



#### Directors:

Chair  
Tim Wall

Managing Director  
Gavin Loyden

Non-Executive Director  
Daniel Harris

Non-Executive Director  
Tony Pearson

Non-Executive Director  
David Fitch

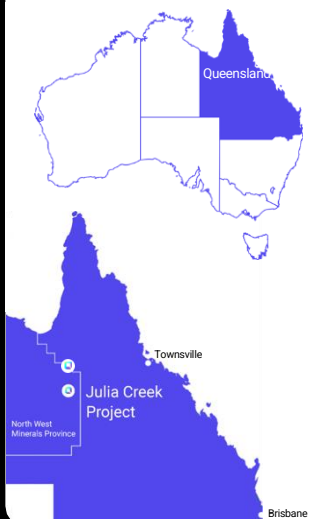
#### Julia Creek Project:



Vanadium



Oil



#### QEM Limited:

Registered Office:  
Level 8  
216 St Georges Tce  
Perth WA 6000  
Australia  
+61(0) 8 9481 0389

Head Office:  
Level 6  
50 Appel St  
Surfers Paradise Q 4217  
Australia  
+61(0) 7 5646 9553

# ASX Announcement

27 Oct 2023

## Quarterly update for the period ending 30 September 2023

### Highlights:

- Successful completion of multipurpose drilling campaign with results to support resource classification, update pending.
- QEM Scoping Study now due for completion H1 2024.
- Further progress made with University of Queensland (UQ) on mineral characterisation, post oil extraction.
- Two further tests successfully completed in bench scale pilot plant.

QEM Limited (ASX: QEM) ("**QEM**" or "**Company**") is pleased to provide an update on its activities for the quarter ending 30 September 2023 for its 100% owned Julia Creek Vanadium and Oil Shale Project (JCP) in Julia Creek, Northwest Queensland.

QEM Managing Director Gavin Loyden said, "We are very pleased with the successful completion of the recent drilling campaign which was finished on time and on budget and without incident. We now await the updated JORC report, due in January 2024."

"The Scoping Study, originally planned for completion in Q3 2023 is now due for completion H1 2024 as further advanced test work has indicated some valuable outcomes that require additional time and study to work into the report."

"Productive discussions continue with shortlisted global renewables developers that are interested in building, owning and operating the hybrid wind and solar project."

## **Resource Exploration 2023**

In July, QEM engaged Measured Group as the lead geologist/ program exploration managers for the 2023 drilling campaign. All State Drilling as the drilling contractors, Cartledge Mining and Geotechnics (Cartledge) to supervise geotechnical investigations and ATC Williams as the hydrogeologists to supervise groundwater bore installations.

Conduct and Compensation Agreements (CCAs) were issued and executed by the landholders in May and the drilling program began on 10 July 2023, with successful completion on 3 August 2023. (ASX announcement 9 August 2023)

The program was conducted for the purpose of resource exploration and definition, geotechnical studies and water boreholes. Material from the overburden levels was also collected for waste characterization.

The campaign targeted 12 exploration locations in the north of the QEM tenement with a target depth of up to 80 metres, with 620 total metres of 4C drilled (620m).

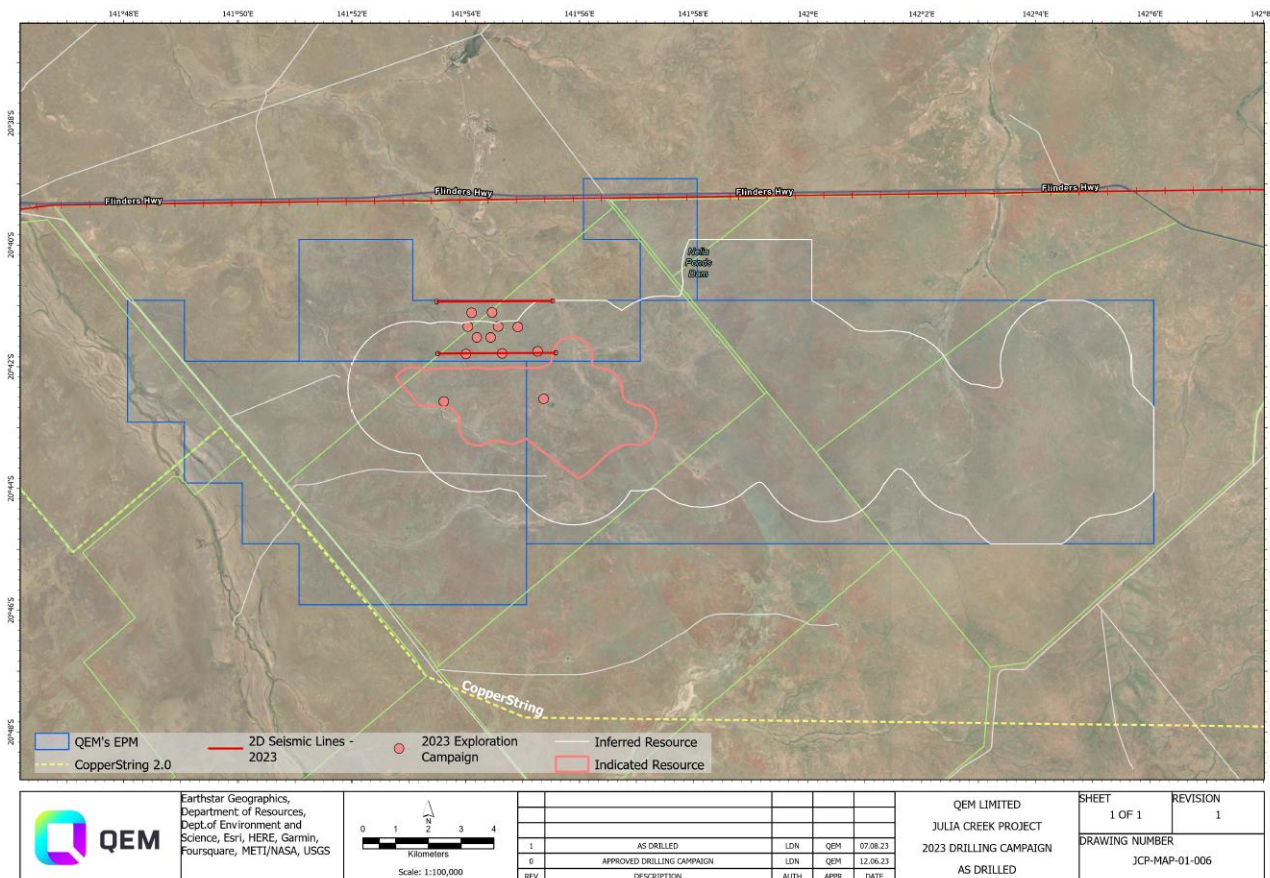
Two of the drilling campaign's 12 exploration holes have now been converted to groundwater monitoring bores, and a further four were used for geotechnical analysis. Overburden and core samples from a range of holes have been collected, allowing for waste characterisation analysis to commence. Fresh core samples were also collected for further pilot plant testing and metallurgical test work at QEM's pilot plant at HRL Labs in Victoria.

Post drilling, a 2D seismic survey is to be conducted to determine the geological structure(s) and the continuity of the resource across the project area. This survey is being conducted by Velseis Seismic Technologies and commenced on September 29, 2023, and will continue for up to 10 days, with report due post reporting period.

Core has been sent for assay and analysis and an updated JORC Report is expected post reporting period, in January 2024.



Image: Julia Creek 2023 Drilling & Seismic Campaign



## Mining

### Scoping Study Development

The Scoping Study for the Julia Creek Project is now due for completion in H1 2024. As mentioned above, the 2023 exploration campaign has been completed and updated JORC results are expected in January 2024, which could provide further input to the Scoping Study.

The Company is also working through further advanced test work that is deemed valuable to the outcomes of the Scoping Study but will require some additional time to incorporate into the report. The Company had previously announced a target date for completion of Q3 2023.

Post reporting period, QEM received the results of the Mineral Characterisation Study completed by UQ's WH Bryan Mining Geology Research Centre. These results allow for highly targeted beneficiation processes to be developed by UQ's Sustainable Minerals Institute (SMI).



## **Processing**

### Vanadium Extraction, flowsheet development – GSA Environmental

The test program has continued throughout the reporting period. GSAe UK have produced the initial flow sheets for a two-step acid curing and leaching process. This is an additional option to the previous work undertaken by GSAe for vanadium processing which may avoid the requirement for roasting.

### Pilot plant trials-HRL Technology

During the reporting quarter, QEM's technical partner HRL conducted two pilot plant tests with the following objectives:

- Test T6 involved a trial with hydrogen donor solvent only (no shale) as the feedstock. The intent was to gain further understanding of solvent behaviour as a result of heating to a target temperature of 450°C;
- Test T7 involved a trial with hydrogen donor solvent and the shale residue from a previous trial (Test T4). The intent was to establish whether the presence of shale solids has an influence on the behaviour of the solvent. An additional outcome was the production of a new quantity of fully processed shale residue for additional vanadium beneficiation and extraction work.

In addition to Tests T6 and T7, HRL conducted a small-scale trial in QEM's 100ml autoclave using direct injection of hydrogen gas. The aim of the trial was to test alternatives to the hydrogen donor solvent previously used.

Based on the results of a single small-scale test with hydrogen and naphthalene as solvent, equivalent carbon conversions can potentially be achieved using either the solvent previously used or hydrogen gas.

## **Environmental**

### Water Monitoring – ATC Williams

ATC Williams continued monthly surface and groundwater surveys in Julia Creek. The water monitoring program continued throughout the quarter with 3 site visits by ATC Williams and QEM personnel, collecting water quality samples from various locations around the shire and tenement. The monitoring program aims to characterise environmental baseline conditions and inform the engineering design for tailings storage facilities. During the reporting period, two additional groundwater monitoring bores were installed as part of this year's drilling campaign. These additional bores were installed and tested under ATC Williams' supervision and now form part of QEM's water monitoring network.





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*Images: QEM 2023 water monitoring campaign (July-September)*



## **Renewable Energy Project**

The Julia Creek Renewables Project (JCRP) is a planned solar/wind project for a minimum 1GW of renewable energy generation, that could be an input into the CopperString 2032 transmission line, which is being built by the Queensland Government through its entity Powerlink.

CopperString 2032 is a \$5 billion power transmission project that will connect vast renewable wind and solar resources with critical minerals mining and processing in the North West Minerals Province (“NWMP”) and will be delivered as part of the \$62 billion Queensland Energy and Jobs Plan. Early works have begun with construction slated to begin in early 2024.

The primary objective of the JCRP is to potentially provide cheaper clean power for the Company’s flagship, Julia Creek vanadium and oil shale project (JCP) and to contribute to both the Queensland and Australian Government’s renewable energy and emission reduction targets. Outcomes, if successful, have the potential to form crucial components of the proposed Pre-Feasibility Study for the JCP.

On 3 July 2023, QEM announced it had shortlisted non-binding indicative offers from 3 global developers:

- ENEL Green Power (Aust),
- Acciona Energia and
- Origin Energy and Energy Estate (joint venture) (“ORG”)

to build, own and operate the project. (*Ref: ASX announcement 3 July 2023*). Productive discussions continued throughout the reporting period with each of the 3 proponents.

[QEM’s Julia Creek renewables plan draws quality bidders | The Australian](#)

## **Queensland Government continues to support Critical Minerals development.**

The State of Queensland is endowed with a vast, world class vanadium resource and both the Australian Federal Government and the Queensland Government have recognized the importance of establishing a new vanadium industry in the State by establishing Critical Minerals Strategies at both levels of government.

Vanadium is defined as a Critical Mineral in Australia and is required to support the global energy transition, through the application of Vanadium Redox Flow Batteries (VRB). These batteries are large scale, long duration energy storage systems (LDES) that are quickly becoming the energy storage system of choice for large scale renewable energy projects, due to their unique attributes, including greater safety, long life cycle and recyclability.

On 27 June 2023, The Queensland State Government unveiled a new strategy to oversee a \$245 million investment into the state's critical minerals sector, which will advantage QEM's JCP in numerous ways.

The Strategy will oversee a \$245 million investment into growing Queensland's Critical Mineral sector, it will:

- ✓ Reduce rent for new and existing exploration permits for minerals to \$0 for the next five years, worth \$55 million.
- ✓ Establishing critical mineral zones, initially at Julia Creek/Richmond and around Mount Isa, with \$75 million to support investment and renewed focus in advancing critical minerals projects.
- ✓ Establish Critical Minerals Queensland, a one-stop office to oversee the development of the sector and help drive and attract international investment.
- ✓ Invest \$5 million to target mining waste and tailings for critical minerals, and \$8 million towards scientific research including circular economy initiatives
- ✓ Provide \$1 million to foster research and ESG excellence
- ✓ Deliver the \$100 million Critical Minerals and Battery Technology Fund to support new investments in projects

Reference: <https://statements.qld.gov.au/statements/98059>

## **ESG and Community Relations**

This quarter marks the seventh consecutive that QEM is monitoring and disclosing the Company's ESG progress and initiatives via Socialsuite's ESG Go platform.

QEM's ESG reporting is based on the 21-core metrics set by the World Economic Forum (WEF), as part of WEF's standardised and globally recognised Stakeholder Capitalism Metrics ESG framework.

## **Notice of AGM-Reminder**

QEM Limited (ASX: QEM) (QEM or the Company) will be holding its Annual General Meeting at 10.00am (AEST) on Thursday 9 November 2023 at Suite 6A, Level 6, 50 Appel Street, Surfers Paradise, Queensland.

## **Related Party Payments**

Pursuant to item 6 in the Company's Appendix 5B – Quarterly Cashflow Report for the Quarter ended 30 September 2023, the company made payments of \$145k to related parties for director service fees in line with their appointment and service agreements with the Company.

## **Other ASX requirements**

ASX Listing Rule 5.3.1: Exploration and Evaluation Expenditure during the Quarter was \$809k.

Full details of activities during the Quarter are set out above.

ASX Listing Rule 5.3.2, there were no mining production and development activities during the Quarter.

## Tenement Schedule

Project	Country	Tenement	Status	% Held	Change During Quarter
Julia Creek	Australia	EPM25662	Granted	100%	-
Julia Creek	Australia	EPM25681	Granted	100%	-
Julia Creek	Australia	EPM26429	Granted	100%	-
Julia Creek	Australia	EPM27057	Granted	100%	-

ENDS

*This announcement was authorised for release on the ASX by the Board of QEM Limited.*

## For further information, please contact:

Gavin Loyden  
**Managing Director**  
 P: +61 7 5646 9553  
 E: [gavin@qldem.com.au](mailto:gavin@qldem.com.au)

Joanne Bergamin  
**Communications Director**  
 P: +61 7 5646 9553  
 E: [jbergamin@qldem.com.au](mailto:jbergamin@qldem.com.au)

## ABOUT QEM

QEM Limited (ASX: QEM) is a publicly listed company which is focused on the exploration and development of its flagship Julia Creek Project, covering 250km<sup>2</sup> in the Julia Creek area of Northwestern Queensland.

The Julia Creek vanadium and oil shale project is a unique world class resource with the potential to utilise sustainable energy solutions in the production of energy fuels and vanadium pentoxide.

QEM strives to become a leading producer of liquid fuels and in response to a global vanadium deficit, also aims to become a global supplier of high-quality vanadium pentoxide, to both the nascent energy storage sector and the global steel industry.

This globally significant JORC (2012) Mineral Resource of 2,850 Mt @ 0.31% V<sub>2</sub>O<sub>5</sub> is one of the single largest ASX listed vanadium resources and represents a significant opportunity for development. The resource is comprised of 360Mt @ 0.29% V<sub>2</sub>O<sub>5</sub> in the Indicated category and 2,490Mt @ 0.31% V<sub>2</sub>O<sub>5</sub> in the Inferred category, with the added benefit of a contingent (SPE-PRMS 2018) in-situ oil resource of 79MMBBLs of Oil equivalent in the 2C category, and 696MMBBLs in the 3C category, contained within the same ore body.

The tenements form part of the vast Toolebuc Formation, which is recognised as one of the largest deposits of vanadium and oil shale in the world and located less than 6km east of the township of Julia Creek. In close proximity to all major infrastructure and services, the project is intersected by the main infrastructure corridor of the Flinders Highway and Great Northern Railway, connecting Mt Isa to Townsville.



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\*The information in this announcement that relates to the mineral resource and contingent resource estimates for the Company's Julia Creek Project was first reported by the Company in its IPO prospectus dated 20 August 2018 and supplementary prospectus dated 12 September 2018 (together, the "Prospectus") and the subsequent resource upgrade announcements ("Resource Upgrade") dated 14 October 2019 and 7 April 2022. The Company confirms that it is not aware of any new information or data that materially affects the information included in the Prospectus and Resource Upgrade, and in the case of estimates of Mineral Resources and Contingent Resources, that all material assumptions and technical parameters underpinning the estimates in the Prospectus and Resource Upgrade continue to apply and have not materially changed.



## Appendix 5B

### Mining exploration entity or oil and gas exploration entity quarterly cash flow report

Name of entity

QEM Limited

ABN

13 167 966 770

Quarter ended ("current quarter")

30 September 2023

Consolidated statement of cash flows		Current quarter \$A'000	Year to date (3 months) \$A'000
<b>1.</b>	<b>Cash flows from operating activities</b>		
1.1	Receipts from customers		
1.2	Payments for		
	(a) exploration & evaluation	(809)	(809)
	(b) development		
	(c) production		
	(d) staff costs		
	(e) administration and corporate costs	(535)	(535)
1.3	Dividends received (see note 3)		
1.4	Interest received	6	6
1.5	Interest and other costs of finance paid		
1.6	Income taxes paid		
1.7	Government grants and tax incentives	-	-
1.8	Payments for Green Hydrogen Project		
<b>1.9</b>	<b>Net cash from / (used in) operating activities</b>	<b>(1,338)</b>	<b>(1,338)</b>

<b>2.</b>	<b>Cash flows from investing activities</b>		
2.1	Payments to acquire or for:		
	(a) entities		
	(b) tenements		
	(c) property, plant and equipment	(18)	(18)
	(d) exploration & evaluation		
	(e) investments		
	(f) other non-current assets		

<b>Consolidated statement of cash flows</b>		<b>Current quarter \$A'000</b>	<b>Year to date (3 months) \$A'000</b>
2.2	Proceeds from the disposal of:		
	(a) entities		
	(b) tenements		
	(c) property, plant and equipment		
	(d) investments		
	(e) other non-current assets		
2.3	Cash flows from loans to other entities		
2.4	Dividends received (see note 3)		
2.5	Other (provide details if material)		
<b>2.6</b>	<b>Net cash from / (used in) investing activities</b>	<b>(18)</b>	<b>(18)</b>

<b>3.</b>	<b>Cash flows from financing activities</b>		
3.1	Proceeds from issues of equity securities (excluding convertible debt securities)	765	765
3.2	Proceeds from issue of convertible debt securities		
3.3	Proceeds from exercise of options		
3.4	Transaction costs related to issues of equity securities or convertible debt securities	(5)	(5)
3.5	Proceeds from borrowings		
3.6	Repayment of borrowings		
3.7	Transaction costs related to loans and borrowings		
3.8	Dividends paid		
3.9	Other – share application funds (not issued)	-	-
<b>3.10</b>	<b>Net cash from / (used in) financing activities</b>	<b>760</b>	<b>760</b>

<b>4.</b>	<b>Net increase / (decrease) in cash and cash equivalents for the period</b>		
4.1	Cash and cash equivalents at beginning of period	1,970	1,970
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(1,338)	(1,338)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	(18)	(18)
4.4	Net cash from / (used in) financing activities (item 3.10 above)	760	760

## Mining exploration entity or oil and gas exploration entity quarterly cash flow report

Consolidated statement of cash flows		Current quarter \$A'000	Year to date (3 months) \$A'000
4.5	Effect of movement in exchange rates on cash held	-	-
4.6	<b>Cash and cash equivalents at end of period</b>	<b>1,374</b>	<b>1,374</b>

5.	Reconciliation of cash and cash equivalents at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	Current quarter \$A'000	Previous quarter \$A'000
5.1	Bank balances	1,374	1,970
5.2	Call deposits	-	-
5.3	Bank overdrafts	-	-
5.4	Other (provide details)	-	-
5.5	<b>Cash and cash equivalents at end of quarter (should equal item 4.6 above)</b>	<b>1,374</b>	<b>1,970</b>

6.	Payments to related parties of the entity and their associates	Current quarter \$A'000
6.1	Aggregate amount of payments to related parties and their associates included in item 1	145
6.2	Aggregate amount of payments to related parties and their associates included in item 2	
<i>Note: if any amounts are shown in items 6.1 or 6.2, your quarterly activity report must include a description of, and an explanation for, such payments.</i>		

<b>7. Financing facilities</b> <i>Note: the term “facility” includes all forms of financing arrangements available to the entity.</i> <i>Add notes as necessary for an understanding of the sources of finance available to the entity.</i>	<b>Total facility amount at quarter end \$A’000</b>	<b>Amount drawn at quarter end \$A’000</b>
7.1 Loan facilities	2,000	-
7.2 Credit standby arrangements		
7.3 Other (please specify)		
7.4 <b>Total financing facilities</b>	2,000	-
7.5 <b>Unused financing facilities available at quarter end</b>		2,000
7.6 Include in the box below a description of each facility above, including the lender, interest rate, maturity date and whether it is secured or unsecured. If any additional financing facilities have been entered into or are proposed to be entered into after quarter end, include a note providing details of those facilities as well.		
The Company had at quarter end, an unsecured loan facility with David Fitch. Per ASX announcement 25 September 2023, the total facility of \$2m is undrawn at quarter end and accrues interest at 10% p.a. The term of the facility is 12 months.		

<b>8. Estimated cash available for future operating activities</b>	<b>\$A'000</b>
8.1 Net cash from / (used in) operating activities (item 1.9)	(1,338)
8.2 (Payments for exploration & evaluation classified as investing activities) (item 2.1(d))	-
8.3 Total relevant outgoings (item 8.1 + item 8.2)	(1,338)
8.4 Cash and cash equivalents at quarter end (item 4.6)	1,374
8.5 Unused finance facilities available at quarter end (item 7.5)	2,000
8.6 Total available funding (item 8.4 + item 8.5)	3,374
8.7 <b>Estimated quarters of funding available (item 8.6 divided by item 8.3)</b>	2.52
<i>Note: if the entity has reported positive relevant outgoings (ie a net cash inflow) in item 8.3, answer item 8.7 as "N/A". Otherwise, a figure for the estimated quarters of funding available must be included in item 8.7.</i>	
8.8 If item 8.7 is less than 2 quarters, please provide answers to the following questions:	
8.8.1 Does the entity expect that it will continue to have the current level of net operating cash flows for the time being and, if not, why not?	
Answer: N/A	
8.8.2 Has the entity taken any steps, or does it propose to take any steps, to raise further cash to fund its operations and, if so, what are those steps and how likely does it believe that they will be successful?	
Answer: N/A	
8.8.3 Does the entity expect to be able to continue its operations and to meet its business objectives and, if so, on what basis?	
Answer: N/A	
<i>Note: where item 8.7 is less than 2 quarters, all of questions 8.8.1, 8.8.2 and 8.8.3 above must be answered.</i>	

## **Compliance statement**

- 1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.
- 2 This statement gives a true and fair view of the matters disclosed.

Date: **27 October 2023**

Authorised by: **By the Board**  
(Name of body or officer authorising release – see note 4)

## **Notes**

1. This quarterly cash flow report and the accompanying activity report provide a basis for informing the market about the entity's activities for the past quarter, how they have been financed and the effect this has had on its cash position. An entity that wishes to disclose additional information over and above the minimum required under the Listing Rules is encouraged to do so.
2. If this quarterly cash flow report has been prepared in accordance with Australian Accounting Standards, 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. If this quarterly cash flow report has been prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standards apply to this report.
3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.
4. If this report has been authorised for release to the market by your board of directors, you can insert here: "By the board". If it has been authorised for release to the market by a committee of your board of directors, you can insert here: "By the [name of board committee – eg Audit and Risk Committee]". If it has been authorised for release to the market by a disclosure committee, you can insert here: "By the Disclosure Committee".
5. If this report has been authorised for release to the market by your board of directors and you wish to hold yourself out as complying with recommendation 4.2 of the ASX Corporate Governance Council's *Corporate Governance Principles and Recommendations*, the board should have received a declaration from its CEO and CFO that, in their opinion, the financial records of the entity have been properly maintained, that this report complies with the appropriate accounting standards and gives a true and fair view of the cash flows of the entity, and that their opinion has been formed on the basis of a sound system of risk management and internal control which is operating effectively.