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# SUGARLOAF GRAPHITE METALLURGY UPDATE, EYRE PENINSULA, SOUTH AUSTRALIA

**ASX RELEASE** 

16 December 2022



Top of Sugarloaf Hill, historic graphite mine shaft

#### SUMMARY

- Sugarloaf Graphite re-classified as a micro-crystalline flake graphite
- Average flake size varies from 11µm to 30µm based on scanning electron microscope and petrological analysis
- Opens the pathway to produce a premium battery anode material using an optimal micro-crystalline flake size
- Next steps for Q1 2023
  - Working with our partners ANZAPLAN, in Germany, to develop a flow sheet to produce a high-grade concentrate with economic recoveries
  - If successful, undertake further optimisation, purification and spheroidisation test work
  - Undertake a 2,000m reverse circulation drilling program to test the extents of graphite mineralisation at the Sugarloaf Prospect
- Sugarloaf has a Graphite Exploration Target of 158 264 Mt @ 7 -12 % TGC

"With these positive initial metallurgical results, the Sugarloaf Graphite Exploration Target has the potential to add significant resources to the Campoona Graphite Project. Having been previously overlooked in the past due to its fine flake size, iTech believes it has potential as a source of graphite for the anodes of lithium-ion batteries in which fine flake size is a desirable characteristic"

- Managing Director Mike Schwarz

Investors should be aware that the potential quantity and grade of the Exploration Target reported are conceptual in nature, there has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource.

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Figure 1. Location of iTech's Graphite Deposits and Prospects - Eyre Peninsula, South Australia

#### **Sugarloaf Graphite Prospect**

The Sugarloaf Graphite Prospect is located approximately 30 km north-west of Cleve on the central Eyre Peninsula and is directly adjacent to iTech Minerals Ltd's (ASX: **ITM**, **iTech** or **Company**) proposed graphite processing plant for the Campoona Spherical Graphite Project. The graphite at this location occurs within the Paleoproterozoic Hutchison Group Metasediments and is likely to have formed from organic rich stratigraphic horizons metamorphosed during regional upper greenschist to lower amphibolite facies metamorphism during the Kimban Orogeny. The graphite rich horizon forms a largely flat lying, shallow anticlinal structure as interpreted from drilling and detailed airborne and ground-based electromagnetics.

#### Historical interpretations of the Sugarloaf Graphite Prospect

Archer Materials explored the Sugarloaf Graphite Prospect between 2008 and 2014. The project was initially investigated as a potential source of high-value coarse flake graphite for use in the more traditional foundry, refractory and steel making industries. However, due to its fine flake size, the prospect was not deemed to be of high enough value to progress. It should be noted that, at this time, the value of fine to microcrystalline flake graphite as a source for battery anode material had not been well understood. The prospect was then investigated as a carbon-based soil conditioner/fertiliser based on a study undertake by the University of Adelaide that suggested that Sugarloaf was composed of a unique form of non-graphite carbon with high resistivity. The prospect was interpreted as an "immature" graphite that had not been subjected to the metamorphic conditions required to form crystalline graphite (Archer Materials ASX Release: 29 June 2015).

#### **Current Metallurgical Investigations**

iTech is currently part way through a program of sighter metallurgical test work to determine if Sugarloaf graphite may be a suitable feedstock to produce battery anode material.

Our initial findings suggest that the previous interpretation of Sugarloaf being formed from a unique form of non-graphite carbon with high resistivity is not correct. iTech believes that Sugarloaf is primarily conductive, crystalline flake graphite for the following reasons.



- All graphite analysis undertaken on drill core is done using an analytical technique that specifically targets only graphitic carbon, called total graphitic carbon (TGC). Hydrochloric acid (50%) is used first to leach any carbon present as carbonate minerals. The sample is then roasted at 420°C driving off any organic carbon. At this stage all residual carbon should be graphitic and is measured by induction furnace/infra-red. Therefore, all drill results at Sugarloaf are only reporting graphitic carbon and not non-graphitic carbon as suggested.
- It was also suggested that the carbon at Sugarloaf was resistive and not conductive. It can be shown from airborne electromagnetic surveys of the prospect that the graphitic horizons form a very conductive, shallow, sub-horizontal layer that coincide with high TGC values in drill core (Figure 9). This suggests that we are measuring only the conductive, crystalline, flake graphite component of the prospect.

These observations are supported by additional petrographic and scanning electron microscope analysis of the fine flake graphite at Sugarloaf.

#### Petrology

Petrological analysis of graphite bearing rocks from Sugarloaf confirm the presence of abundant fine crystalline graphite. With flake sizes in the range of 5 micron ( $\mu$ m) to 150 micron ( $\mu$ m).

Twelve samples of Sugarloaf graphite, from drilling undertaken in 2011 and 2012, were subjected to petrological analysis to determine graphite morphology and flake size. The calculated mean size of graphite flakes from 12 samples across 6 drill holes is:

Drill Hole Sample	Estimated average size
SLRC11 001, 96-97	15 x 45 μm and 10x30 μm
SLRC11 001, 122-123m	5 x 15 μm
SLRC11 001, 128-129m	5 x 20 μm
SLRC11 001, 134-135m	5 x 10 μm, and 10 x 20 μm
SLRC11 002, 3-4m	10 x 20 μm
SLRC11 004, 96-97m	10 x 20 and 20 x 40 μm
SLRC11 004, 112-113m	10 x 40 and 10 x 25 μm
SLRC11 004, 124-125m	15 x 45 and 20 x 60 μm
SLRC12 001, 76-77m	10 x 25 μm
SLRC12 002, 100-101m	10 x 60 μm
SLRC12 003, 43-44m	10 x 60 μm

#### • width $11 \pm 5 \mu m$ and length $30 \pm 15 \mu m$ .

Table 1. Results of visual flake size analysis in polished thin section

Hole ID	From (m)	To (m)	Interval (m)	TGC (%)
SLRC11-001	60	82	22	12.3
and	96	144	48	10.0
SLRC11-002	0	20	20	6.3
and	28	93	65	9.0
SLRC11-003	47	53	6	10.0
SLRC11-004	81	151	70	10.0
SLRC12-001	54	74	20	7.8
and	76	83	7	10.6
SLRC12-002	55	89	34	6.3
and	96	119	23	10.6
incl	98	105	7	16.0
SLRC12-003	42	67	25	6.4
and	82	104	22	5.2

Table 2. Significant graphite intersection of drill holes used in metallurgical analysis





Figure 2. Petrology samples, **Left**: Sample from drillhole SLRC11 001 96-97m **Right**: Sample from drillhole SLRC11 0004 96-97m



Figure 3. Thin section image of SLRC001, 96-97m50 μmSize of graphite flakes: Length 5 μm to rarely 75 μm. Estimated average width and length 15 μm x 45 μm. Graphite flakes<br/>are the light-coloured crystals.50 μm



 Figure 4. Thin section image of SLRC11, 004, 96-97m
 50 μm

 Size of graphite flakes: Length 5 μm to rarely 110 μm long. Estimated average size 20 x 40 μm.

 Graphite flakes are the light-coloured crystals.

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#### Sighter Metallurgical Test Work and Scanning Electron Microscope Analysis

iTech provided ANZAPLAN with 15 kg of graphitic drill sample from drill hole SLRC 004 to undertake sighter test work and characterise the nature of the graphite at Sugarloaf. The fixed carbon or graphite content of the sample was analysed as 10.0 wt.-% TGC along with quartz, chlorite (clinochlore) and albite.



Figure 5. XRD analysis of the Sugarloaf sample confirms graphite as a major component.

A total of 6 rougher flotation tests were undertaken with varying parameters like grind times, equipment, reagent dosage, frother and dispersing and desliming reagents. As expected, due to the fine nature of the graphite, only a modest upgrade was achieved by flotation. Analysis of the flotation concentrates from the rougher stage by SEM showed that the graphite flakes had an average size of 10  $\mu$ m and had not been ground to a sufficient size to liberate the graphite flakes from the gangue. It was determined that finer grind sizes will be required. Work is ongoing to determine the optimum processing parameters to achieve sufficient upgrading of the graphite flake concentrate at acceptable recoveries. The aim will be to produce a >80% TGC concentrate with recoveries of >80%. With further optimisation the aim will be to increase TGC grade to >90%.

iTech has noted that several other graphite projects around the world (ASX: TLG and ASX: SGA) are in the process of developing high quality battery anode material from very fine to microcrystalline graphite resources. Once concentrated, the fine flake size has significant cost advantages in producing battery anode material due to the elimination, or minimisation, of the energy intensive micronisation step prior to spheroidization. This gives iTech the confidence to pursue the development of a suitable flow sheet to produce a high-grade graphite concentrate from Sugarloaf.



Figure 6. SEM image of flotation concentrate, magnification 500x. Dark grey crystals are the graphite flakes. Note: most flakes are still locked to gangue material and finer grinding is required for flakes to be released.





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Figure 7. SEM image of flotation concentrate, magnification 1500x. Dark grey crystals are the graphite flakes. Note: most flakes are still locked to gangue material and finer grinding is required for flakes to be released.



Figure 8. Plan view of the Exploration Target at the Sugarloaf Graphite Prospect – Eyre Peninsula, South Australia



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Figure 9. Airborne Electromagnetic conductivity sections across the Sugarloaf Graphite Prospect. Red = conductive, blue = not conductive (resistive)



Figure 10. Drillholes containing graphite identified from drill logs across the Sugarloaf Graphite Prospect



#### **Next Steps**

Now that the nature of the graphite at Sugarloaf has been confirmed as a microcrystalline flake graphite like several other battery anode material projects, iTech Minerals has engaged ANZAPLAN, a specialist graphite materials consultancy in Germany, to undertake a modified metallurgical test work program, on Sugarloaf graphite. The aim of the modified program is to determine if the microcrystalline Sugarloaf graphite can be processed into a concentrate suitable for battery anode material.

iTech has received final government and landowner drilling approvals across the Sugarloaf Graphite Exploration Target with a view to commencing the 2,000m drilling program in early January once the local grain harvest has been completed.

For further information please contact the authorising officer Michael Schwarz:

iTech Minerals Michael Schwarz, FAusIMM, AIG Managing Director E: <u>mschwarz@itechminerals.com.au</u> Ph: +61 2 5850 0000 W: <u>www.itechminerals.com.au</u>

#### ABOUT ITECH MINERALS LTD

iTech Minerals Ltd is a newly listed mineral exploration company exploring for and developing battery materials and critical minerals within its 100% owned Australian projects. The company is exploring for graphite, kaolinite-halloysite, regolith hosted rare earth element mineralisation and developing the Campoona Graphite Deposit in South Australia. The company also has extensive exploration tenure prospective for Cu-Au porphyry mineralisation, IOCG mineralisation and gold mineralisation in South Australia and tin, Tungsten, and polymetallic Cobar style mineralisation in New South Wales.

#### GLOSSARY

AEM = Airborne Electromagnetic EM = Electromagnetic FC = Fixed Carbon SEM = Scanning Electron Microscope sg = specific gravity – a measure of density TGC = Total Graphitic Carbon



#### **COMPETENT PERSON STATEMENT**

The information which relates to exploration results is based on and fairly represents information and supporting documentation compiled by Michael Schwarz. Mr Schwarz has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking, to qualify as a Competent Person as defined in the 2012 edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' (the JORC Code). Mr Schwarz is a full-time employee of iTech Minerals Ltd and is a member of the Australian Institute of Geoscientists and the Australian Institute of Mining and Metallurgy. Mr Schwarz consents to the inclusion of the information in this report in the form and context in which it appears.

The information contained in this report, relating to metallurgical results, is based on, and fairly and accurately represent the information and supporting documentation prepared by Damian Connelly. Mr Connelly is a full-time employee of METS Engineering who are a Contractor to iTech, and a Fellow of The Australasian Institute of Mining and Metallurgy. Mr Connelly has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration, and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Exploration Targets, Mineral Resources and Ore Reserves. Mr Connelly consents to the inclusion in the report of the matters based on the results in the form and context in which they appear.

This announcement contains results that have previously released as "Replacement Prospectus" on 19 October 2021, "Campoona Graphite Battery Anode Test Work Underway" on 22 November 2021, "Campoona Spherical Graphite Project Concentrate" on 21 August 2022, "Campoona Spherical Graphite Project Bulk sample produced" on 5 July 2022, "Sugarloaf Graphite Exploration Target, Eyre Peninsula" on 19 October 2022 and "200km of Graphite Exploration Potential at Eyre Peninsula Projects" on 26 October 2022. iTech confirms that the Company is not aware of any new information or data that materially affects the information included in the announcement.



### JORC 2012 EDITION - TABLE 1 Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code Explanation	Commentary		
Sampling Techniques	<ul> <li>Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as downhole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul> <li>Archer Materials (ASX: AXE) Diamond and RC drilling 2011-2012</li> <li>Sampling was guided by the company's protocols and QA/QC procedures</li> <li>RC samples are collected by a riffle splitter using a face sampling hammer diameter approximately 140 mm.</li> <li>All samples were sent ALS laboratory in Adelaide for preparation and forwarded to Brisbane for LECO C- IR18 analyses.</li> <li>All samples are crushed using LM2 mill to -4 mm and pulverised to nominal 80% passing -75 µm.</li> <li>Diamond core (if competent) is cut using a core saw. Where the material is too soft it is left in the tray and a knife is used to quarter the core for sampling.</li> <li>The Competent Person has reviewed referenced publicly sourced information through the report and considers that sampling was commensurate with industry standards current at the time of drilling and is appropriate for the indication of the presence of mineralisation.</li> </ul>		
Drilling Techniques	<ul> <li>Drill type (e.g., core, reverse circulation, open hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).</li> </ul>	<ul> <li>RC holes were drilled in a direction to hit the mineralisation orthogonally. Face sample hammers were used, and all samples collected dry and riffle split after passing through the cyclone.</li> <li>Diamond drilling was drilled as triple Tubed HQ diameter core.</li> <li>The Competent Person has reviewed the drilling program and considers that drilling techniques was commensurate with industry standards current at the time of drilling and is appropriate for the indication of the presence of mineralisation.</li> </ul>		
Drill Sample Recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and</li> </ul>	<ul> <li>The RC rig sampling systems are routinely cleaned to minimize the opportunity for contamination; drilling methods are focused on sample quality.</li> <li>The selection of RC drilling company, having a water drilling background enables far greater control on any water present in the system, ensuring</li> </ul>		

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Criteria	JORC Code Explanation	Commentary
	whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	<ul> <li>wet samples were kept to a minimum.</li> <li>All efforts were made to ensure the sample was representative.</li> <li>No relationship is believed to exist, but no work has been done to confirm this.</li> </ul>
Logging	<ul> <li>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul> <li>Geological logging is completed for all holes and representative across the deposit.</li> <li>Logged data is both qualitative and quantitative depending on field being logged.</li> <li>All drill holes are logged.</li> <li>Collars were located using a handheld GPS</li> <li>As this is early-stage exploration, collar locations will have to be surveyed to be used in mineral resource estimation.</li> </ul>
Sub- Sampling Techniques and Sample Preparation	<ul> <li>If core, whether cut or sawn and whether quarter, half or all cores taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality, and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/second-half sampling.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul> <li>All RC samples are split using a riffle splitter mounted under the cyclone, RC samples are drilled dry.</li> <li>Diamond core was cut on core saw and quarter core submitted for analyses.</li> </ul>
Quality of Assay Data and Laboratory Tests	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> <li>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks)</li> </ul>	<ul> <li>Quality of assay data is assumed to be appropriate as commercial laboratories were used for analysis with appropriate internal QAQC practices.</li> <li>Sample preparation at the ALS laboratory involves the original sample being dried at 80° for up to 24 hours and weighed on submission to laboratory. Crushing to nominal – 4 mm. Sample is split to less than 2 kg through linear splitter and excess retained. Sample splits are weighed at a frequency of 1/20 and entered into the job results file. Pulverising is completed using LM2 mill to 90%</li> </ul>

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Criteria	JORC Code Explanation	Commentary
	and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	<ul> <li>passing -75 µm. The pulverised residue is shipped to ALS in Brisbane for LECO analysis.</li> <li>A 0.1g sample is leached with dilute hydrochloric acid to remove Inorganic carbon. After filtering, washing and drying, the remaining sample residue is roasted at 425°C to remove organic carbon. The roasted residue is analysed for Carbon (graphitic – Cg%) - High temperature LECO furnace with infra-red detection.</li> <li>Petrological Analysis was undertaken by Pontifex and Associates between 2011-2012.Samples were collected by RC dill chips, made into polished thin sections and analysed visually.</li> <li>Sighter metallurgical test work was undertaken by ANZAPLAN in Germany. 15 kg of RC drill sample was collected from drill hole SLCR11-004 from samples in storage and sent to Germany. ANZAPLAN undertook crushing, chemical, XRD, SEM and flotation test work.</li> </ul>
Verification of Sampling and Assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul> <li>No drill hole twins exist in drilling.</li> <li>Primary data are captured on paper in the field and then re-entered into spreadsheet format by the supervising geologist, to then be loaded into the company's database.</li> <li>No adjustments are made to any assay data.</li> </ul>
Location of Data Points	<ul> <li>Accuracy and quality of surveys used to locate drillholes (collar and downhole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul> <li>The location of drill hole collar was undertaken using a hand-held GPS which has an accuracy of +/- 5m using UTM MGA94 Zone 53.</li> <li>The quality and adequacy are appropriate for this level of exploration.</li> <li>All holes have had their surface locations surveyed for Northing, Easting and RL. No coordinate transformation was applied to the data.</li> <li>Downhole surveys collected by multi- shot camera</li> </ul>
Data Spacing and Distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing, and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation</li> </ul>	<ul> <li>There is no pattern to the sampling and the spacing is defined by access for the drill rig, geological parameters, and land surface.</li> <li>Data spacing and distribution are sufficient to establish the degree of geological and grade continuity for future drill planning, but not for</li> </ul>



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Criteria	JORC Code Explanation	Commentary
	<ul><li>procedure(s) and classifications applied.</li><li>Whether sample compositing has been applied.</li></ul>	resource reporting.
Orientation of Data in Relation to Geological Structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	<ul> <li>It is believed that the drilling has intersected the geology at right angles, however, it is unknown whether the drill holes have interested the mineralisation in a perpendicular manner. The mineralised horizon is obscured by a thin veneer of transported material.</li> <li>It is believed there is no bias has been introduced.</li> </ul>
Sample Security	The measures taken to ensure sample security.	<ul> <li>All samples were in the custody of company employees or their contractors from the drill rig to the laboratory.</li> <li>Best practices were undertaken at the time.</li> <li>All residual sample material (pulps) is stored securely.</li> </ul>
Audits or Reviews	The results of any audits or reviews of sampling techniques and data.	None undertaken.



### Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code Explanation	Commentary
Mineral Tenement and Land Tenure Status	<ul> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the</li> </ul>	<ul> <li>Tenement status confirmed on SARIG.</li> <li>The tenements are in good standing with no known impediments.</li> <li>The northern half of the exploration Target is on EL5920 owned by Chemex Materials (ASX: CMX) and is subject to an agreement in which iTech owns 100% of the graphite rights through its wholly owned subsidiary SA Exploration Pty</li> </ul>
	time of reporting along with any known impediments to obtaining a licence to operate in the area.	Ltd. The southern half of the Exploration Target is on EL5791 which is held by SA Exploration Pty Ltd.
Exploration Done by Other Parties	Acknowledgment and appraisal of exploration by other parties.	<ul> <li>Relevant previous exploration has been undertaken by Helix Resources Ltd, Gold Stream Mining NL, Monax Mining Ltd, Marmota Energy Ltd, Lincoln Minerals Ltd and Archer Materials Ltd</li> <li>Lincoln Minerals was the former owner of the ground now covered by EL 5791, it has been historically explored CRA in 1980's (Campoona Syncline) and later by WMC, 1990's.</li> <li>Two airborne Electromagnetic Surveys were flown, the northern survey was commissioned by Monax Mining Ltd/Marmota Energy Ltd in 2012 and was flown by Fugro using their airborne TEMPEST System. The southern survey was commissioned by Lincoln Minerals Ltd and was flown by Fugro using the same system and parameters as the Monax survey.</li> </ul>
Geology	Deposit type, geological setting and style of mineralisation.	<ul> <li>The tenements are within the Gawler Craton, South Australia.</li> <li>iTech is exploring for graphite, porphyry Cu-Au, epithermal Au, kaolin and halloysite and REE deposits.</li> <li>The graphite at this location occurs within the Paleoproterozoic Hutchison Group Metasediments and is likely to have formed from organic rich stratigraphic horizons metamorphosed during regional upper greenschist to lower amphibolite facies metamorphism during the Kimban Orogeny. The graphite rich horizon forms a largely flat lying, shallow anticlinal structure as interpreted from drilling and detailed airborne and ground-based electromagnetics</li> </ul>
Information	material to the understanding of the	information.

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Criteria	JORC Code Explanation	Commentary
Criteria Data Aggregation Methods	<ul> <li>JORC Code Explanation</li> <li>exploration results including a tabulation of the following information for all Material drill holes: <ul> <li>Easting and northing of the drill hole collar</li> <li>Elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>Dip and azimuth of the hole</li> <li>Downhole length and interception depth</li> <li>Hole length</li> </ul> </li> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g., cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low-grade results, the procedure used for such aggregation should be shown in detail.</li> <li>The assumptions used for any</li> </ul>	<ul> <li>No high-grade cuts were necessary.</li> <li>Aggregating was made for intervals that reported over 2% Cg (Carbon-graphitic %) using a downhole interval weighted arithmetic average.</li> <li>Internal dilution was less than 3m</li> <li>No equivalents were used.</li> </ul>
	should be clearly stated.	
Relationship Between Mineralisation Widths and Intercept Lengths	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the downhole lengths are reported, there should be a clear statement to this effect (e.g., 'downhole length, true width not known').</li> </ul>	<ul> <li>All drill intervals are down hole length, the true width is not known.</li> <li>All intercepts reported are down hole lengths.</li> </ul>
Diagrams	<ul> <li>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a</li> </ul>	<ul> <li>See main body of report.</li> </ul>

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	plan view of drill hole collar locations and appropriate sectional views.			
Balanced Reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced avoiding misleading reporting of Exploration Results.	<ul> <li>All other relevant data has been reported.</li> <li>The reporting is considered to be balanced.</li> <li>Where data has been excluded, it is not considered material.</li> </ul>		
Other Substantive Exploration Data	<ul> <li>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</li> </ul>	<ul> <li>The Project area has been subject of significant exploration for base metals, graphite and gold.</li> <li>All relevant exploration data has been included in this report.</li> </ul>		
Further Work	<ul> <li>The nature and scale of planned further work (e.g., tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	Further exploration, sampling, geochemistry, geophysics, drilling and metallurgical test work is required to convert the exploration target into resources.		





### Appendix 1. Drill hole details

				Total		
	Easting	Northing		Depth	Dip	Azimuth
Hole ID	(m)	(m)	RL (m)	(m)	(degrees)	(degrees)
SLRC11-001	622823	6292943	257	147	-60	120
SLRC11-002	622779	6292786	266	109	-60	90
SLRC11-003	623063	6293371	266	175	-60	90
SLRC11-004	623287	6293771	276	151	-60	90
SLRC12-001	623067	6293089	262	91	-60	280
SLRC12-002	623699	6294121	287	121	-60	280
SLRC12-003	623779	6294243	285	115	-60	280
SLDD12-001	623650	6294164	294	48.5	-60	118
SLDD12-002	623669	6294190	292	34	-70	118