

ASX Announcement | 25 September 2020
Hexagon Energy Materials Limited (ASX: HXG)

Hexagon defines significant gold anomalies in new highly prospective areas at Halls Creek Project

Investment Highlights

- Hexagon reports on newly identified gold in soil anomalies from the first two of three target sites tested via soil sampling in July 2020
- Gold in soil anomalies were defined over lengths of 1.4 km and 3.0 km at the Golden Crown South and Bent Ridge prospects, respectively
- Detailed mapping confirms that the newly identified Golden Crown South prospect is associated with similar fault structures to the nearby historical Golden Crown and Butcher Bird Gold Mines
- Drilling planned as soon as possible to evaluate targets
- Systematic exploration comprising data compilation, recent airborne geophysical, detailed mapping and now surface sampling is yielding encouraging, large scale gold anomalies prospective for gold mineralisation
- The Halls Creek region is known for high-grade gold deposits such as those currently being mined by Pantoro (ASX:PNR) and explored by Meteoric Resources (ASX:MEI) in close proximity to and with similar geological elements identified on Hexagon's ground.

Sydney, 25 September 2020: **Australian energy materials company Hexagon Energy Materials Limited (ASX: HXG)** ('Hexagon' or 'the Company') is pleased to announce that it has defined significant new gold in soil anomalies at two of the three prospects soil sampled in July 2020. Assays for the 3rd prospect, Calibri are pending.

Gold in soil anomalies were defined over a length of 1.4 km at the Golden Crown South and 3.0 km for the prospects, as shown in Figure 1.

The recent airborne geophysics and detailed mapping programmes have identified these targets as being prospective for gold mineralisation which has now been confirmed by the soil sampling and mapping programmes.

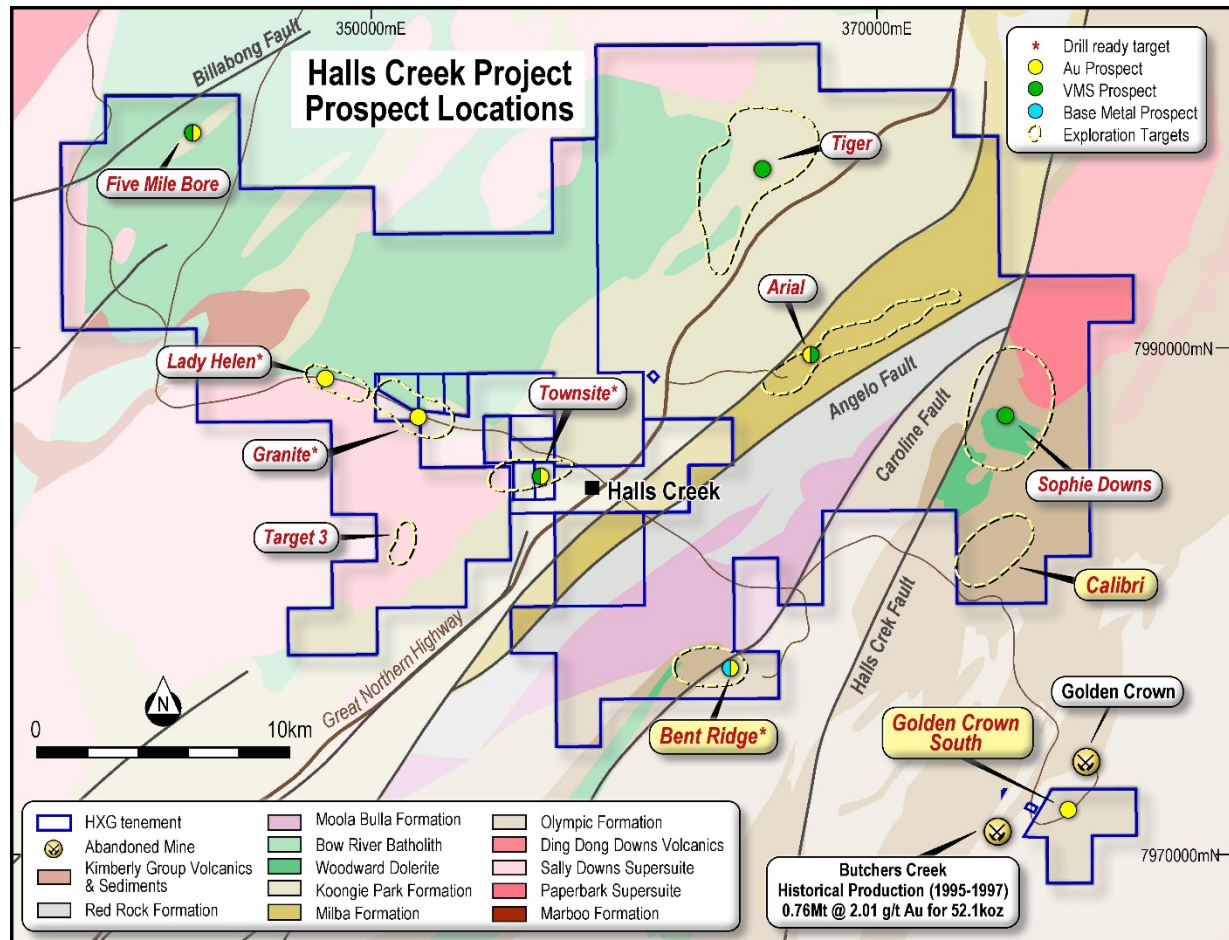
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The Halls Creek region is known for high-grade gold deposits such as those currently being mined by Pantoro at the Nicholson's Find Gold Mine. Additionally, the historical Butchers Creek Gold Mine located less than one kilometre to the west of Hexagon's tenements and new Golden Crown South prospects, is currently being drilled by Meteoric Resources.

Figure 1: Halls Creek Gold Project – Schematic Geology and Prospect Location Plan



Gold target identification at Golden Crown South site

Hexagon generated this target which had virtually no historical exploration, and this is the first time a gold target zone, extending over 1.4 km, has been defined by geochemical sampling. Please refer to Figure 2.

Geological mapping indicates prospective fault structures for hosting gold mineralisation, potentially underpinning the surface gold anomalism. Notwithstanding the previously unexplored nature of this prospect, gold targets, including historical mines, are currently being drill tested in similarly orientated structures to the west and north of Hexagon's ground, highlighting the potential for an emerging new gold region.

Gold target identification at Bent Ridge site

Historical work has identified a 3.5 km strike extent of soil anomalism of common 'pathfinder elements' for gold mineralisation such as coincident arsenic and base metal anomalies as shown in Figure 3.

Hexagon's survey is the first to include assays for gold with the new results defining two target zones of 0.8 km and 2.4 km in strike-length within an overall 3.5km trend of gold anomalies, with updated arsenic and base metal results confirming the historical results.

The prospectivity for gold mineralisation is further enhanced by a historical geophysical survey over a modest 25% of the newly defined soil anomalies which comprised a strong conductive and chargeable 'Induced Polarisation' response associated with a mapped siliceous gossanous ridge. The mapped rocks and the geophysical response are interpreted to be related to the presence of sulphide minerals, commonly associated with gold mineralisation.

Exploration next steps

Several of these anomalies are 'open-ended' and additional sampling is required to determine the extents as well as to infill the existing wide spaced sample intervals.

Western Australia is currently experiencing an exploration boom with Programme of Work (PoW) applications up 63% to a 5-year high, and whilst this is positive for the industry it has created significant backlogs with assays and severely constrained the availability of drill rigs, assay services and labour. All of which is exacerbated by Western Australia's interstate travel restrictions. The Company has received approval for 4 PoW applications including for Bent Ridge and Golden Crown South drill programmes.

Timing of drilling is currently dependent on availability of drill rigs and unfortunately a previously 'secured' rig is now at risk of being potentially further delayed, precluding Hexagon from drilling due to the impending wet season.

This does create the opportunity to continue advancing the project, Hexagon is planning on completing further surface sampling work to scope out the extent and better define new anomalies ahead of an initial drill program. This delay could also mean that drilling expenditure for the Bent Ridge prospect could be supported by funding from the State Government's Exploration Incentive Scheme which Hexagon has applied for.

Under these circumstances, the Company would receive the delayed soil results from the Calibri prospect, complete the follow-up sampling and then undertake a larger, better defined drill program at the end of the wet season in April 2021. This is still to be finalised - all being subject to rig availability and target definition work.

Additional Hexagon sites

Hexagon is looking forward to the assay results for the Calibri prospect which are delayed, and is also planning additional work on the Target 3, Granite, and Lady Helen prospects (refer Figure 1)

Calibri is another new, Hexagon generated target. Recently completed geological mapping and has defined complex highly strained and schistose stratigraphy, particularly within the eastern portion of the prospect. Areas of interest are dominated by mafic volcanics with fine grained meta-sedimentary interbeds, preserved domes of felsic volcanics and evidence of remnant sulphides.

Hexagon Managing Director, Mike Rosenstreich said: “Hexagon’s systematic, geologically based approach is generating exciting results, clearly defining two new gold prospects from recent soil geochemistry and well supported by key structural elements identified by the detailed mapping completed in August. These initial results for the first two out of the six higher priority prospects are highly encouraging as we advance towards gold discovery, and we are excited to forge ahead with further new target areas over the coming month.”

Figure 2: Golden Crown South Location Plan with Gold Target and Schematic Geology

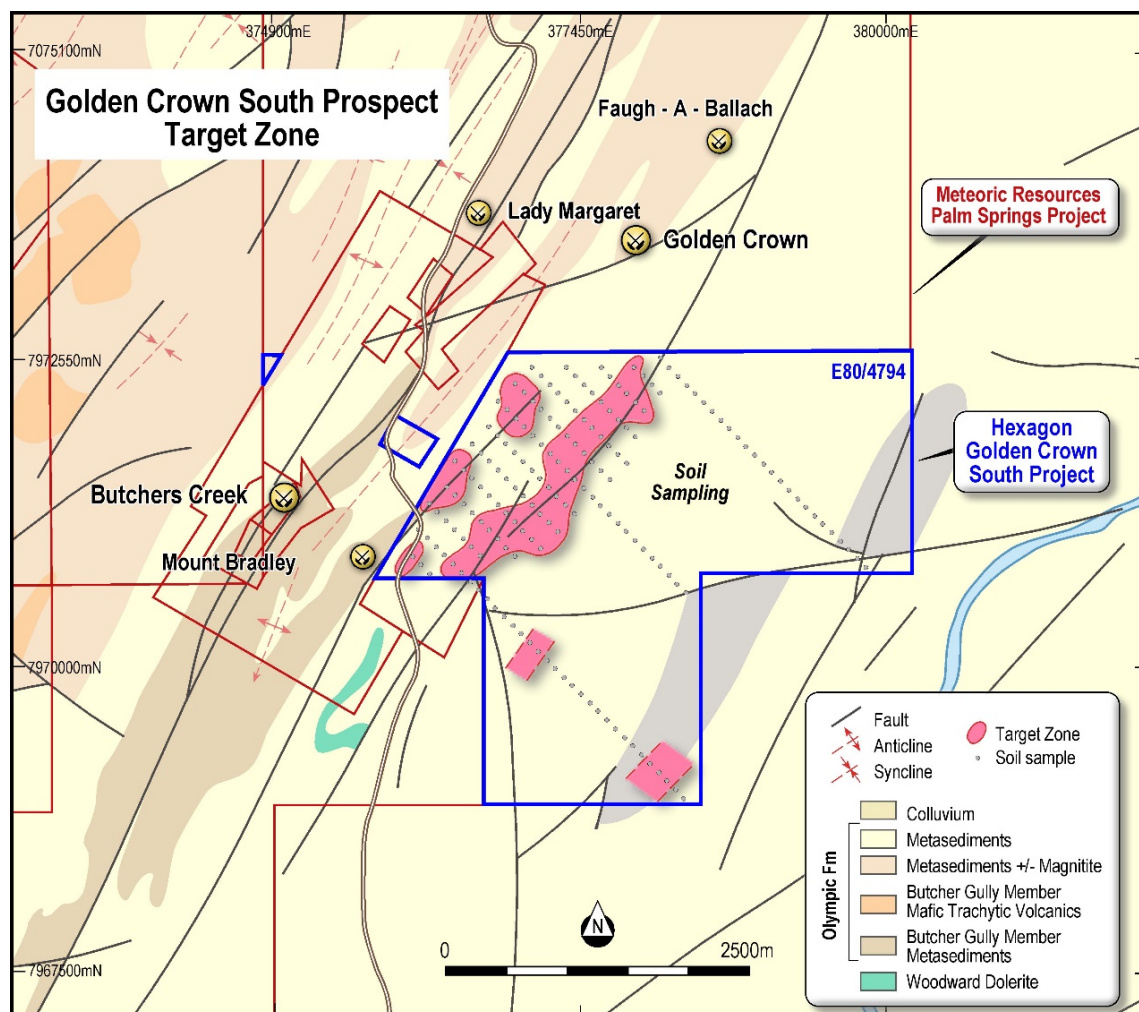
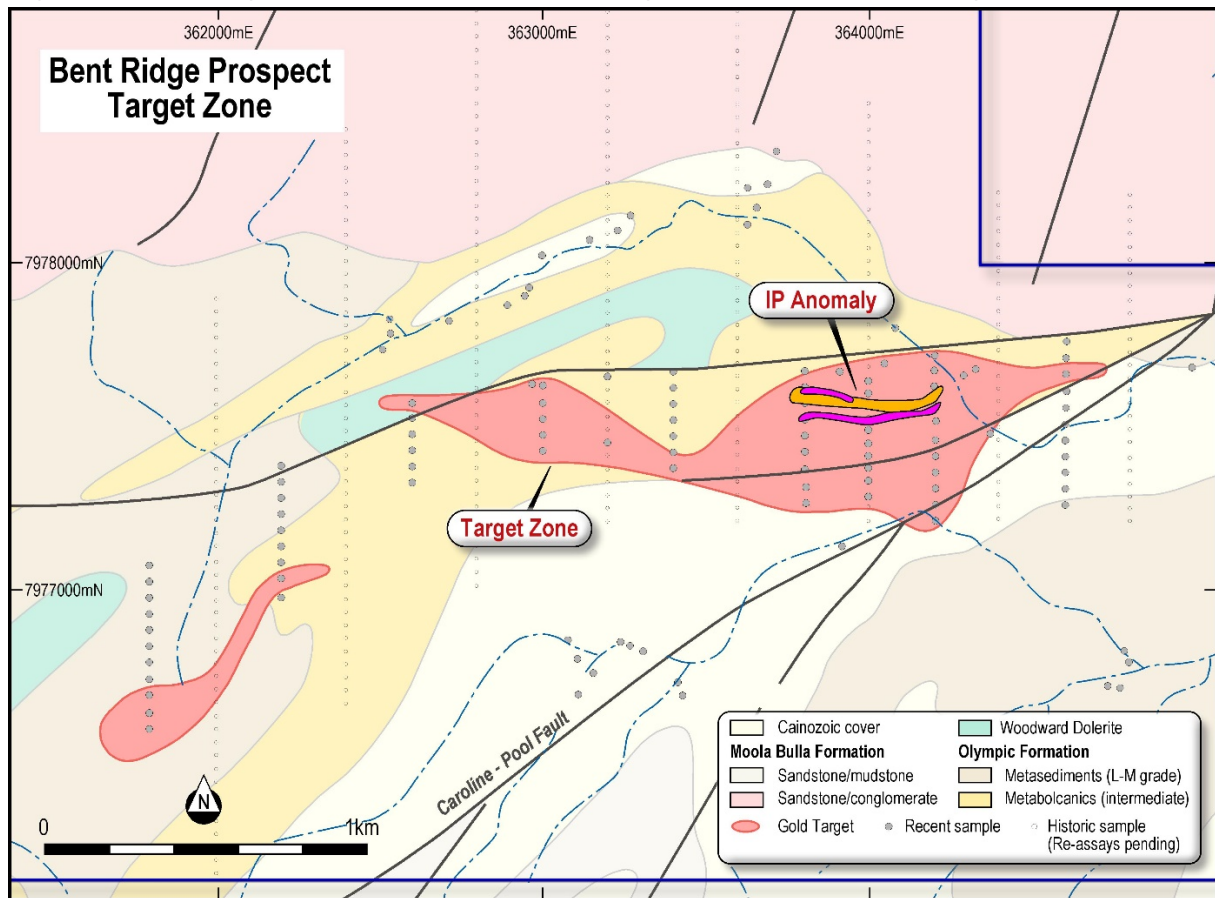


Figure 3: Bent Ridge Location Plan with Gold Target and Schematic Geology



Technical Discussion

Method

The soil samples were sieved onsite into fine (<2mm) and coarse (>2mm <4mm) fractions and placed into labelled seal-lock plastic sample bags. The coarse fraction is currently in storage with no analysis yet undertaken.

The fine fractions were dispatched to Intertek in Perth, where the individual samples were dried and sieved to <50µm. The sieved samples were then subjected to an enhanced 33 multi element aqua regia digestion suite with ICP_MS finish, with a low low-level Au detection limit of 0.1 ppb.

Results

Golden Crown South sampling was completed on a 200 m (line spacing) x 100 m (sample spacing) grid and targeted a number of proximal subparallel structures to a NNE trending fault known to host gold mineralisation including the Butcher Creek open pit (52koz mid 1990's), and the Lady Margaret and Golden Crown gold deposits. These form part of the Meteoric Resources Palm Spring Project.

The results presented in Figure 4 indicate surface Au anomalism that is open to the south-east and includes an 800 m strike length by 300 m maximum width area, with coincidental As, Pb, Sb and Bi anomalism. A discontinuous soil anomaly on the western edge of the tenement also relates to the fault containing the Mount Bradley Deposit. To the south-east of the tenement a sampling orientation line has also picked up several anomalous results that warrant follow up.

At Bent Ridge the sampling programme which consisted of 90 samples on a 400 m (line spacing) x 50 m (sample spacing) grid focused on infilling and duplicating an extensive arsenic (As) in soil anomaly from a 2008 soil sampling program. Results confirmed several significant inground gold (Au) anomalies extending over a length of 3.5 km defining the Bent Ridge Prospect. The southern portion has an ~800 m strike length and also correlates with an As anomaly, whilst the central portion has a ~2 km strike length and correlates with an As anomaly and a Cu anomaly on its eastern side. Figure 5 provides a summary plan of the gold results.

Hexagon has recently acquired the maglag concentrates from the 2008 sampling programme, which have been held in storage. These have now been dispatched to Intertek in Perth and assays are currently pending.

Notably, a historic Gradient IP geophysical survey was carried out across approximately 25% of the strike of the newly defined geochemical anomalism (as shown in figure 2). From the survey a strong conductive and chargeable response was received coincident to geochemical anomalism and a mapped siliceous gossanous ridge. The response is interpreted to be potentially due to the presence of sulphides but may also be the result of conductive carbonaceous shales although these have not been mapped in the area.

Figure 4: Golden Crown South – gold in soil results.

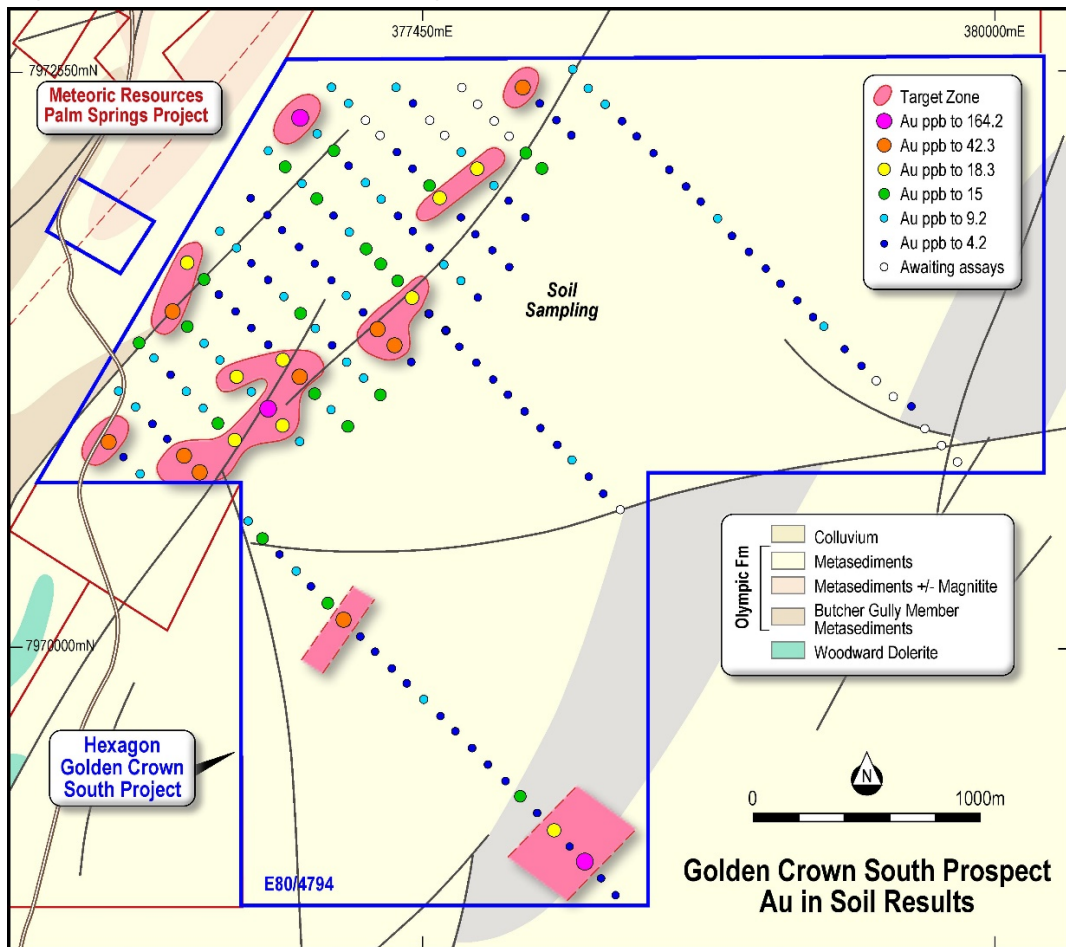
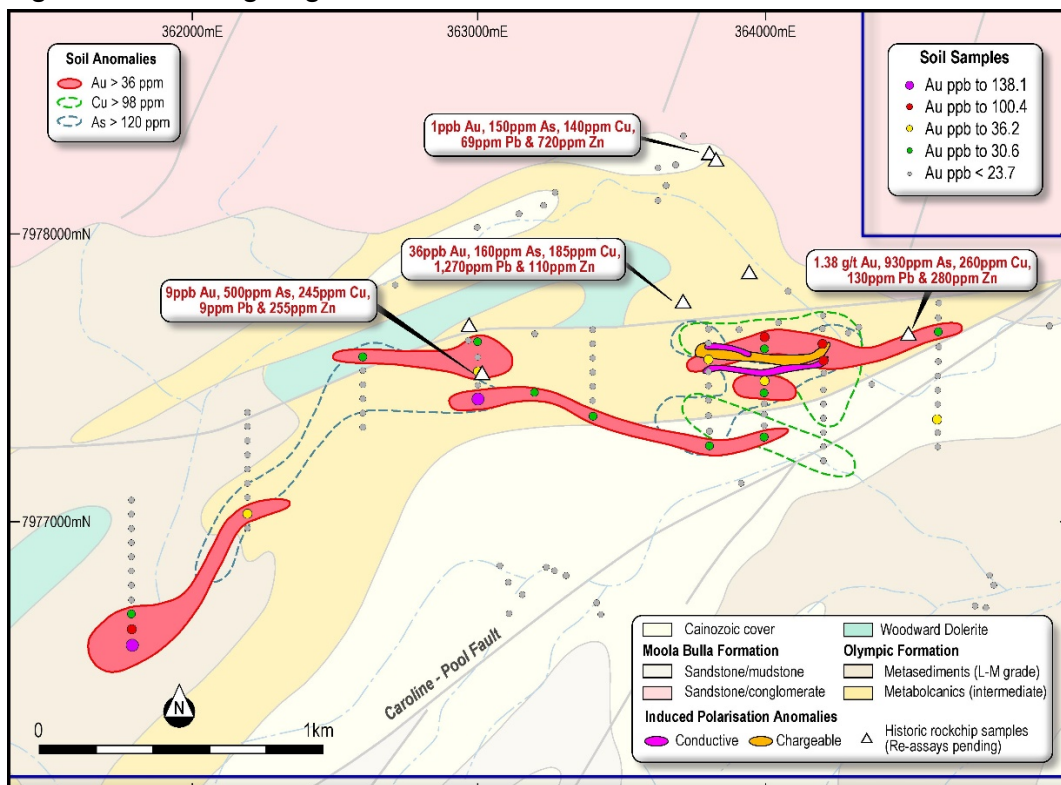


Figure 5: Bent Ridge – gold in soil results.



Interpretation

Golden Crown South

This is a new target zone with no historical anomalous gold results recorded.

The prospect lies within the Olympio Formation and is considered prospective for gold mineralisation based on proximal parallel gold-bearing structures. Gold mineralisation within the Olympio and Biscay Formations to the east of the Halls Creek Fault, is associated with quartz-carbonate veins.

Likewise, there has been limited historical mapping until the recently completed detailed geological mapping undertaken by Hexagon across the Halls Creek project and encompassing Gold Crown South has determined that the prospect appears to consist of two distinct domains;

- In the north-western high relief domain, the eastern ridge lines are apparent felsic volcanics with steeply dipping, strike parallel quartz breccia-veining of significant scale. Strain levels increase to the west with mapped large-scale stockwork quartz veining including flat dipping orientations and potential associated sericite alteration. Interestingly, similar flat dipping quartz stockworks can be seen at the historical Golden Crown mine to the north of the tenure. Assay Results for rock chip samples taken are pending and further infill and extensional soil sampling is planned for mid-October.
- The east portion comprises rolling hills topography made up of meta sediments – where occasional spot-high gold in soil assays were recorded. Some minor additional infill sampling work is planned in this area.

Bent Ridge

The prospect is being explored based on an orogenic gold mineralisation model analogous to other structurally controlled gold deposits in Halls Creek, where complex structural settings i.e. Caroline-Pool fault create sites for trapping mineralised fluids from deep seated crustal scale structures (Halls Creek Fault). The addition of the Woodward Dolerite which parallels the fault splay may also be responsible for mineralising fluids, particularly if there is elevated base metal values, as suggested by current soil and rock geochemistry.

Further Details are provided in accordance with the JORC Code in the attached Table 1

Competent persons' attributions

The information within this report that relates to exploration results, Exploration Target estimates and geological data at the Halls Creek Projects is based on information generated and compiled by Mr Mike Atkinson who is a Consultant to the Company and Mr Mike Rosenstreich, a full-time employee of the Company. Mr Atkinson is a Member of the Australian Institute of Geoscientists and Mr Rosenstreich is a Fellow of the Australian Institute of Mining and Metallurgy. Both, have sufficient experience relevant to the styles of mineralisation and types of deposits under consideration and to the activities currently

being undertaken to qualify as a Competent Person(s) as defined in the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves and they both consent to the inclusion of this information in the form and context in which it appears in this report.

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About Hexagon Energy Materials Limited

Hexagon Energy Materials Limited (ASX:HXG) is an Australian energy materials business focused on rare earths and graphite processing for the growing e-mobility and renewable energy sectors.

Hexagon anticipates commercialising RapidSX™, a state-of-the-art approach to rare earth elements (REE) separation that enables faster processing times at significantly lower capital expenditure costs.

Hexagon is also exploring for gold, nickel-copper and graphite at its two wholly-owned exploration assets in Western Australia, the Halls Creek Gold Project and the McIntosh Project.

To learn more please visit: <https://hxgenergymaterials.com>

This announcement has been authorised by Mike Rosenstreich, Managing Director.

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Appendix 1: JORC Table 1 Hall Creek

Section 1 Sampling Techniques and Data

Criteria	JORC Code Explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> 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. 	<p>Soil Samples</p> <ul style="list-style-type: none"> A single sample was collected at each individual sample point. The sample was sieved on site at the sample location. into a fine and coarse fraction and placed into seal-lock plastic sample bags and assigned a unique sample number with; suffix A for <2mm fine fraction and suffix B for >2mm <4mm coarse fraction, +4mm fraction was discarded.
Drilling Techniques	<ul style="list-style-type: none"> 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). 	<ul style="list-style-type: none"> Not applicable
Drill sample recovery	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Sample Recovery was not recorded on site, with sample weights recorded at the laboratory in Perth
Logging	<ul style="list-style-type: none"> 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 intersections logged. 	<ul style="list-style-type: none"> Samples were logged for colour, depth of sample, and type of soil profile
Sub-sample techniques and sample preparation	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> The sample was sieved on site at the sample location into a fine and coarse fraction and placed into seal-lock plastic sample bags and assigned a unique sample number with; suffix A for <2mm fine fraction and suffix B for >2mm <4mm coarse fraction A field duplicate was taken once every 25 samples, no CRM or Blank material was submitted
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> The Fine Fraction "Suffix A" samples were analysed at Intertek Genalysis in Perth, after drying and sieved to <50µm (Lab code SV23). The sieved samples were digested by Aqua Regia and analysed for a multielement suite by MS (Lab Code AR10e/33MS) No external CRM or Blank material was submitted, a field duplicate were submitted once in every 25 samples.

Verification of sampling and assaying	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> No independent data verification procedures were undertaken other than the QA/QC mentioned above. Field data is entered into spreadsheets and copies sent to head office each day and imported into the main HXG externally managed access database.
Location of Data points	<ul style="list-style-type: none"> Accuracy and quality of surveys used to locate drillholes (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. 	<ul style="list-style-type: none"> Sample location hole coordinate information was collected by sampling contractor personal. Using handheld Garmin 64S GPS utilising GDA 94 Zone 52. Positions are accurate to +/-3m horizontal and +/-10m vertical. Coordinates are referenced to the Map Grid of Australia (MGA) zone 52 on the Geographic Datum of Australia (GDA94).
Data spacing and distribution	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Golden Crown South: sampling grid was designed on a 110° orientated lines, 200m apart with sample spacing of 100m. Bent Ridge: sampling designed on North-South lines with sample spacing of 50m. No data composition has been applied Soil Sampling is considered indicative of underlying mineralisation, but drilling will be required to confirm exact location, tenor and style of mineralisation.
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> 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 bias, this should be assessed and reported if material. 	<ul style="list-style-type: none"> The sampling lines were designed to be at right angles to the general trend of the stratigraphy in the prospect areas.
Sample Security	<ul style="list-style-type: none"> The measures taken to ensure sample security. 	<ul style="list-style-type: none"> Chain of custody was managed by HXG, with no issues.
Audits or reviews	<ul style="list-style-type: none"> The results of any audits or reviews of sampling techniques and data. 	<ul style="list-style-type: none"> No audits have been undertaken.

Section 2 Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul style="list-style-type: none"> 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. <p>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.</p>	<ul style="list-style-type: none"> The Halls Creek Project (C124/2014) is in the East Kimberley region of Western Australia and comprises eleven granted tenements covering an area of 571 km². The tenements are 100% owned by HXG's 100% subsidiary, Halls Creek Resources Pty Ltd. The tenement package consists of a combination of three Exploration and eight Prospecting Licences.
Exploration done by other parties	<ul style="list-style-type: none"> Acknowledgment and appraisal of exploration by other parties. 	<ul style="list-style-type: none"> The project has been subject to exploration by several companies over the past 40 years. This work has been built up by successive explorers.
Geology	<ul style="list-style-type: none"> Deposit type, geological setting and style of mineralisation. 	<ul style="list-style-type: none"> The Halls Creek Project Prospecting Licences lie within the Palaeoproterozoic metamorphosed volcanics and sediments from the Halls Creek Orogeny. These include metamorphosed basalts, volcanic, sub-volcanic and volcanoclastic rocks and metamorphosed turbidites, calcareous rocks and cherts commonly displaying schistose fabrics.

		<ul style="list-style-type: none"> The Exploration Licences extend over a far more extensive area to the west and northwest and comprise of granitic and subordinate gabbroic rocks (+/- minor metasedimentary hornfels from the Koonie Park Formation) to the north-west of the tenement, weakly porphyritic biotite monzogranite and syenogranite to the south of the tenements and an epidotic and chloritic amygdaloidal basalt intrusion with minor lithic sandstone and siltstone along its western boundary.
Drill hole Information	<ul style="list-style-type: none"> A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drillholes: <ul style="list-style-type: none"> easting and northing of the drillhole collar elevation or RL (elevation above sea level in metres) of the drillhole collar dip and azimuth of the hole down hole length and interception depth hole length. 	<ul style="list-style-type: none"> See location figures within this announcement for details of sample locations
Data aggregation methods	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> No weighting has been applied.
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> No assumptions have been made as to the relationship between auger soil sample grades, anomaly size or orientation and underlying mineralisation widths. Further work will be required to identify and quantify any significant mineralisation in the area highlighted by the soil sampling.
Diagrams	<ul style="list-style-type: none"> 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 drillhole collar locations and appropriate sectional views. 	<ul style="list-style-type: none"> Location plans are contained within the body of this announcement.
Balanced reporting	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Appropriate plans are included within this release
Other substantive exploration data	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> All exploration results are reported.
Further work	<ul style="list-style-type: none"> The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling). 	<ul style="list-style-type: none"> Infill sampling program at Bent Ridge and Golden Crown South. First pass drilling at Bent Ridge and Golden Crown South prospects and potentially other targets subject to results and drill rig availability.