them unsuitable for current use as it was considered to be unsafe for the Company's miners to use as a primary access.

These facts, together with the additional information supplied from the DHTM, led to a change to the mine plan and the existing shaft is now being sunk a further 15 metres to gain access to the structures identified by the DHTM and previous diamond drilling below the previously mined areas. To date the shaft has been advanced to 34 metres below the shaft collar.





Figure 8: Initial Blast to deepen Pandeniya main shaft to 45m

Final approvals were recently received from CEA (Central Environment Authority) to obtain the required blasting license for Pandeniya. The time to obtain the Blasting License was longer than anticipated as the application could not occur until the Industrial Mining License was awarded. External blasting contractors have been used in the interim however productivity is expected to improve dramatically now the license has been awarded and FGR will have full autonomy with our blasting activities.

### Aluketiya

At Aluketiya Shaft H has been sunk to a depth of 19 metres. Between 12 and 15 metres a historical underground stope was encountered which caused significant delays to the shaft sinking efforts. During this activity the shaft liners hung up and in the process of freeing up the liners damage was done to three of the smaller concrete liners. This has now been remedied and shaft sinking re-commenced. The mine plan calls for the shaft to be sunk between 28 and 35 metres depth, depending on the ground conditions below the weathered and fresh rock interface. Mineralisation encountered in drill hole ALK11 is expected to be intersected while completing the Shaft H installation, this is supported by the stoping experienced in the unconsolidated material to date. A second target will be drilled up dip from the large intersection on ALK18 to assist in the mine planning to access that structure from Shaft H and this will require a development drive of approx. 30m.

Shaft J's head frame has been erected and the Company will commence the installation of the support equipment such as hoists, generators and compressors.

Amended mine plans will enable a longer term sustainable production and maximise the extraction of the ultra high grade (99.27% TGC) vein intersections as intersected in ALK18. With the additional prospectivity shown from the DHTM it would have been unwise and short sighted not to have amended the initial plans.

This delay will not impact on the Company's growth plans for its graphene production as adequate quantities of third party material have been sourced while the Company transforms towards being a vertically integrated supplier of high grade graphite and large volume high specification quality graphene.

### Central Hub Construction

FGR has commenced construction of a 600m<sup>2</sup> warehouse located at Warakapola to provide processing, maintenance and field office facilities for its surrounding mining and exploration activities. This Hub is a major step to ensure a cohesive approach for field and engineering support as production commences.

Earthworks have been completed, engineered footings will be completed this week with erection of the warehouse to commence immediately thereafter.



Figure 9: Site works commencing at the Warakapola hub

### *About First Graphite Ltd (ASX: FGR)*

*First Graphite 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 39,500 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 ~25cm, using narrow vein mining techniques can be economically extracted from underground operations.*

For further information:

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Information in this report relating to Metallurgical interpretation, analysis, mineral distribution and recommendations has been compiled by Mr Chris Banasik, MAusIMM in consultation with Dr Slobodanka Vukcevic, Senior Metallurgist at Nagrom the Mineral Processors. Dr Slobodanka Vukcevic has sufficient experience and expertise relevant to this type of test work through her job experience and expertise and qualifies as a competent person in the field of metallurgy.

Information in this report relating to Exploration Results is based on information compiled by Mr Chris Banasik, MAusIMM working in consultation with MRL's Senior Sri Lankan Geologist who has 35 years of vein graphite experience in Sri Lanka. Their experience is relevant to the type of deposit under consideration. Mr Banasik is signing as competent person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Banasik consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.

### JORC TABLE 1 Report for Exploration Locations

#### Section 1 Sampling Techniques and Data

<i>Criteria</i>	<i>Explanation</i>
Sampling techniques	<ul style="list-style-type: none"> <li>Diamond core is collected and stored in core trays of 5m per tray. Vein graphite is readily identified visually (black in colour) and intersections recorded accordingly. Intersections will then be cut under the supervision of MRL's Senior Sri Lankan Geologist and prepared for transport to Nagrom (Australia) for analysis.</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <li>All future drilling will be undertaken utilising NQ Triple Tube (NQTT) drilling.</li> </ul>
Drill sample recovery	<ul style="list-style-type: none"> <li>Diamond core recovery is recorded between core runs by the geological crew in the Core Logging Record. The unconsolidated surface material will be drilled using rotary wash method until competent material is intersected</li> </ul>
Logging	<ul style="list-style-type: none"> <li>All holes are logged on site by MRL geological personnel under the supervision of MRL's Senior Sri Lankan Geologist, using MRL's Core Logging Procedure Manual.</li> <li>Logging will record geological and geotechnical observations, and is undertaken on a continual basis throughout the entire drill hole.</li> </ul>
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> <li>Half-core intersections of Vein Graphite will be submitted for analysis to Nagrom laboratories in Perth Western Australia. The remaining half-core is stored in the core boxes. Core &amp; bulk samples may be provided to potential off-take parties.</li> </ul>
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> <li>All Vein Graphite core intersections will be analysed by Nagrom the Mineral Processors in Perth Western Australia. Nagrom will follow industry practice QA/QC procedures to ensure high quality sample assurance.</li> <li>Certified Sample Standards will be inserted routinely into sample analysis.</li> </ul>
Verification of sampling and assaying	<ul style="list-style-type: none"> <li>All diamond core will be logged and photographed by MRL geologists under the supervision of MRL's Senior Sri Lankan Geologist. Independent consulting geologist will visit the MRL operation sites on a regular basis to oversee QA.</li> </ul>
Location of data points	<ul style="list-style-type: none"> <li>All drill locations have been positioned using hand-held Garmin GPS systems. MRL has completed a full topographical survey of the Pandeniya – Bopitiya &amp; Aluketiya areas. All drill collars will be geo-referenced to the Sri Lankan Transverse Mercator Projection.</li> </ul>
Data spacing and distribution	<ul style="list-style-type: none"> <li>Drill holes have been orientated in a position to intersect the expected vein mineralisation (based on historical shafts / adits and geophysical information) at the optimal angle for evaluation, whilst minimising surface land disturbance.</li> </ul>
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> <li>Diamond Core Drill holes are designed to intersect potential graphite vein mineralisation perpendicular to strike, wherever possible, whilst taking into account expected deviation in dip and azimuth.</li> </ul>
Sample security	<ul style="list-style-type: none"> <li>Core Samples are collected and stored in core trays under the supervision of MRL geological crews and then transported at the end of each day, and secured in a locked container at the MRL site facility for further detailed logging. Security is managed by MRL's Senior Sri Lankan Geologist and the MRL country General Manager.</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>A review was undertaken by the consulting Geologist of all procedures, including retrieving of core samples from the core tube, through to logging and storage of core</li> </ul>

Criteria	Explanation
	samples, during drilling activities. Consulting Geologist will undertake further reviews into the future.

### Section 2 Reporting of Exploration Results

Criteria	Explanation																																																																
Mineral tenement and land tenure status	<p>The Warakapola / Bopitiya / Pandeniya project exploration license areas are 100% owned by MRL Graphite (Pvt) Ltd. The exploration Licenses when granted have a two-year term which can be renewed prior to the two-year anniversary.</p> <table border="1" data-bbox="528 555 1399 658"> <thead> <tr> <th>License No.</th> <th>MRL Interest</th> <th>Status</th> <th>General Location</th> </tr> </thead> <tbody> <tr> <td>IML/A/HO/8416/LR2</td> <td>100%</td> <td>Granted</td> <td>Western</td> </tr> <tr> <td>IML/A/HO/9405</td> <td>100%</td> <td>Granted</td> <td>Central</td> </tr> </tbody> </table> <table border="1" data-bbox="550 705 1377 1149"> <tbody> <tr><td>EL/225</td><td>100%</td><td>Granted</td><td>Central</td></tr> <tr><td>EL/226</td><td>100%</td><td>Granted</td><td>Central</td></tr> <tr><td>EL/228</td><td>100%</td><td>Granted</td><td>Central</td></tr> <tr><td>EL/243</td><td>100%</td><td>Granted</td><td>Central</td></tr> <tr><td>EL/262</td><td>100%</td><td>Granted</td><td>Central</td></tr> <tr><td>EL/318</td><td>100%</td><td>Granted</td><td>Central</td></tr> <tr><td>EL/321</td><td>100%</td><td>Granted</td><td>Central</td></tr> <tr><td>EL/325</td><td>100%</td><td>Granted</td><td>Central</td></tr> <tr><td>EL/326</td><td>100%</td><td>Granted</td><td>Central</td></tr> <tr><td>EL/227</td><td>100%</td><td>Granted</td><td>South Central</td></tr> <tr><td>EL/322</td><td>100%</td><td>Granted</td><td>South Central</td></tr> <tr><td>EL231</td><td>100%</td><td>Granted</td><td>South West</td></tr> <tr><td>EL/244</td><td>100%</td><td>Granted</td><td>South West</td></tr> </tbody> </table> <ul style="list-style-type: none"> <li>First Graphite Ltd has informed the Consulting Geologist all granted licenses are in good standing and comply with the reporting requirements of the exploration licence.</li> </ul>	License No.	MRL Interest	Status	General Location	IML/A/HO/8416/LR2	100%	Granted	Western	IML/A/HO/9405	100%	Granted	Central	EL/225	100%	Granted	Central	EL/226	100%	Granted	Central	EL/228	100%	Granted	Central	EL/243	100%	Granted	Central	EL/262	100%	Granted	Central	EL/318	100%	Granted	Central	EL/321	100%	Granted	Central	EL/325	100%	Granted	Central	EL/326	100%	Granted	Central	EL/227	100%	Granted	South Central	EL/322	100%	Granted	South Central	EL231	100%	Granted	South West	EL/244	100%	Granted	South West
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Exploration done by other parties	<ul style="list-style-type: none"> <li>Initial Exploration and Review of the Warakapola / Bopitiya / Pandeniya project was carried out by Geological Survey and Mines Bureau (GSMB) Technical Services (Pvt) Ltd with reports provided to MRL. MRL has established a regional office in the EL228 area to support the company geologists and underground exploration crews.</li> <li>Historical mining has taken place with several shafts and adits evident.</li> <li>MRL continues exploration in all license areas</li> </ul>																																																																
Geology	<ul style="list-style-type: none"> <li>Warakapola / Bopitiya / Pandeniya / Aluketiya</li> <li>Geologically, the area covered by the selected grid units belong to the Wannu Complex of Sri Lanka. The Wannu Complex is mainly characterised by thick sequences of orthogneisses, comprising amphibolite, migmatitic, granitic and granodioritic gneisses. These rocks represent a series of antiformal and synformal structures. A characteristic feature of the exploration area is the alignment of identified abandoned graphite mines / pits within a NNW-SSE trending corridor. (GSMB 2013)</li> </ul>																																																																
Drill hole Information	<ul style="list-style-type: none"> <li>All Diamond Core Drill holes are planned to be accurately surveyed for dip and azimuth using a GlobalTech Pathfinder multi-shot, electronic, down-hole survey tool.</li> </ul>																																																																
Data aggregation methods	<ul style="list-style-type: none"> <li>Intersections of diamond core containing vein graphite will be visually selected for analytical testing with accurate lengths recorded to ensure 100% of mineralisation is analysed and reported.</li> </ul>																																																																
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> <li>Planned Drill hole orientation is based on observations from historical shafts / adits and geophysics, and planned to intersect any vein graphite mineralisation as close to perpendicular as practical.</li> </ul>																																																																
Diagrams	<ul style="list-style-type: none"> <li>NA</li> </ul>																																																																

Balanced reporting	<ul style="list-style-type: none"><li>• First Graphite Ltd will endeavour to produce balanced reports accurately detailing the results from any exploration activities.</li></ul>
Other substantive exploration data	<ul style="list-style-type: none"><li>• No other substantive exploration data is available at this time.</li></ul>
Further work	<ul style="list-style-type: none"><li>• First Graphite Ltd continues to complete further site investigations on all licenses. Following the completion of progressive site investigations and evaluation the next phase of exploration for each location will be undertaken and reported.</li><li>• Land access agreements continue at Pujapitiya, Dedigama and Hikkaduwa</li><li>• Further drilling is planned at Aluketiya, Pujapitiya and other license areas as land access is obtained.</li></ul>