

## ACTIVITIES REPORT FOR THE QUARTER ENDED 30 SEPTEMBER 2015

### QUARTER HIGHLIGHTS:

- *Successful exploration drilling campaign completed at West Musgrave Project*
- *Succoth Cu mineralisation extended to over 1,000m down-plunge*
- *High-grade copper mineralisation discovered at One Tree Hill Prospect*
- *Massive sulphides with nickel mineralisation intersected at Esagila Prospect*
- *Cost effective elements of Nebo-Babel Pre-Feasibility Study continue to progress well, with a focus on reducing capital and operating costs*
- *Cassini acquires 100% of X17 Prospect, West Arunta, WA*
- *New interpretation of soil geochemistry at X17*

During the September quarter Cassini continued to progress cost effective elements of its Nebo-Babel nickel-copper project (**Project**) and has undertaken exploration of the most high priority regional targets.

The rate of progress of the Project is under continual review against the backdrop of a poor nickel and copper price environment. Cassini will support a capital management strategy which is in the best interests of the Company and its shareholders. Corporate costs are already very modest but continue to be minimised. As part of these measures, Managing Director Richard Bevan has elected to reduce his salary by 10% effective 1 December 2015.

Cash outflows for the next quarter will be reduced following the completion of the on-ground activities, including the exploration drilling program in September.

### West Musgrave Project (100% CZI)

#### Development

##### Nebo – Babel Pre-Feasibility Study

Steady progress has been made on the Nebo-Babel Pre-Feasibility Study which commenced in June 2015. A detailed review of cost reduction opportunities identified in the Scoping Study has commenced. This includes:

- Reviewing capital and operating cost estimates given the more competitive contracting and supply market prevailing in the industry;
- Reviewing concentrate logistics options to identify alternative transport routes to lower costs and risks;

- Carrying out additional modelling of mining scenarios using Whittle pit optimisation and pit stage sequencing at various nickel prices to enable various project scale – project return scenarios to be modelled; and
- Considering and evaluating renewable power supply options for the Project to reduce long term power supply costs and Cassini's reliance on diesel generation.

The results of this work are expected to be completed during the December quarter.

In addition, the Company is also defining the work required to deliver a robust Pre-Feasibility Study (PFS), including:

- Designing a metallurgy program for both Pre-Feasibility and Definitive Feasibility Studies, recognising the ideal approach to reduce technical risk is to bring forward considerably more metallurgical test work into the PFS than would usually be the case. This approach will result in the PFS taking longer to complete but will ultimately result in a more robust PFS, and a shorter timeframe to complete the DFS;

To this end, Cassini has engaged Golder Associates to construct a geo-metallurgical model to assist drill program design and to ensure representative test work samples are collected. The Company is finalising the design of the program and then will be seeking tenders for drilling and metallurgical test work;

- Evaluating and designing a water supply and groundwater test work program for implementation in the new calendar year;
- Designing a geotechnical drilling program to establish pit design parameters for use in subsequent optimisation work; and
- Design and cost the anticipated environmental approvals program for the project, including; determination of environmental risks; developing an environmental approvals strategy; preparation of a project development schedule; and estimated costs.

## Exploration

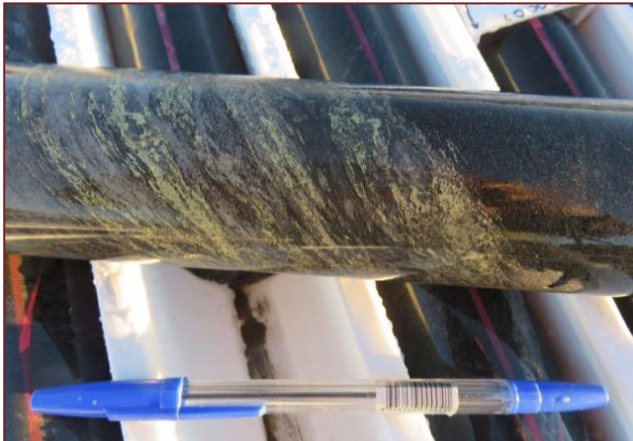
### Exploration drilling program completed

During the quarter the Company completed an exploration drilling program targeting several prospects. A total of four diamond drill holes for 1,751m were drilled at the Succoth, One Tree Hill and Esagila Prospects (Table 1).

#### Succoth Prospect

Succoth is an advanced copper exploration prospect located only 13km from the Nebo-Babel Deposits. Recent re-interpretation of historical drill core from over 30 holes, and the remodelling of surface and down hole geophysics (DHEM), has identified a potential controlling structure which hosts numerous EM conductors. This work has resulted in the delineation of a significant new DHEM anomaly, with a modelled plate conductance consistent with a sulphide source (>2000 S).

Drill hole CZD0007 was drilled to test the DHEM conductor which intersected a thick mineralised zone represented by stringer sulphides within a strongly foliated taxitic rock (Figure 1). Taxites are variably textured rocks that are typically closely associated with mafic-intrusion hosted Ni-Cu-PGE sulphide mineralisation. The mineralised zone returned 59.6m @ 0.73% Cu from 555.5m, extending the continuous body of mineralisation over 1,000 m down plunge. The Company is also encouraged by a narrow veinlet of massive chalcopyrite (Figure 2) which returned 0.07m @ 14.1% Cu with 1.8g/t of Au + Pt + Pd. This result provides evidence that massive sulphides are present within the Succoth mineralised system.



**Figure 1.** Stringer chalcopyrite (2.02% Cu) at 614m



**Figure 2.** High grade veinlet of chalcopyrite (14.1% Cu) at 599m.

The Company has significantly improved its geological understanding of the Succoth Prospect based on the results from this drill hole.

Importantly, three distinct styles of mineralisation are now recognised:

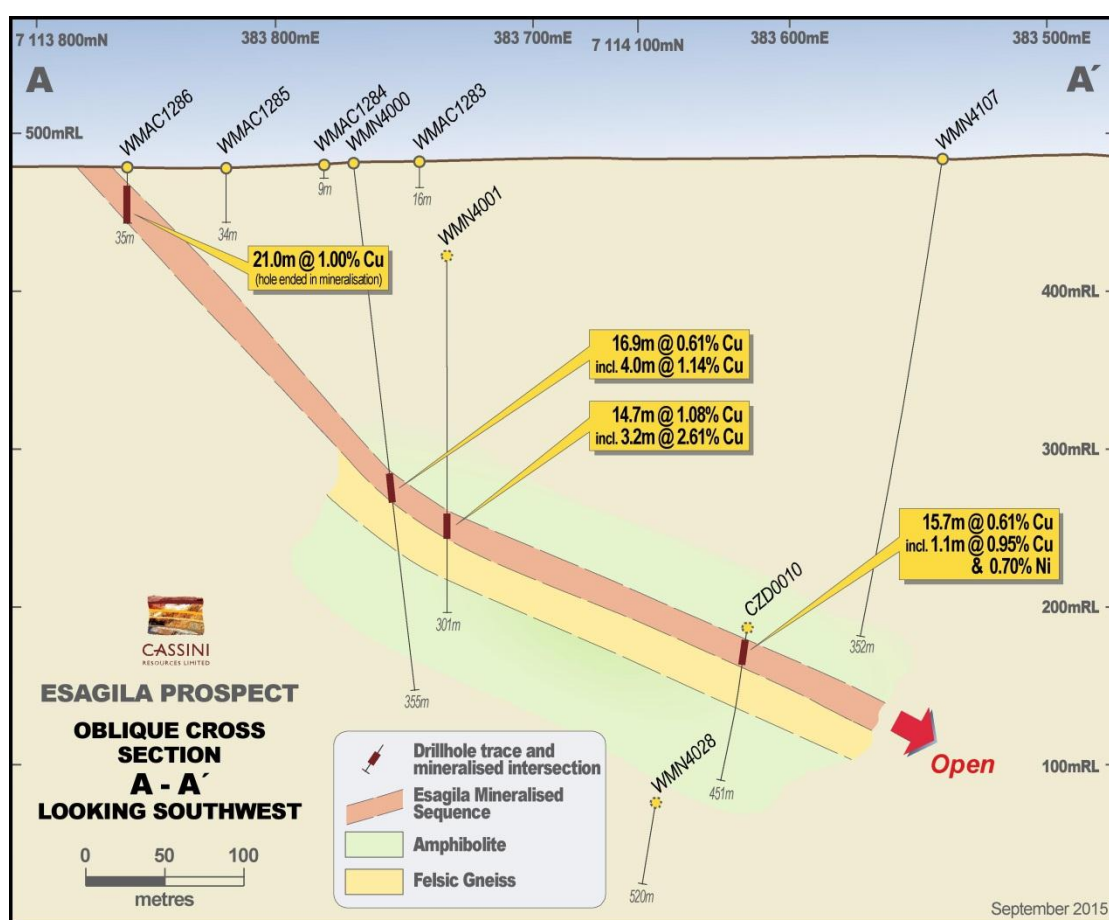
1. Broad zones of taxite-hosted disseminated chalcopyrite-pyrrhotite mineralisation;
2. Stringer chalcopyrite-rich mineralisation, mostly associated with the Joppa Fault; and
3. A “massive” style of high-grade Cu-PGE mineralisation.

This third style of mineralisation remains the highest-value exploration target at Succoth and will be the focus of future exploration at Succoth.

## Esagila Prospect

The Esagila Prospect is located only 4 km from the Succoth Prospect and is interpreted as part of the same mineralised intrusive complex that covers an area of approximately 65km<sup>2</sup>. Esagila was discovered in 2009 following surface electromagnetic (EM) surveys, but remains under-explored. CZD0010 targeted an untested EM conductor approximately 200m from historical hole WMN4001 which returned 14.7m @ 1.08% Cu (Figure 3).

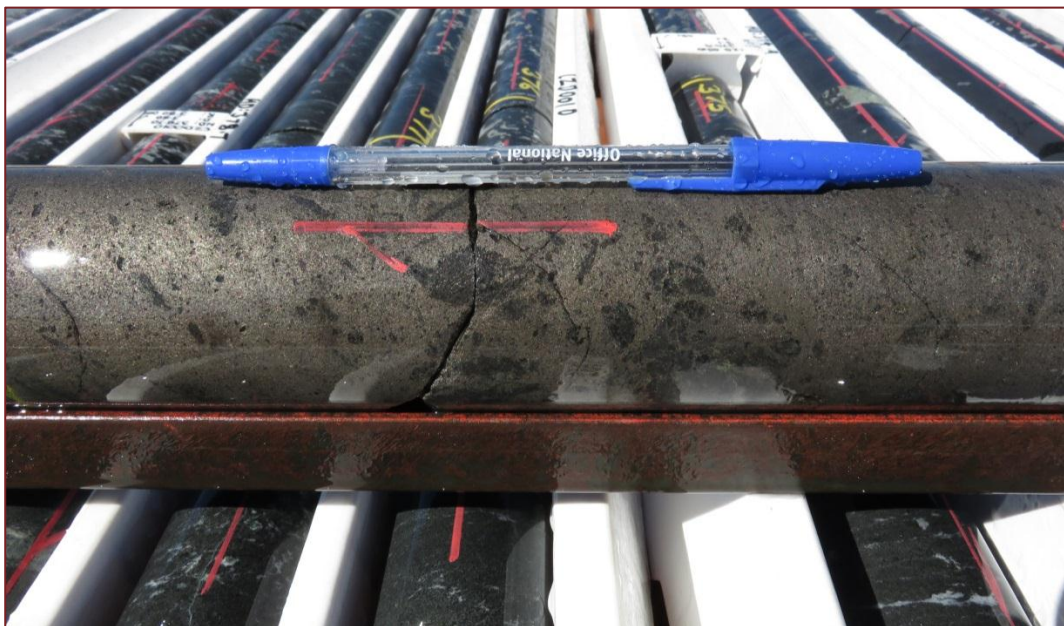
The Company is excited by a thick zone of mineralisation that was intersected in CZD0010, representing the best massive nickel sulphide intersection outside of the Nebo-Babel deposits since acquiring the Project in April 2014. CZD0010 returned 15.7m @ 0.61% Cu and 0.12% Ni from 346.0m including 1.1m @ 0.70% Ni and 0.95% Cu from 360.3m within the massive sulphide zone (Figure 4).



**Figure 3.** Long section of CZD0010 and adjacent drill holes

The style of mineralisation found in CZD0010 is representative of what sulphide liquid fractionation process may produce, albeit massive sulphides with a low Ni tenor. However, the Company believes that these intercepts can be used as a vector towards higher grade, nickel-rich, massive sulphide mineralisation along strike or at depth.





**Figure 4.** Nickel-bearing massive sulphides at 361.2m.

### **One Tree Hill Prospect**

The One Tree Hill prospect is located at the south western end of the West Musgrave project, about 13 km SW of Babel, and is associated with a major regional structural intersection. Only two historic holes had tested a surface EM anomaly identified by previous explorers with encouraging results of 0.4m @ 2.62% Cu from 152.6m. Importantly, significant PGE anomalism of 35m @ 0.11g/t Pt+Pd (including values up to 0.81 g/t Pt+Pd) were also intersected.

Cassini completed its first hole, CZD0008, at the One Tree Hill Prospect and intersected significant copper mineralisation over short intervals within a broad alteration zone. The hole targeted a number of poorly constrained surface and down hole EM anomalies that had not been fully tested by previous drilling.

Chalcopyrite veins in the upper parts of CZD0008 returned significant intercepts of 0.3m @ 10.1% Cu from 193.8m (Figure 5) and 0.4m @ 4.48% Cu from 250.9m. These veins also host traces of zinc sulphide (sphalerite) mineralisation.

Follow-up DHEM surveying of CZD0008 identified two very significant off-hole EM conductors with modelled conductance of around 100,000 Siemens. The conductors are interpreted to have complex 3-dimensional geometries and were narrowly missed by hole CZD0008 (Figure 6).

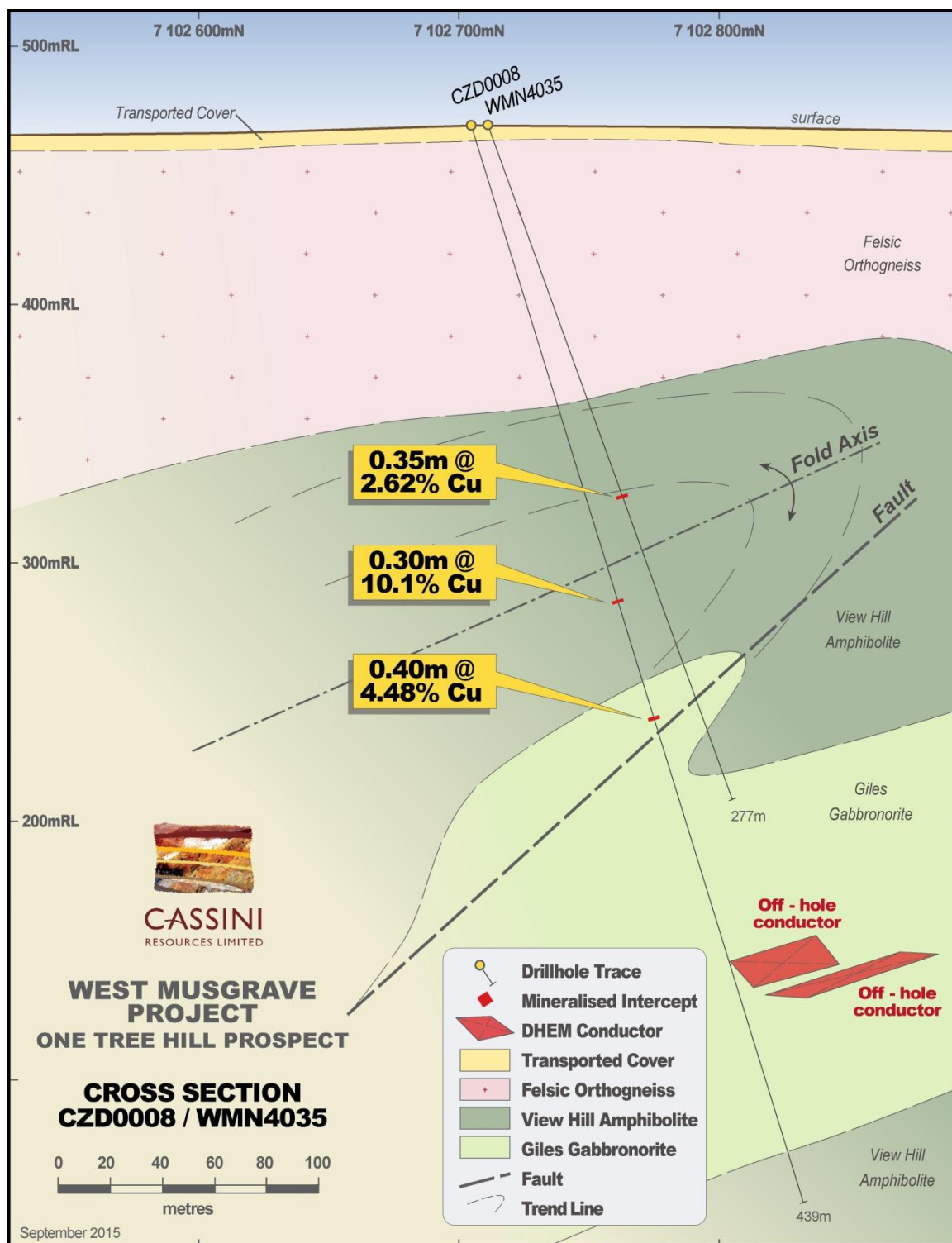


**Figure 5.** Massive chalcopyrite and pyrrhotite vein (10.1% Cu) cross cutting View Hill Amphibolite at 194m.

A second hole (CZD0009) has been completed at One Tree Hill targeting a shallow, near surface EM conductor approximately 350m along strike from CZD0008. The conductor appears to be associated with pyrite-pyrrhotite and trace chalcopyrite zone identical to the PGE anomalous zone in CZD0008. No significant results were returned however the hole will assist with interpretation and follow-up targeting of CZD0008.

Table 1. Exploration Drilling Significant Intercepts.

HOLE ID	East	North	RL	Dip	Azi	EOH (m)	Intersection				
							From (m)	Width (m)	Cu %	Ni %	PGE g/t
<b>CZC0007</b>	386280	7117790	487	-70	287	726.5	555.5	59.6	0.73	0.07	0.12
						Including	566.0	14.0	1.02	0.10	0.21
						And	597.6	2.1	1.63	0.08	0.22
						And	607.6	3.4	1.36	0.12	0.07
<b>CZC0008</b>	360370	7102705	481	-70	022	438.8	193.8	0.3	10.1	0.02	<0.01
						And	250.9	0.4	4.48	0.08	<0.01
<b>CZC0009</b>	360710	7102600	481	-58	031	135.1	No Significant Intercept				
<b>CZC0010</b>	383345	7114000	479	-60	070	450.7	346.0	15.7	0.61	0.12	0.09
						Including	360.3	1.1	0.95	0.70	0.15



**Figure 6.** Cross section of CZD0008 with WMN4035 showing DHEM conductors and drill results



## West Arunta Project (X17)

The West Arunta (or X17) Project is a highly prospective base and precious metals target in an underexplored region near Lake McKay in Western Australia. The Project is now 100% owned by Cassini, following the completion of a share sale agreement for the outstanding balance of Crossbow Resources Pty Ltd in July 2015.

Cassini collected approximately 1,000 soil and 260 lag geochemical samples on a broad-spaced, 1,000m x 500m grid over a conceptual target area in August 2014. The initial focus of this program was to establish evidence of IOCG-style Cu-Au mineralisation, however a more detailed recent technical review of the project has concluded that there is compelling evidence for a significant sediment-hosted Zn-Pb system of the type that includes Mt Isa, Red Dog and Teck Resources' recent Teena discovery in the Northern Territory.

Cassini was buoyed by early stage evidence of a major Zn-Pb mineral system present in both the soil and lag geochemical results. Four highly anomalous lag samples have been identified with a best result of 2210 ppm Zn in lag with coincident Zn, Pb and Cu soil anomalism. These anomalies occur in a distinct horizon of the Amadeus basin and are therefore compelling Mt Isa-style sediment-hosted Zinc targets.

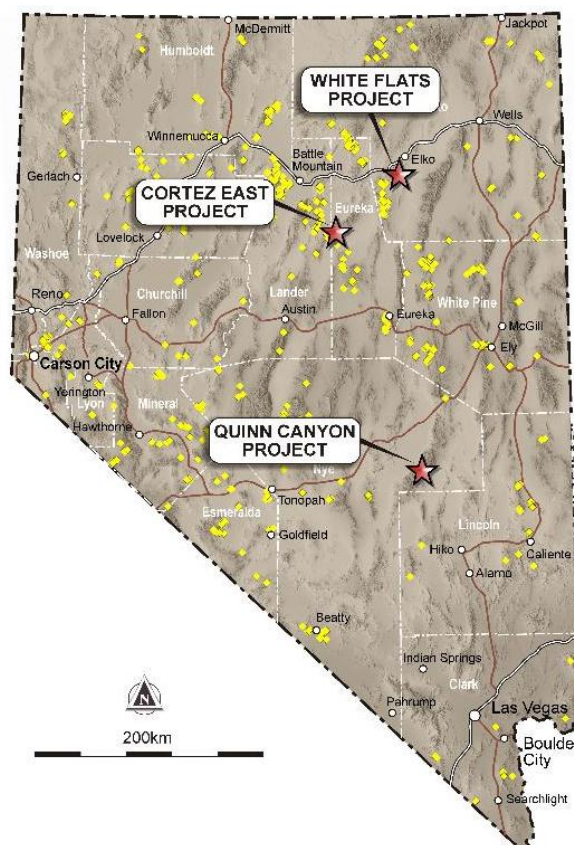
The Company is preparing for a reconnaissance mapping trip to the Project early next Quarter to validate the lag and soil geochemical results before planning the next phase of exploration.

## Nevada Gold Projects, USA

Cassini operates three projects in the State of Nevada, USA. The Nevada projects represent a near term opportunity for exploration success in one of the world's pre-eminent gold mining jurisdictions. Nevada is known as "Elephant Country" with seven +20Moz gold deposits and significant recent discoveries being made, despite 150 years of exploration (Long Canyon, Railroad, South Carlin, Spring Valley). Nevada is an exploration and mining friendly jurisdiction with good local infrastructure and a high level of exploration and mining expertise and knowledge.

During the quarter Cassini negotiated a significant reduction in the lease costs for the projects.

No field activities were conducted during the September Quarter.





*For further information, please contact:*

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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 progression 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.

## **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 25th of February 2015 continue to apply and have not materially changed.

Additional information regarding exploration drilling results can be found in ASX releases of 27 August 2015, 14 September 2015 and 29 September 2015.

## APPENDIX 1 – TENEMENT SUMMARY – 30 SEPTEMBER 2015

1. MINING TENEMENTS HELD				
Tenement Reference	Location	Nature of interest	Interest at beginning of quarter	Interest at end of quarter
<b>Existing West Musgrave</b>				
E69/3163	WA	Granted	100%	100%
E69/3169	WA	Granted	100%	100%
E69/3137	WA	Granted	100%	100%
E69/3164	WA	Granted	100%	100%
E69/3165	WA	Granted	100%	100%
E69/3168	WA	Granted	100%	100%
<b>Acquired West Musgrave</b>				
E69/1505	WA	Granted	100%	100%
E69/1530	WA	Granted	100%	100%
E69/2201	WA	Granted	100%	100%
E69/2313	WA	Granted	100%	100%
M69/72	WA	Granted	100%	100%
M69/73	WA	Granted	100%	100%
M69/74	WA	Granted	100%	100%
M69/75	WA	Granted	100%	100%
<b>Crossbow (X17)</b>				
E80/4749	WA	Granted	25%	100%
E80/4796	WA	Granted	25%	100%
E80/4813	WA	Granted	25%	100%
<b>Nevada</b>				
White Flats Project (12 claims)	Nevada	Leased	100% (leased)	100% (leased)
Cortez East (40 claims)	Nevada	Leased	100% (leased)	100% (leased)
Quinn Canyon (12 claims)	Nevada	Leased	100% (leased)	100% (leased)
Agate Pass (12 claims)	Nevada	Leased	100% (leased)	100% (leased)

2. MINING TENEMENTS ACQUIRED/DISPOSED				
Tenement Reference	Location	Nature of interest	Interest at beginning of quarter	Interest at end of quarter
<b><u>Acquired</u></b>				
E80/4749	WA	Granted	25%	100%
E80/4796	WA	Granted	25%	100%
E80/4813	WA	Granted	25%	100%
<b><u>Disposed</u></b>				

3. BENEFICIAL PERCENTAGE INTERESTS HELD IN FARM-IN OR FARM-OUT AGREEMENTS				
Tenement Reference	Location	Nature of interest	Interest at beginning of quarter	Interest at end of quarter
Nil				

4. BENEFICIAL PERCENTAGE INTERESTS HELD IN FARM-IN OR FARM-OUT AGREEMENTS ACQUIRED OR DISPOSED				
Tenement Reference	Location	Nature of interest	Interest at beginning of quarter	Interest at end of quarter
<b><u>Acquired</u></b>				
Nil				
<b><u>Disposed</u></b>				
Nil				

## Appendix 5B

### Mining exploration entity and oil and gas exploration entity quarterly report

Introduced 01/07/96 Origin Appendix 8 Amended 01/07/97, 01/07/98, 30/09/01, 01/06/10, 17/12/10, 01/05/2013

Name of entity

Cassini Resources Limited

ABN

50 149 789 337

Quarter ended ("current quarter")

30 September 2015

### Consolidated statement of cash flows

Cash flows related to operating activities		Current quarter \$A'000	Year to date (3 months) \$A'000
1.1	Receipts from product sales and related debtors	-	-
1.2	Payments for (a) exploration & evaluation	(1,387)	(1,387)
	(b) development	-	-
	(c) production	-	-
	(d) administration*	(502)	(502)
1.3	Dividends received	-	-
1.4	Interest and other items of a similar nature received	16	16
1.5	Interest and other costs of finance paid	-	-
1.6	Income taxes paid	-	-
1.7	Other (GST)	(43)	(43)
	<b>Net Operating Cash Flows</b>	<b>(1,916)</b>	<b>(1,916)</b>
<b>Cash flows related to investing activities</b>			
1.8	Payment for purchases of: (a) prospects	(75)	(75)
	(b) (i) equity investments	-	-
	(b) (ii) equity investments	-	-
	(c) other fixed assets	-	-
1.9	Proceeds from sale of: (a) prospects	-	-
	(b) equity investments	-	-
	(c) other fixed assets	-	-
1.10	Loans to other entities	-	-
1.11	Loans repaid by other entities	-	-
1.12	Other (stamp duty)	-	-
	<b>Net investing cash flows</b>	<b>(75)</b>	<b>(75)</b>
1.13	Total operating and investing cash flows (carried forward)	<b>(1,991)</b>	<b>(1,991)</b>

+ See chapter 19 for defined terms.



## Appendix 5B

### Mining exploration entity and oil and gas exploration entity quarterly report

1.13	Total operating and investing cash flows (brought forward)	(1,991)	(1,991)
	<b>Cash flows related to financing activities</b>		
1.14	Proceeds from issues of shares, options, etc.	-	-
1.15	Proceeds from sale of forfeited shares	-	-
1.16	Proceeds from borrowings	-	-
1.17	Repayment of borrowings	-	-
1.18	Dividends paid	-	-
1.19	Other (share issue costs)	-	-
	<b>Net financing cash flows</b>	-	-
	<b>Net increase (decrease) in cash held</b>	(1,991)	(1,991)
1.20	Cash at beginning of quarter/year to date	5,699	5,699
1.21	Exchange rate adjustments to item 1.20	-	-
1.22	<b>Cash at end of quarter</b>	<b>3,708</b>	<b>3,708</b>

### Payments to directors of the entity, associates of the directors, related entities of the entity and associates of the related entities

		Current quarter \$A'000
1.23	Aggregate amount of payments to the parties included in item 1.2	230
1.24	Aggregate amount of loans to the parties included in item 1.10	-
1.25	Explanation necessary for an understanding of the transactions Amount includes: - executive remuneration (including superannuation) - non-executive remuneration - geological and other consulting work provided to the Company - company secretarial and financial management fees to Grange Consulting, of which Mr Phil Warren is a director.	

### Non-cash financing and investing activities

2.1	Details of financing and investing transactions which have had a material effect on consolidated assets and liabilities but did not involve cash flows	n/a
2.2	Details of outlays made by other entities to establish or increase their share in projects in which the reporting entity has an interest	n/a

+ See chapter 19 for defined terms.

## Mining exploration entity and oil and gas exploration entity quarterly report

**Financing facilities available**

Add notes as necessary for an understanding of the position.

	Amount available \$A'000	Amount used \$A'000
3.1 Loan facilities	-	-
3.2 Credit standby arrangements	-	-

**Estimated cash outflows for next quarter**

	\$A'000
4.1 Exploration and evaluation	800
4.2 Development	-
4.3 Production	-
4.4 Administration	300
<b>Total</b>	<b>1,100</b>

**Reconciliation of cash**

Reconciliation of cash at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts is as follows.	Current quarter \$A'000	Previous quarter \$A'000
5.1 Cash on hand and at bank	3,708	5,699
5.2 Deposits at call	-	-
5.3 Bank overdraft	-	-
5.4 Other (provide details)	-	-
<b>Total: cash at end of quarter (item 1.22)</b>	<b>3,708</b>	<b>5,699</b>

+ See chapter 19 for defined terms.

## Changes in interests in mining tenements and petroleum tenements

	Tenement reference and location	Nature of interest (note (2))	Interest at beginning of quarter	Interest at end of quarter
6.1	Interests in mining tenements and petroleum tenements relinquished, reduced or lapsed			
6.2	Interests in mining tenements and petroleum tenements acquired or increased	E80/4749 E80/4796 E80/4813	25% 25% 25%	100% 100% 100%

## Issued and quoted securities at end of current quarter

Description includes rate of interest and any redemption or conversion rights together with prices and dates.

	Total number	Number quoted	Issue price per security (see note 3) (cents)	Amount paid up per security (see note 3) (cents)
7.1	<b>Preference securities</b> (description)			
7.2	Changes during quarter (a) Increases through issues (b) Decreases through returns of capital, buy-backs, redemptions			
7.3	<b>*Ordinary securities</b>	220,899,079	220,899,079	Fully Paid Ordinary
7.4	Changes during quarter (a) Increases through issues (b) Decreases through returns of capital, buy-backs			
7.5	<b>*Convertible debt securities</b> (description)			

+ See chapter 19 for defined terms.

## Mining exploration entity and oil and gas exploration entity quarterly report

7.6	Changes during quarter (a) Increases through issues (b) Decreases through securities matured, converted				
7.7	<b>Options</b> (description and conversion factor)	6,600,000		<b>Exercise Price</b> 100,000 - 11.2 cents  4,000,000 - \$0.20  1,000,000 - \$0.30  1,500,000 - \$0.241	<b>Expiry Date</b> 19 November 2017  9 April 2018  9 April 2018  23 May 2019
7.8	Issued during quarter				
7.9	Exercised during quarter				
7.10	Expired during quarter				
7.11	<b>Debentures</b> (totals only)				
7.12	<b>Unsecured notes</b> (totals only)				

## Compliance statement

- 1 This statement has been prepared under accounting policies which comply with accounting standards as defined in the Corporations Act or other standards acceptable to ASX (see note 5).
- 2 This statement does /~~does not~~\* (~~delete one~~) give a true and fair view of the matters disclosed.

28 October 2015

Sign here: .....  
(Director/Company secretary)  
Steven Wood

Date: .....

Print name: .....

## Notes

- 1 The quarterly report provides a basis for informing the market how the entity's activities have been financed for the past quarter and the effect on its cash

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+ See chapter 19 for defined terms.



position. An entity wanting to disclose additional information is encouraged to do so, in a note or notes attached to this report.

- 2 The “Nature of interest” (items 6.1 and 6.2) includes options in respect of interests in mining tenements and petroleum tenements acquired, exercised or lapsed during the reporting period. If the entity is involved in a joint venture agreement and there are conditions precedent which will change its percentage interest in a mining tenement or petroleum tenement, it should disclose the change of percentage interest and conditions precedent in the list required for items 6.1 and 6.2.
- 3 **Issued and quoted securities** The issue price and amount paid up is not required in items 7.1 and 7.3 for fully paid securities.
- 4 The definitions in, and provisions of, *AASB 6: Exploration for and Evaluation of Mineral Resources* and *AASB 107: Statement of Cash Flows* apply to this report.
- 5 **Accounting Standards** ASX will accept, for example, the use of International Financial Reporting Standards for foreign entities. If the standards used do not address a topic, the Australian standard on that topic (if any) must be complied with.

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