



CASSINI
RESOURCES LIMITED

ABN: 50 149 789 337
21 October 2014

ASX Announcement

Metallurgical Test Work Program Commences

- **Five hole diamond drilling program completed at Nebo and Babel**
- **Metallurgical consultants have commenced analysis**
- **Staged metallurgical test work program underway, starting with Nebo massive sulphide**
- **Program to confirm expected nickel and copper recoveries**

Cassini Resources Limited (ASX:CZI) ("Cassini" or the "Company") is pleased to announce the commencement of the metallurgical test work program at the 100% owned West Musgrave Project, located in Western Australia (the "Project").

The metallurgical test work will be a staged program testing up to seven different styles of mineralisation. This program is a far more detailed program than that completed by the previous operators, and is relevant to Cassini's higher-grade development strategy. Analysis of the higher-grade massive sulphide mineralisation from Nebo is being prioritised.

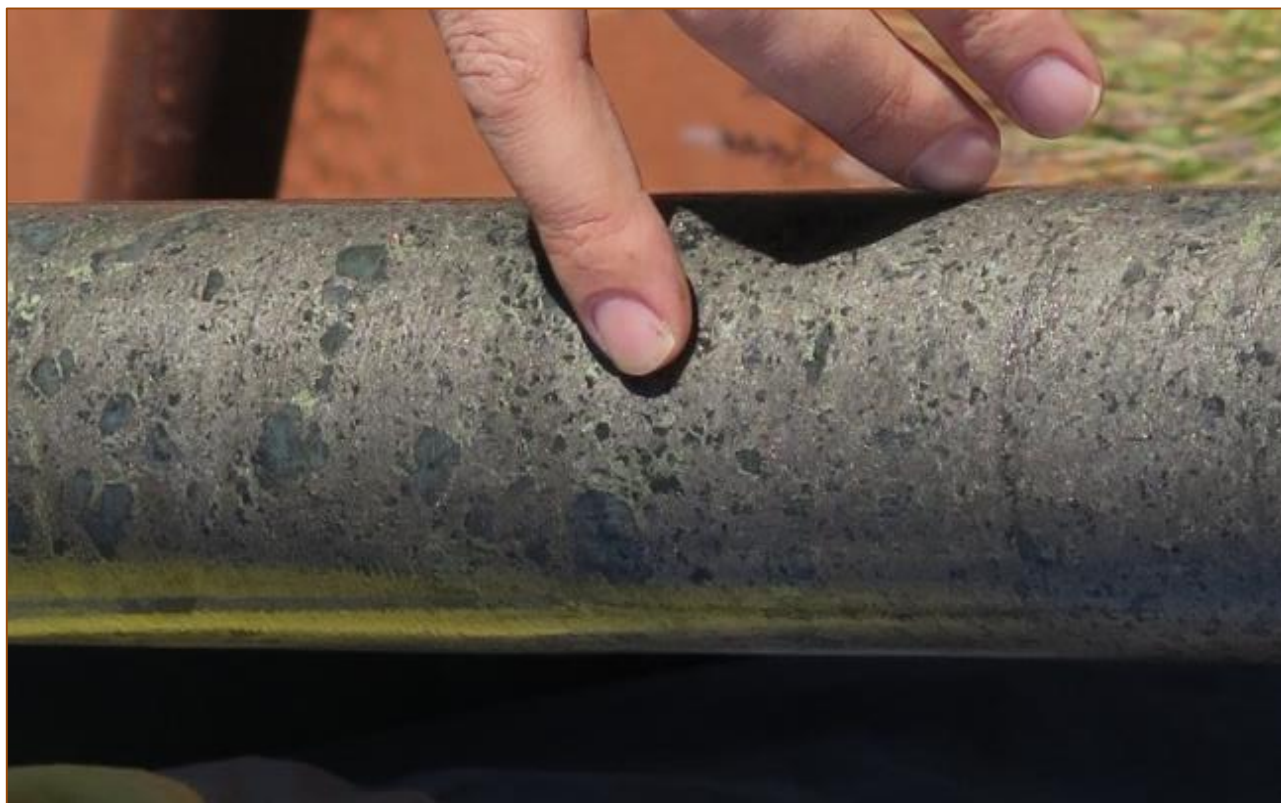


Figure 1. Massive sulphide core from Nebo showing coarse grained mineralisation.

Diamond Drilling Program Complete

Diamond drilling (“DD”) to obtain samples for the metallurgy program has now been completed. A total of five PQ core holes (600 metres in total) were drilled, targeting seven different styles of mineralisation at both Nebo and Babel. The last of the samples is currently being freighted to the laboratory in Perth.

Metallurgical Consultants Appointed

Strategic Metallurgy Pty Ltd (“SM”) has been appointed to manage the Company’s metallurgical test work program. SM has had recent nickel and copper test work experience with Sirius Resources Limited’s Nova-Bollinger deposit, an orebody with similar geological characteristics to Nebo-Babel.

SM successfully developed and demonstrated a processing flow sheet for a sulphide deposit containing chalcopyrite, pentlandite and pyrrhotite. This flow sheet uses a sulphide depressant to separate copper and nickel minerals, and to upgrade the nickel concentrate by selectively depressing pyrrhotite. This approach has proved to be effective and, at this early stage, SM believes a similar result can be attained for the West Musgrave ore.

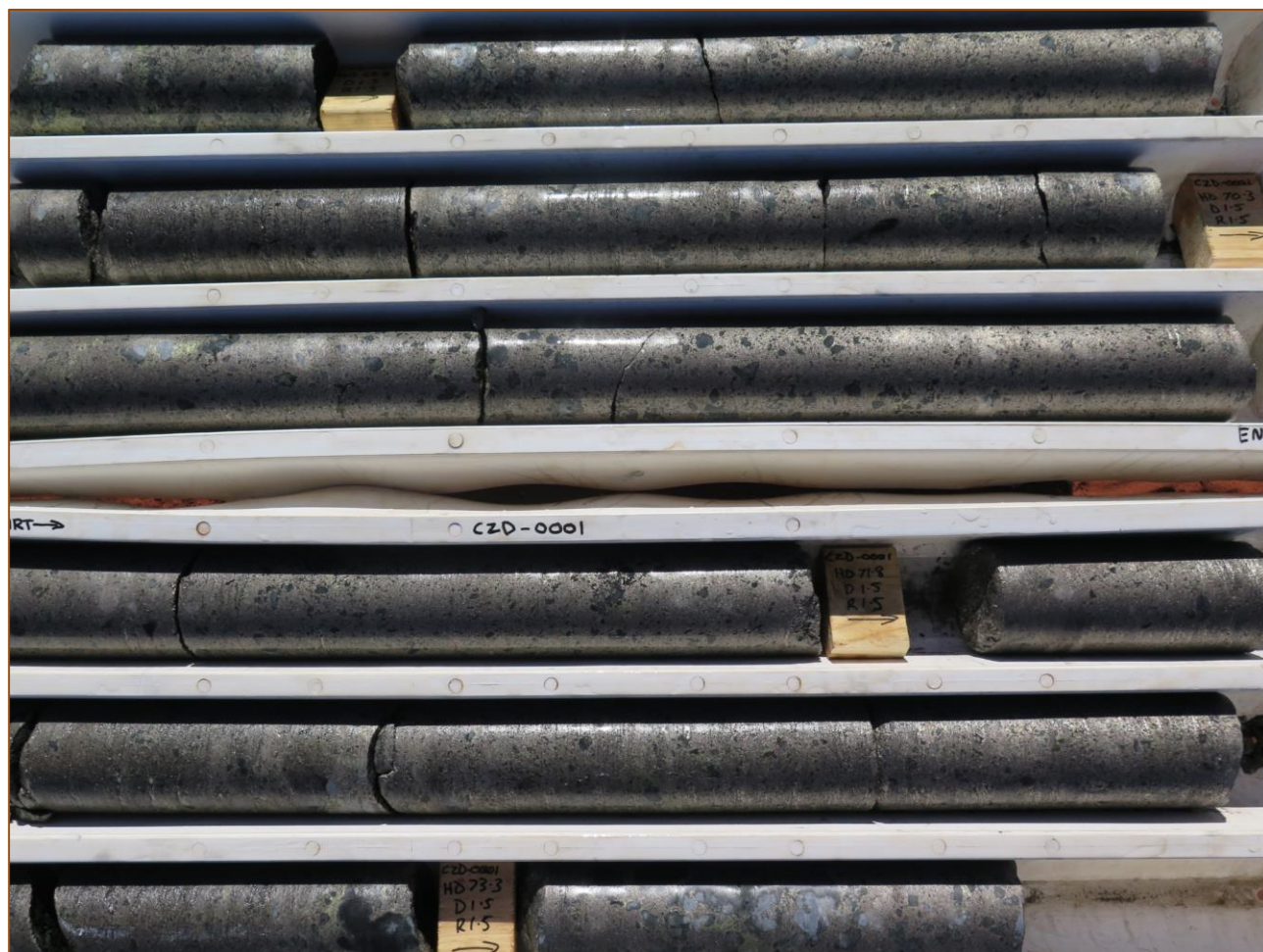


Figure 2. Massive Sulphide intercept in drill hole CZD0001.

Key Mineralisation Characteristics

The mineralogy of the Nebo-Babel deposit is comparable with other mafic intrusion-hosted systems such as Sudbury (Canada), Norilsk (Russia), Voisey's Bay (Canada) and Nova (Western Australia).

Key positive features consistent with these systems include:

- A high Iron/Magnesium (Fe/MgO) ratio. Concentrates low in MgO are attractive to smelters.
- Coarse, granular sulphides. Coarser material typically allows relatively easy separation of the metal-bearing sulphide component from the ore.
- A lack of significant levels of deleterious magnesium-rich minerals such as talc and fibrous serpentine that can be problematic in conventional processing circuits (impacting recoveries and concentrate quality).
- Low contents of penalty elements such as arsenic (As). Notably, in the entire Nebo-Babel drill hole database, only one sample with Ni > 0.2% contains >100ppb As.
- The presence of Cobalt and PGE mineralisation with potential to add credits to saleable concentrates.



Figure 3. Coarse pentlandite and chalcopyrite mineralisation with pyrrhotite.

Review of Historical Metallurgy Work

SM has reviewed the extensive database of existing metallurgical information on the Nebo-Babel deposits and arrived at the following conclusions:

- A metallurgical test work program designed specifically for Cassini's higher-grade strategy is warranted. This approach will be different to that historically tested for this ore.
- Cassini's focus on a higher-grade plant feed, centred on the massive ore components of the ore-bodies, coupled with new drill hole information from the current program, means there are a number of gaps in the historical work completed that need to be addressed.
- Potential exists to produce separate copper and nickel concentrates by using techniques not yet applied to the Project. For example Strategic have successfully used specific sulphide depression reagents to enhance the selective flotation of the different sulphide minerals in copper-nickel sulphide ores.
- A focussed program of work will result in comprehensive geo-metallurgical model of the two ore-bodies that will maximise the potential profitability of the Project.

SM believes that there is potential to produce separate copper and nickel concentrates from the Nebo and Babel ore bodies. Producing separate saleable copper and nickel concentrates will maximise the revenue potential. A conceptual flow sheet, intended to produce separate concentrates, has been proposed and is based both on typical properties of massive sulphide ore as well as existing flow sheets processing similar copper-nickel sulphide ores elsewhere around the world.

Although the Nebo massive sulphide ore is the initial focus of further work, the metallurgical properties of the other ore types will require investigation.



Figure 4. Night drilling operations at Babel.



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About Cassini

Cassini Resources Limited (ASX: CZI) is an Australian resource company that successfully listed on the ASX in January 2012. In April 2014, Cassini acquired the significant Nebo and Babel nickel and copper sulphide deposits in the Musgrave region of WA. The Company's primary focus is now on the development of these deposits and progressing them through to successful mineral production as a matter of priority.

Cassini aims to progress its development projects, to explore and add value to its exploration stage projects with the aim to increase shareholder value.

Nebo – Babel Inferred Mineral Resource Estimate									
Prospect	Cut-off Ni%	Mt	Ni%	Cu%	As ppm	Co ppm	Fe %	MgO %	S %
Nebo	0.2	84	0.39	0.31	3	153	9.5	5.9	2.5
Babel	0.2	362	0.32	0.36	3	118	9.9	7.8	2.1
Total	0.2	446	0.33	0.35	3	125	9.9	7.4	2.2
Nebo	0.5	15.9	0.82	0.48	3	323	14.2	3.7	5.6
Babel	0.5	17.3	0.64	0.70	3	196	12.9	6.0	4.4
Total	0.5	33.2	0.73	0.59	3	257	13.5	4.9	5.0

Competent Persons Statement

The information in this report that relates to Exploration Results and Mineral Resource Estimates is based on information compiled or reviewed by Mr Greg Miles, who is an employee of the company. Mr Miles is a Member of the Australian Institute of Geoscientists and has sufficient experience of relevance to the styles of mineralisation and the types of deposits under consideration, and to the activities undertaken, to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Miles consents to the inclusion in this report of the matters based on information in the form and context in which it appears.

The Company is not aware of any new information or data, other than that disclosed in this report, that materially affects the information included in this report and that all material assumptions and parameters underpinning Mineral Resource Estimates as reported in the market announcement dated 14th of April 2014 continue to apply and have not materially changed.