ASX Announcement

7 DECEMBER 2021

Great Boulder RESOURCES LIMITED

GREAT BOULDER / CSIRO SIDE WELL RESEARCH PROJECT UPDATE

HIGHLIGHTS

- **Collaborative research project "Exploration for gold through cover at the Side Well Gold Project" is on track for completion in early 2022**
  - **Hyperspectral mapping has identified key alteration minerals to map the Mulga Bill mineralised zone that are stable in the weathered profile**
  - **Mapping these minerals in shallow drilling under cover will identify a target at depth even though gold mineralisation is leached by weathering**
- **Petrographic photos indicate Mulga Bill ores should be amenable to conventional gravity and cyanide leach extraction**

Great Boulder Resources ("**Great Boulder**" or the "**Company**") (ASX: **GBR**) is pleased to provide an update on the collaborative scientific research project at the Side Well Gold Project ("**Side Well**") in Western Australia.

As announced to the market on 6 April 2021[1] a collaborative research project with Australia's national science agency, CSIRO, is underway at Side Well aiming to define techniques for gold exploration beneath transported cover. This 12-month project funded by Great Boulder and the Innovation Connections service of the Australian Government's Entrepreneurs' Programme, is led by Dr Walid Salama, Senior Research Scientist at the CSIRO Australian Resources Research Centre in Perth.

Dr Salama's work has led to important breakthroughs in understanding the style of mineralisation at Mulga Bill by mapping the hydrothermal halo around mineralisation in the upper weathering profile using hyperspectral analyses. Dr Salama has been able to identify the target zone even when the gold has been leached out during weathering. This observation has the potential to greatly reduce exploration costs in deeply weathered areas like Mulga Bill, as target areas can be tested with shallow drilling into the clay zone immediately below transported cover and exploration fairways defined using hyperspectral analysis as a proxy for gold assays in leached horizons.

A similar relationship is evident in fresh rock, where the mineralised zone is characterised by the presence of pure iron-rich chlorite. Pure high Fe chlorite has also been confirmed by calculated mineralogy using geochemical assays. This combination of iron-rich chlorite at depth and a bleached

[1] ASX announcement 6 April 2021 (ASX:GBR) "CSIRO Research Project underway at Side Well"

upper saprolite horizon containing remnant iron-rich chlorite provides two diagnostic alteration markers for mineralisation.

GBR will now separately assess if the abundance of pure chlorite can be used as a proxy for gold assays by using the same mathematical distribution function which the gold assays describe.

Great Boulder intends to build on this discovery, with further work planned in 2022 to look at field-portable hyperspectral analysis of drill samples. If the spatial correlation between hydrothermal indicator minerals and gold mineralisation is strong and reliable enough, hyperspectral scanning has the potential to identify mineralisation *at the rig*, without the current lengthy wait for gold assays. This will allow GBR's field team to make fast drilling decisions, maximising rig efficiency and reducing unnecessary drilling.

A second outcome of Dr Salama's work is the recognition that gold within the high-grade, pyrite-rich quartz veins sits on the margins of, or cracks within, pyrite. Examples of this can be seen in Figure 1, showing two microscope photographs of sulphide grains from high-grade sample SW04651 from hole 21MBRC002. This observation is significant as it suggests the gold should be easily recoverable by conventional gravity and cyanide leach techniques. Great Boulder intends to commission initial metallurgical test work on samples of RC chips in the New Year.

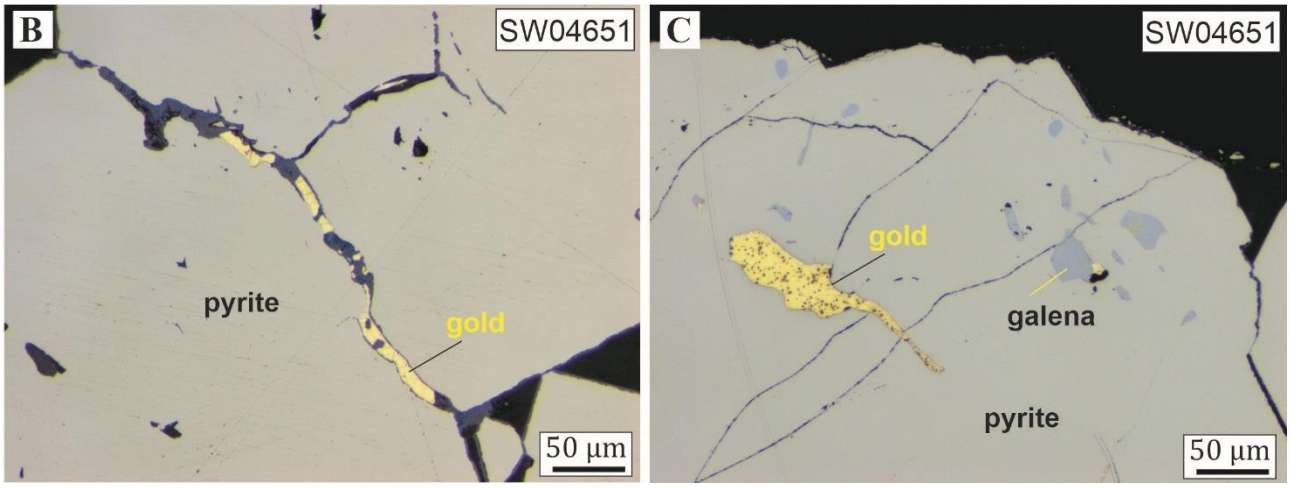

FIGURE 1: POLISHED SECTION PETROGRAPHY OF SAMPLE SW04651 (21MBRC002; 136.46G/T AU) SHOWS GOLD DISTRIBUTION ON CRACKS AND MARGINS ADJACENT TO PYRITE GRAINS. IMAGES COURTESY OF DR WALID SALAMA, CSIRO.

Great Boulder's Managing Director, Andrew Paterson commented:

"These observations by Dr Salama and his team provide an important breakthrough in our understanding of the gold mineralisation at Mulga Bill and the related alteration halos around the gold. Even though we are dealing with deep weathering, leached soils and a layer of transported cover Dr Salama has been able to identify indicator mineral species that remain stable during the weathering process.

Dr Salama's work supports the geochemical observations we've made earlier this year with Dr Scott Halley. Although hyperspectral analysis won't replace conventional assays for quantitative gold estimation, it does have the potential to speed things up in the field.

This is another example of Great Boulder using cutting-edge geoscience to maximise our exploration efficiency."

This announcement has been approved by the Great Boulder Board.

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Competent Person's Statement

Exploration information in this Announcement is based upon work undertaken by Mr Andrew Paterson who is a Member of the Australasian Institute of Geoscientists (AIG). Mr Paterson has sufficient experience that 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' (JORC Code). Mr Paterson is an employee of Great Boulder Resources and consents to the inclusion in the report of the matters based on their information in the form and context in which it appears.

FIGURE 2: DIAMOND DRILLING AT MULGA BILL

About Great Boulder Resources

Great Boulder is a mineral exploration company with a portfolio of highly prospective gold and base metals assets ranging from greenfields through to advanced exploration located in Western Australia. The Company's core focus is advancing the Whiteheads and Side Well gold projects while progressing initial exploration at the earlier stage Wellington Base Metal Project located in an emerging MVT province. With a portfolio of highly prospective assets plus the backing of a strong technical team, the Company is well positioned for future success.

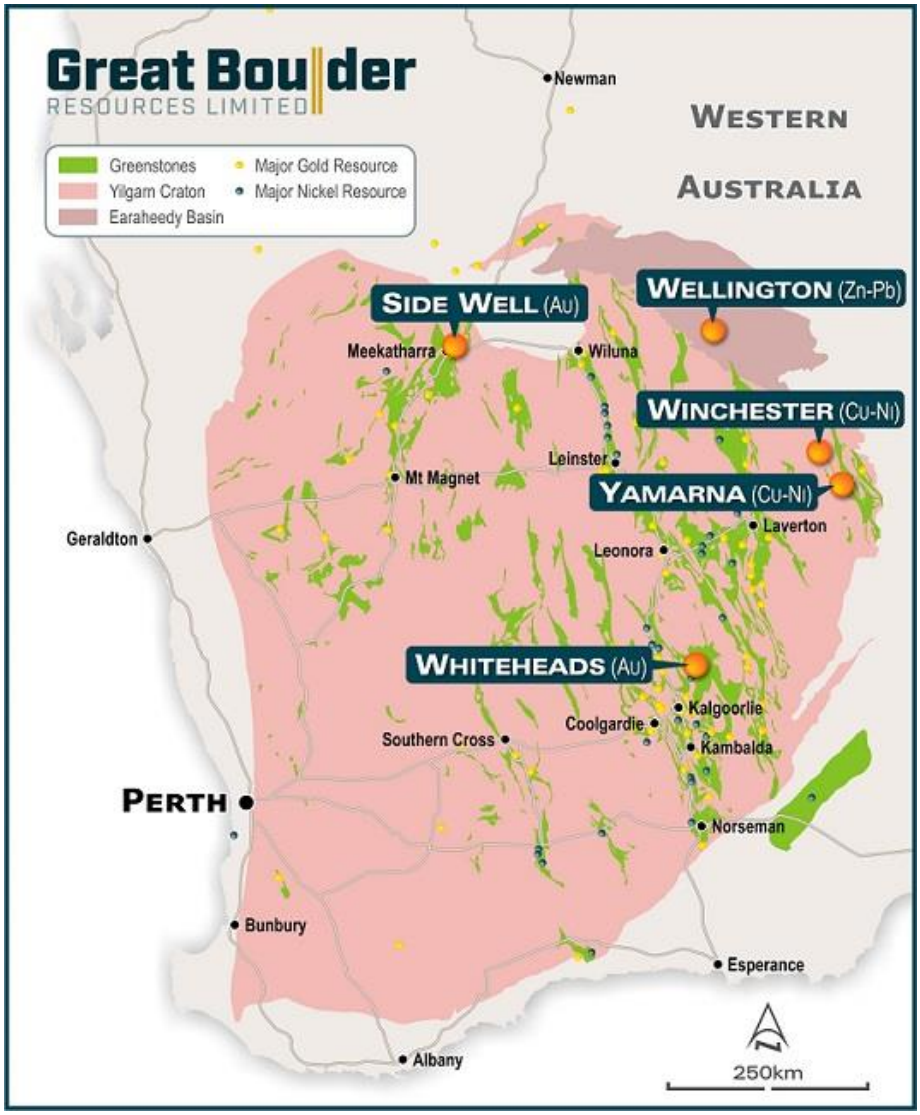

FIGURE 3: GREAT BOULDER'S PROJECTS

Appendix 1 - JORC Code, 2012 Edition Table 1

Section 1 Sampling Techniques and Data

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

Criteria	Commentary
Sampling techniques	RC samples were collected into calico bags over 1m intervals using a cyclone splitter. The residual bulk samples are placed in lines of piles on the ground. 2 cone splits are taken off the rig splitter for RC drilling. Visually prospective zones were sampled over 1m intervals and sent for analysis while the rest of the hole was composited over 4m intervals by taking a spear sample from each 1m bag. Core sample intervals were selected based on geological logging, cut and collected in calico bags. Multi-element samples are submitted every 30m down-hole and at end of hole. The sampling techniques used are deemed appropriate for the style of exploration.
Drilling techniques	AC, RC and Diamond drilling has been undertaken by a number of different contractors under GBR's supervision. Industry standard drilling methods and equipment were utilised.
Drill sample recovery	Sample recovery data is noted in geological comments as part of the logging process. Sample condition has been logged for every geological interval as part of the logging process. Significant ground water was encountered in drilling which resulted in numerous wet samples. No quantitative twinned drilling analysis has been undertaken.
Logging	Geological logging of drilling followed established company procedures. Qualitative logging of samples includes lithology, mineralogy, alteration, veining and weathering. Abundant geological comments supplement logged intervals.
Sub-sampling techniques and sample preparation	1m cyclone splits and 4m speared composite samples were taken in the field. Samples were prepared and analysed at Genalysis Assay Laboratories Perth. Samples were pulverized so that each samples had a nominal 85% passing 75 microns. Au analysis was undertaken using FA50/OE involving 50g lead collection fire assay and Inductively Coupled Plasma Optical Emission Spectrometry (ICP-OES) finish. Multi-element samples are submitted for analysis of a 48-element suite using 4A/MS.
Quality of assay data and laboratory tests	All samples were assayed by industry standard techniques.
Verification of sampling and assaying	The standard GBR protocol was followed for insertion of standards and blanks with a blank and standard inserted per 40 samples. No QAQC problems were identified in the results. No twinned drilling has been undertaken. The gravity data was checked and verified independently by a consulting geophysicist.
Data spacing and distribution	The spacing and location of the majority of drilling in the projects is, by the nature of early exploration, variable. The spacing and location of data is currently only being considered for exploration purposes.
Orientation of data in relation to geological structure	Drilling is dominantly perpendicular to regional geological trends where interpreted and practical. True width and orientation of intersected mineralisation is currently unknown or not clear. The spacing and location of the data is currently only being considered for exploration purposes.
Sample security	GBR personnel were responsible for delivery of samples from the drill site to the courier dispatch center in Meekatharra. Samples were transported by Toll Intermodal from Meekatharra to the laboratory in Perth.
Audits or reviews	Data review and interpretation by an independent consulting geophysicist and geochemist.

Section 2 Reporting of Exploration Results

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

Criteria	Commentary
Mineral tenement and land tenure status	Side Well tenement E51/1905 is a 48-block exploration license covering an area of 131.8km2 immediately east and northeast of Meekatharra in the Murchison province. The tenement is a 75:25 joint venture between Great Boulder and Zebina Minerals Pty Ltd.
Exploration done by other parties	Tenement E51/1905 has a protracted exploration history but is relatively unexplored compared to other regions surrounding Meekathara. The Explroation history by previous explorers has been described in the technical section of the announcement.
Geology	The Side Well tenement group covers a portion of the Meekatharra-Wydgee Greenstone Belt north of Meekatharra, WA. The north-north-easterly trending Archaean Meekatharra-Wydgee Greenstone Belt, comprises a succession of metamorphosed mafic to ultramafic and felsic and sedimentary rocks belonging to the Luke Creek and Mount Farmer Groups. Over the northern extensions of the belt, sediments belonging to the Proterozoic Yerrida Basin unconformably overlie Archaean granite-greenstone terrain. Structurally, the belt takes the form of a syncline known as the Polelle syncline. Younger Archaean granitoids have intrusive contacts with the greenstone succession and have intersected several zones particularly in the Side Well area. Within the Side Well tenement group, a largely concealed portion of the north-north-easterly trending Greenstone Belt is defined, on the basis of drilling and airborne magnetic data, to underlie the area. The greenstone succession is interpreted to be tightly folded into a south plunging syncline and is cut by easterly trending Proterozoic dolerite dykes. There is little to no rock exposure at the Side Well prospect. This area is covered by alluvium and lacustrine clays, commonly up to 60 metres thick.
Drill hole Information	N/A – no specific drill holes are discussed in this announcement. A list of the drill holes reported to the ASX in previous announcements by the company are available on the ASX website or at www.greatboulder.com.au and include tables of collar coordinates, orientations and intersections as well as JORC Table 1 information relevant to each announcement.
Data aggregation methods	Results were reported using cut-off levels relevant to the sample type. For composited samples significant intercepts were reported for grades greater than 0.1g/t Au with a maximum dilution of 4m. For single metre splits, significant intercepts were reported for grades greater than 0.8g/t Au with a maximum dilution of 2m. A weighted average calculation was used to allow for bottom of hole composites that were less than the standard 4m and when intervals contain composited samples plus 1m split samples. No metal equivalents are used.
Relationship between mineralisation widths and intercept lengths	The orientation of structures and mineralisation is not known with certainty, but majority of the drilling drilling was conducted using appropriate perpendicular orientations for interpreted mineralisation. Diamond drilling has confirmed a mineralised intrusive body at Side Well has a near vertical dip and trends broadly north-south. Due to the wide spacing of drill lines exact orientation is not clear.
Diagrams	Refer to figures in announcement.
Balanced reporting	It is not practical to report all historical exploration results from the Side Well project. Selected historical intercepts have been re-reported by GBR to highlight the prospectivity of the region. Full drillhole details can be found in publicly available historical annual reports.
Other substantive exploration data	Subsequent to Doray Minerals Limited exiting the project in 2015, private companies have held the ground with no significant work being undertaken.
Further work	Further work is discussed in the document.