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RENASCOR RESOURCES

ASX: RNU

ASX Release

26 November 2021

Higher Yields and Higher Prices for Siviour Purified Spherical Graphite

Highlights:

- Commercial-scale testing of downstream milling equipment using Siviour Graphite Concentrates has delivered **spherical graphite yields in excess of 60%** (versus the 50% yield adopted in Renascor's Battery Anode Material Study[1]).
- Locked cycle tests using Renascor's eco-friendly purification process have confirmed the ability to **exceed lithium-ion battery anode purity specifications**, with results of up to 99.99% Carbon (**C**) (versus anode industry standard of 99.95% C).
- Purified Spherical Graphite (**PSG**), which is used in the production of anodes for lithium-ion batteries**, is experiencing substantial upward price improvement,** with Fastmarkets reporting a +40% increase in the price of PSG over the last 12 months[2].
- **Good progress with POSCO,** with confirmatory due diligence progressing well in conjunction with constructive discussions on commercial terms for strategic cooperation and offtake of 20,000 to 30,000tpa of PSG from Renascor's planned Battery Anode Material operation in South Australia.

Commenting on recent results, Renascor's Managing Director David Christensen stated:

"Our team continues to make great progress in rapidly advancing the development of the Siviour Battery Anode Material operation and moving closer to Renascor's objective to become a world leader in the sustainable production of a 100% Australian-made graphite product for use in lithium-ion battery anodes.

These favourable results come at a time of increasing demand for battery anode materials and strong growth in the price of Purified Spherical Graphite."

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Renascor Resources Limited (ASX: RNU) (**Renascor**) is pleased to announce positive results from advanced downstream mineral processing trials for Renascor's planned vertically integrated graphite mine and battery anode material manufacturing operation in South Australia (the **Siviour Project**).

The ongoing testwork has demonstrated that:

- Commercial-scale milling of Siviour graphite concentrates can deliver yields (i.e., the amount of graphite concentrate converted into spherical graphite) in excess of 60%. This is well in excess of the 50% yield assumed for the Battery Anode Material Study[3]).
- Locked-Cycle purification, designed to simulate continuous operating conditions using Renascor's eco-friendly purification process, can deliver PSG purity specification up to 99.99% Carbon (C) (versus anode industry standard of 99.95% C).

Purified Spherical Graphite Price

The positive technical results come against a backdrop of increasing upward pressure on the price of Purified Spherical Graphite (Figure 1), with the price reporting group Fastmarkets recently reporting a 40% increase in the price of Purified Spherical Graphite over the last 12 months to between US$3,100 and US$3,300 per tonne[4].

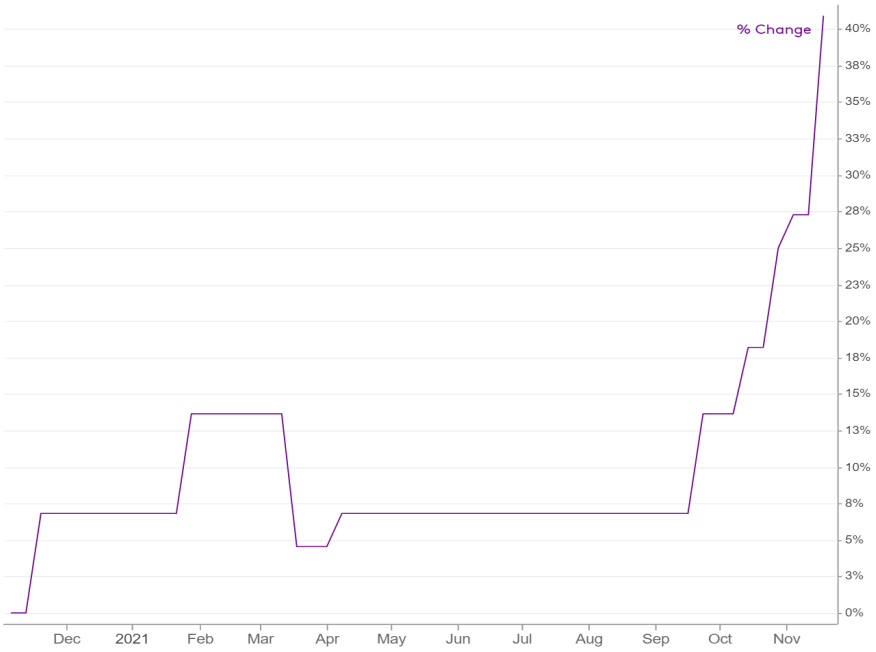

Figure 1: Relative change in pricing for Purified Spherical Graphite (15 micron, FOB China)[5].

POSCO Strategic Cooperation and Offtake

Renascor also continues to make good progress in relation to its Strategic Cooperation and Offtake MOU with POSCO[6]. Confirmatory due diligence commissioned by POSCO is underway, with negotiations continuing on the commercial terms for strategic cooperation and offtake of between 20,000 to 30,000tpa of PSG from Renascor's planned Battery Anode Material operation in South Australia.

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FURTHER INFORMATION

Commercial-scale downstream milling equipment trials

The production of Purified Spherical Graphite requires that Graphite Concentrates are first mechanically shaped into a micronised spherical form before being purified for use in lithium-ion battery anodes.

To prepare for engineering design works for its planned PSG manufacturing facility, Renascor recently commenced milling trials on commercial-scale milling equipment designed to micronise and spheronise Siviour Graphite Concentrates.

A key objective of these mill trials is to maximise the amount of graphite that can be processed from Siviour Graphite Concentrates into a spherical form that meets the physical product specifications of Renascor's existing and potential additional offtake partners[7].

Graphite Concentrates that meet these physical product specifications (including product size, particle size distribution, tap density and surface area), can be purified to battery-grade and sold as Purified Spherical Graphite. Achieving higher yields from the milling process results in the production of higher amounts of Purified Spherical Graphite and greater efficiencies and profitability.

For purposes of the Battery Anode Material Study, completed in July 2020[8], Renascor relied upon preliminary equipment trials using up to 60kg samples of Siviour Graphite Concentrates and a projected yield of 50%, which is in line with global industry norms.

The recent trials are being conducted on a larger-scale of up to 750kg of Siviour Graphite Concentrates per trial, using Siviour Graphite Concentrates produced from Renascor's recently completed large-scale pilot flotation program[9]. The milling trials have been designed to test the ability of selected milling equipment to meet the physical product specifications of both Renascor's existing and potential offtake partners.

Results to date have included yields in excess of 60% of spherical graphite, consisting of both a primary spherical graphite that meets a standard size specification (d50 = 16 microns), as well as a finer spherical graphite product (d50 = 10 microns). In both cases, the physical product specifications have been achieved.

The trials will continue through the current quarter, with the results to be incorporated into final equipment selection and engineering design works for Renascor's planned PSG manufacturing facility.

Locked-cycle purification trials

Following the milling and micronisation process, Renascor's planned downstream operation will purify Siviour spheronised graphite through an eco-friendly purification process that avoids the use of hydrofluoric acid (**HF**), which is generally used in Chinese PSG operations. Instead, Renascor will use less environmentally harmful reagents to purify spheronised graphite to battery grade for use in in lithium-ion battery anodes.

Earlier this year, Renascor completed bench-scale optimisation purification trials with German battery mineral consultancy group Dorfner Analysenzentrum und Anlagenplanungsgesellschaft mbH (**Dorfner ANZAPLAN**)[10].

Dorfner ANZAPLAN is a leading consultancy and engineering company with particular experience in battery minerals. Dorfner ANZAPLAN's graphite expertise includes testing, developing, piloting and

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adapting mineral processing parameters to purify graphite concentrates to lithium-ion battery grade levels of +99.95% C.

As part of these earlier trials, Renascor used sulfuric acid as the primary leaching reagent, rather than hydrochloric acid, which was adopted as part the Battery Anode Material Study[11]. The earlier bench-scale trials consistently met or exceeded lithium-ion battery anode purity specifications, with results of up to 99.99% Carbon (**C**) (versus anode industry standard of 99.95% C). Further, these results were achieved with a decreased consumption of sulfuric acid, as compared to previous trials using hydrochloric acid.

To enable detailed engineering works for its purification circuit, Renascor recently commenced locked cycle tests adopting the flowsheet parameters used in the recent trials. The locked cycle flotation tests differ from the previous bench scale tests by more closely approximating processing conditions by including recycle streams in a closed circuit and permitting a more accurate calculation of mass-water balance and other process design criteria necessary for competing detailed engineering design.

The locked cycle tests are being undertaken by Dorfner ANZAPLAN, in collaboration with Renascor's external engineering advisors Wave International.

Preliminary results from the locked cycle tests have confirmed that the optimised purification circuit can meet or exceed lithium-ion battery anode purity specifications, with results of up to 99.99% C.

The trials are expected to be completed later this quarter, with the results to be used in for engineering design works for the purification circuit of the planned PSG manufacturing facility.

Competent Person Statement

The information in this document that relates to exploration activities and exploration results is based on information compiled and reviewed by Mr G.W. McConachy who is a Fellow of the Australasian Institute of Mining and Metallurgy. Mr McConachy is a director of the Company. Mr McConachy has sufficient experience relevant to the style of mineralisation and type of deposits being considered to qualify as a Competent Person as defined by the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code, 2012 Edition). Mr McConachy consents to the inclusion in the report of the matters based on the reviewed information in the form and context in which it appears.

This ASX announcement has been approved by Renascor's Board of Directors and authorised for release by Renascor's Managing Director David Christensen.

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[1] See Renascor ASX announcement dated 1 July 2020.
[2] https://www.fastmarkets.com/commodity-price/graphite-spherical-99-95-c-15-microns-fob-china-mb-gra-0036.
[3] See Renascor ASX announcement dated 1 July 2020.
[4] https://www.fastmarkets.com/commodity-price/graphite-spherical-99-95-c-15-microns-fob-china-mb-gra-0036 and https://www.indmin.com/Article/4017117/Flake-amorphous-and-spherical-graphite-prices-surge-on-high-costs-and-solid-demand.html Pricing refers to a 15 micron, 99.95% product, a product specification that is comparable to a standard specification from Renascor's existing offtake partners. Note also that the most recent reported price refers to a price range (between US$3,100 and US$3,300).
[5] https://www.fastmarkets.com/commodity-price/graphite-spherical-99-95-c-15-microns-fob-china-mb-gra-0036

[6] See Renascor ASX announcement dated 25 August 2021
[7] Renascor has entered into four non-binding memoranda of understanding for up to 60,000tpa of PSG, comprised of up to 30,000tpa to South Korean conglomerate POSCO and up to 10,000tpa to each of Japan-based trading company Hanwa Co. Ltd. and Chinese anode companies Shanxi Minguang New Material Technology Co. Ltd and Jiangxi Zhengtuo New Energy Technology Co. Ltd. See Renascor ASX announcements dated 25 August 2021, 25 March 2021, 11 February 2021 and 29 September 2021.
[8] See Renascor ASX announcement dated 1 July 2020.
[9] See Renascor ASX announcement dated 31 August 2021.
[10] See Renascor ASX announcement dated 28 May 2021 and 1 July 2021.
[11] See Renascor ASX announcement dated 1 July 2020.

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Appendix 1

JORC Table 1

Section 1: Sampling Techniques and Data **(criteria in this section apply to all succeeding sections)**		
Criteria	**JORC Code explanation**	**Commentary**
Sampling techniques	• *Nature and quality of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.*	• In 2018, Renascor undertook reverse circulation (RC) drilling. Based on visual analysis, approximately 50% of drill samples were considered mineralised with graphitic carbon. • All graphitic intervals were collected for assaying at one-metre intervals, with the remaining samples transferred to bulka bags. • The graphitic assay samples were submitted for analyses at Bureau Veritas laboratory in Adelaide for preparation and for Total Graphitic Carbon (TGC) analyses. • Duplicate and standards were submitted. • The assay samples were pulverised using an LM5 mill, 90% passing 75µm. • Sampling was guided by Renascor Resources Limited's protocols and QA/QC procedures. • The samples used in the pilot plant testing consists of the composited one metre drill sample material collected from the following drill holes: 18SIVAC140 to 18SIVAC150, 18SIVAC152, 18SIVAC154 to 18SIVAC171, 18SIVAC175 to 18SIVAC176, 18SIVAC179 to 18SIVAC181, 18SIVAC183 to 18SIVAC192, 18SIVAC194 to 18SIVAC217, 18SIVAC219 to 18SIVAC222, 18SIVAC172A to18SIVAC174A, 18SIVAC223 to 18SIVAC227, 18SIVAC230 and 8SIVAC232, all of which are located within areas that Renascor considers likely to be mined in the first ten years of Siviour's mine life. • Sample material was collected for daily production runs in quantities of between approximately three to five tonnes and fed to the primary mill prior to processing in accordance with the locked cycle flowsheet, with the exception that a separate 3.5 tonne production trial, was undertaken with an adjustment made to increase re-grind times in the flotation

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Section 1: Sampling Techniques and Data (criteria in this section apply to all succeeding sections)		
Criteria	**JORC Code explanation**	**Commentary**
		circuit, • Refer to Renascor ASX releases, 7 November 2018, 14 November 2018 and 7 December 2018 for drillhole locations. Renascor confirms that the form and context in the Competent Persons' findings are presented have not materially changed from the original announcement.
Drilling techniques	• *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).*	• RC drilling using 4 3/4" RC Hammer was undertaken by Bullion Drilling.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• One-metre drill chip samples, weighing approximately 3 kg were collected throughout the RC drill programme in sequentially numbered bags. Samples were generally collected from the drill rig and riffle split however in some instances samples were collected by spear technique. • Every interval drilled is represented in an industry standard chip tray that provides a check for sample continuity down hole.
Logging	• *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.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant*	• All drill samples were geologically logged by experienced geologists at the drill rig. The geological logs were checked by re-logging of the drill core in Adelaide. • Primary data was captured into spreadsheet format by the supervising geologist, and subsequently loaded into the Renascor's database. • No adjustments have been made to any assay data. • Primary data was captured into spreadsheet format by the supervising geologist, and subsequently loaded into the Renascor's database.

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Section 1: Sampling Techniques and Data (criteria in this section apply to all succeeding sections)		
Criteria	**JORC Code explanation**	**Commentary**
	intersections logged.	
Sub-sampling techniques and sample preparation	• *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *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.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• All samples were marked with unique sequential numbering as a check against sample loss or omission. • At the Bureau Veritas laboratory sample preparation involved the original sample being dried at 105° for up to 24 hours on submission to laboratory. • Sample is split to less than 3 kg through linear splitter and excess retained. • Pulverising was completed using LM5, 90% passing 75 µm in preparation for analysis using the Bureau Veritas network. • All the samples are marked with unique sequential numbering as a check against sample loss or omission. • For pilot production work, the ore was fed to the primary mill prior to processing in accordance with the locked cycled flowsheet, with the exception that a separate 3.5 tonne production trial, was undertaken with an adjustment made to increase re-grind times in the flotation circuit • Final concentrate grade were assayed for total carbon, with recoveries measured in fixed carbon.
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *Nature of quality control procedures adopted (e.g., standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e., lack of bias) and precision have been established.*	• All samples were sent to Bureau Veritas laboratory in Adelaide for preparation and for TGC analysis using a mixed acid digest. • Sampling was guided by Renascor Resources Limited's protocols and QA/QC • For TGC analysis a portion of the sample is dissolved in weak acid to liberate carbonate carbon. The residue is then dried at 420°C driving off organic carbon and then analysed by its sulphur-carbon analyser to give TGC. • Bureau Veritas Minerals has adopted the ISO 9001 Quality Management Systems. All Bureau Veritas laboratories work to documented procedures in accordance with this standard.

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Section 1: Sampling Techniques and Data (criteria in this section apply to all succeeding sections)		
Criteria	**JORC Code explanation**	**Commentary**
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• Primary data was captured into spreadsheet format by the supervising geologist, and subsequently loaded into the Renascor's database applying Renascor's QA/QC protocols. • Field duplicates and standards were inserted at a rate of 5% and 3%, respectively. • No adjustments have been applied to the results.
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• Drillholes were surveyed by a licenced surveyor. • The collar coordinates were entered into the drillhole database. • The degree of accuracy of drillhole collar location and RL is estimated to be within 0.1m for DGPS and 5m error level for the hand-held GPS. • The grid system for the project was Geocentric Datum of Australia (GDA) 94, Zone 53.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *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 procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	• Exploration results are not being reported. • RC Holes were drilled on sections on either, 50m, 100m or 200m spacing • Geological interpretation and mineralisation continuity analysis indicate that data spacing is sufficient for definition of a Mineral Resource. • All of the samples were taken over a 1m interval.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling*	• Interpretation of the relationship between the drilling orientation and the orientation of key mineralised structures indicates that mineralisation is likely to be perpendicular to strike continuity. • The orientation of drilling is not expected to introduce sampling bias.

Section 1: Sampling Techniques and Data (criteria in this section apply to all succeeding sections)		
Criteria	**JORC Code explanation**	**Commentary**
	bias, this should be assessed and reported if material.	
Sample security	• *The measures taken to ensure sample security.*	• Unique sample number was retained during the whole process. • Samples were transported by a reputable transport company and sample bags and dispatch notice checked upon receipt at the laboratory and the pilot facility, respectively.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• All data collected was subject to internal review.

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SECTION 2: REPORTING OF EXPLORATION RESULTS (criteria listed in the preceding section apply also to this section)		
Criteria	**JORC Code explanation**	**Commentary**
Mineral tenement and land tenure status	• *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.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• The Siviour deposit is located within Mineral Lease (ML) 6495 and Exploration Licence (EL) 6469, held by Ausmin Development Pty Ltd (Ausmin). Renascor, through its wholly-owned subsidiary Eyre Peninsula Minerals Pty Ltd (EPM), acquired 100% of Ausmin Development Pty Ltd (Ausmin) and its tenements in 2018. • The tenements are in good standing. • The drilling was carried out on agricultural freehold land.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Several companies have carried out historic exploration over many years, but without any focus on graphite prospectivity. Cameco Ltd, as part of a uranium exploration program, acquired EM data across the tenement in 2006 and 2007. Cameco drilled hole CRD0090, without testing for graphite. • During 2014, Eyre Peninsula Minerals Pty Ltd carried graphite-focused exploration and drilled a further six RC holes and one diamond core hole reporting graphite intersections in all holes.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The graphite mineralisation at Siviour is hosted within Meso-Proterozoic metasedimentary rocks sediments of the Hutchison Group. • The graphite mineralisation is within a nominally 30 m-thick band of pelitic schist that occurs within a thick calc-silicate sequence.
Drillhole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drillholes:* • *easting and northing of the drillhole collar* • *elevation or RL (elevation above sea level in metres) of*	• Reported previously.

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SECTION 2: REPORTING OF EXPLORATION RESULTS (criteria listed in the preceding section apply also to this section)		
Criteria	**JORC Code explanation**	**Commentary**
	the drillhole collar • *dip and azimuth of the hole* • *down hole length and interception depth* • *hole length.*	
Data aggregation methods	• *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.*	• Exploration results are not being reported. • Metal equivalent values have not been used.
Relationship between mineralisation widths and intercept lengths	• *If the geometry of the mineralisation with respect to the drillhole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect.*	• Renascor considered the undulating nature of the mineralisation and all drillholes intersected mineralisation at near perpendicular to the dip orientation of the host lithologies and mineralisation. • Exploration results are not being reported.
Diagrams	• *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 plan view of drill hole collar locations and appropriate sectional views.*	• Exploration results are not being reported.
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 to avoid misleading reporting of Exploration Results.*	• Exploration results are not being reported.
Other substantive exploration data	• *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*	• Exploration results are not being reported.

SECTION 2: REPORTING OF EXPLORATION RESULTS (criteria listed in the preceding section apply also to this section)		
Criteria	**JORC Code explanation**	**Commentary**
	density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	
Further work	• *The nature and scale of planned further work (e.g., tests for lateral extensions or depth extensions or large-scale step-out drilling).*	• Additional drilling may be undertaken to follow-up EM anomalies within areas adjacent to the Siviour deposit. • Ongoing metallurgical work may include optimisation and variability test work.

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