

29 April 2022

# Third Quarter Activities Report

For the three months ending 31 March 2022

## Significant Activities

- Continued drilling at Koppamurra confirms significant regional prospectivity, continued high grade intercepts, and a high level of confidence in an updated mineral resource estimate from a three-fold increase in meters drilled since April 2021
- Positive metallurgical results from testing at ANSTO and University of Toronto on representative samples from Koppamurra. Optimisation test work continues.
- Mining and ground reclamation trials commenced at Koppamurra to further inform geological occurrences, collect a bulk sample for metallurgical pilot plant testing, and exhibit the unique occurrence of clay hosted rare earth deposits to interested parties.
- Continued pro-active engagement with community members and landowners underpins strong local support for AR3's site-based activities in South Australia.
- New tenements secured in WA and QLD in expanded search for clay hosted rare earths, leveraging AR3's in-house expertise on clay hosted rare earth deposits
- The Company has approximately \$7,063,000 cash and no debt.

Commenting on third quarter activities, Don Hyma, Managing director of AR3, said:

"It was a very active third quarter at AR3, highlighted by the safe completion of the second major drilling program by our site-based team, together with positive results from the metallurgical testing program conducted at ANSTO and University of Toronto, with support from renowned metallurgical consultants. We look forward to completing the interpretation of results from the drilling and metallurgical programs to update our mineral resource estimate and process flowsheet in the very near future."

Australian Rare Earths Limited ([ASX: AR3](#)) ("**AR3**" or the **Company**) is pleased to report on its activities for the three months ending 31 March 2022 ("Quarter").

## Koppamurra Drilling

A major resource definition drilling program was undertaken over an area equivalent in size to the Red Tail and Yellow Tail maiden resource footprint between February and April 2022 (refer ASX announcement 29 April 2022). The program consisted of 1,158 holes and 11,480m at 100m x 100m spacing to supplement the previous drilling of 899 holes and 9,920m in late 2021.

Results of the program are showing strong potential for extensions to both the Red Tail and Yellow Tail areas of shallow mineralised clay sediments with at least comparable Total Rare Earth Oxide (TREO) grades and thickness to existing resources, at ~6km along strike to the north.

Additional density determinations were completed across a wide area of the closely spaced drilling which support a 30% dry bulk density increase to be applied in the updated resource estimate.

The three-fold increase in meters drilled at tighter spacing will assist in forming the basis of an update to the maiden resource of 39.9Mt reported in April 2021. These results provide a high level of confidence in an updated mineral resource estimate currently expected to be completed in June 2022.

The location of drilling and the assays received are illustrated in Figure 1.

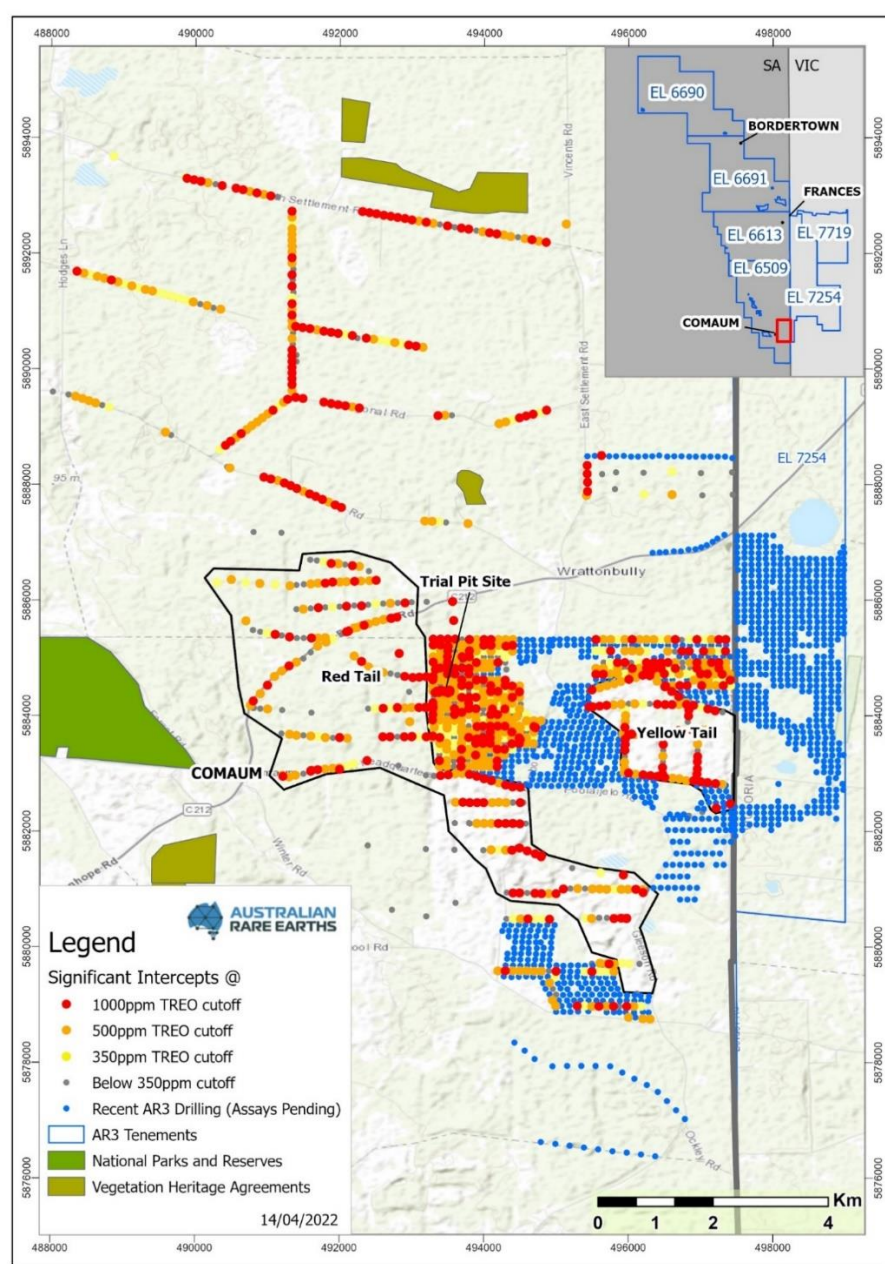


Figure 1 – AR3 drillhole locations on EL6509 (Comaum)

### **Koppamurra Mining Trial**

Work on a small-scale mining trial commenced at Koppamurra during the quarter (refer ASX announcement dated 11 April 2022). The trial, supported by the State regulator, the landowner and implemented by local earth moving firm, Henschke Industries, is located adjacent to the existing Red Tail mineral resource area. The trial aims to

- Improve the understanding of the structural nature of the clays, including the contact with the underlying limestone layer;
- Provide additional information for mine planning, specifically with respect to fleet selection and selective removal methods of the clay layer to minimise dilution from the underlying limestone or other low concentrations of rare earth minerals; and
- Collect a bulk sample of rare earth oxide rich clay for future metallurgical pilot plant tests.

In addition, it will provide an opportunity for landowners, regulators, and community members to see first-hand what a rare earth rich clay looks like and to learn about its mining and extraction at Koppamurra. At the conclusion of the trial mining, rehabilitation with the support of soil scientists, will also be undertaken to demonstrate the potential for continuous reclamation and soil improvements for enhanced crop productivity post mining.



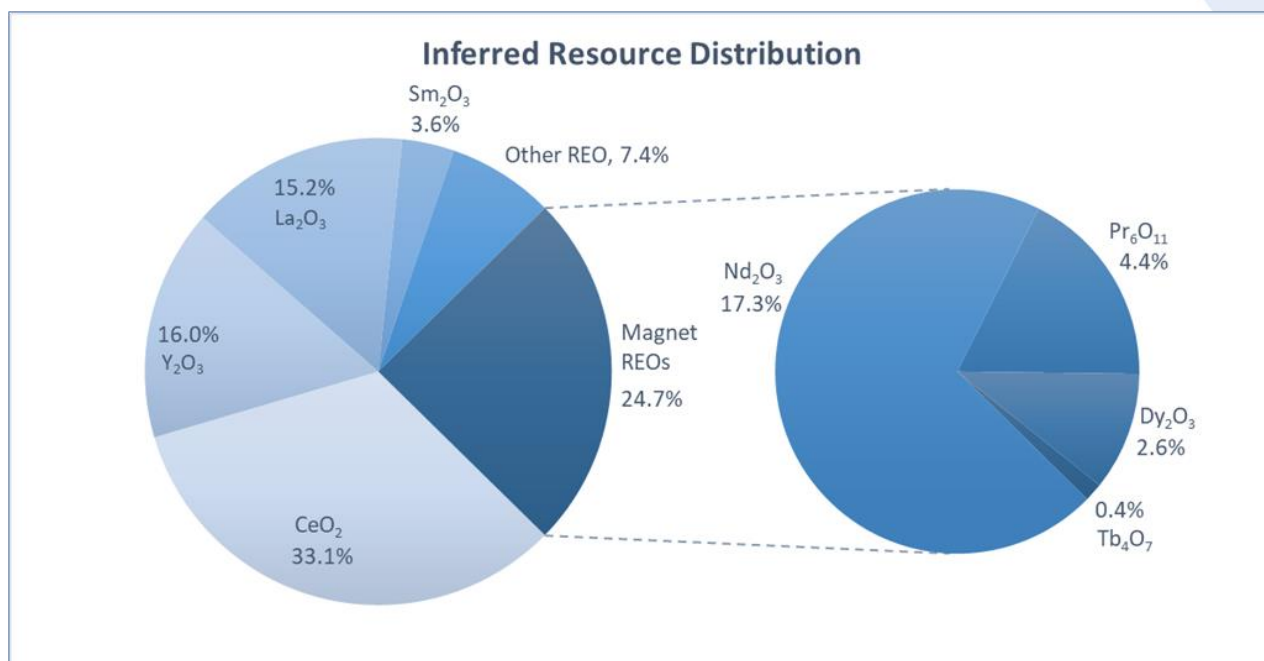
*Figure 2 – Aerial image of progress towards trial mining, sample collection and reclamation at Koppamurra as at 23 April 2022*

## **Mineralogy and Metallurgical Testing**

Between December 2021 and March 2022, mineralogical analysis and metallurgical testing was conducted in conjunction with ANSTO, University of Toronto, SGS Lakefield, and ALS Brisbane with advisory assistance provided by KYSPYMet and Inception Group (now WGA). (refer ASX announcement dated 04 April 2022)

The Koppamurra resource is recognised as a clay hosted Rare Earth Element (REE) deposit, characterised by a combination of ionically adsorbed, acid soluble and refractory rare earth minerals. A representative composite sample was produced from 36 drill holes across a high-grade subset of the Red Tail and Yellow Tail resource.

The valuable REEs which report to the minus 20micron size fraction provide excellent particle liberation for subsequent metallurgical extraction. The distribution of rare earths minerals, expressed as an oxide, is illustrated in Figure 3, including the high value REEs needed for high strength permanent magnet production.



*Figure 3: Rare Earth Oxide (REO) distribution within the Koppamurra inferred resource*

Metallurgical extraction of REEs was conducted on ten drill hole composite samples. A range of head grades from 270ppm to 1500pm was tested, resulting in extraction between 44% (median) and 68% (maximum) of magnet REEs. These results were based on the use of sulphuric acid at ambient temperature and pH 1. Upstream mineral processing techniques are being evaluated to optimise the overall process by rejecting gangue minerals prior to metallurgical extraction of REEs.

## **New Tenements**

Leveraging its in-house expertise acquired during the past two-year assessment of the 100% owned flagship Koppamurra Project, AR3 identified other highly prospective regions for clay hosted rare earth exploration within Australia.



During the quarter three new areas were added to AR3's exploration portfolio (refer ASX announcement dated 29 March 2022):

## Woolgangie (Western Australia)

- A Joint Venture with Belres Pty Ltd (Belres JV) that includes two granted exploration tenements and five pending applications, 60km south-east of Coolgardie
- Previous drilling identified thicknesses up to 22m of anomalous rare earth element content in regolith under 10m of overburden
- AR3 has also submitted tenement applications immediately adjacent to those within the Belres JV, giving a total combined 2,200km<sup>2</sup> of prospective exploration area

## Dalrymple (Queensland)

- Five exploration licence applications, centred 100km SW from Bowen in Queensland
- Exploration tenure dominated by rock suites containing high value prospective rare earth minerals, including Allanite
- 1,505km<sup>2</sup> of highly accessible ground near existing road and rail infrastructure

## Massie Creek (Queensland)

- Granted Exploration Licence EMP 27952, roughly 200km WSW of Cairns, allowing for rapid on-ground evaluation of the prospect
- Nearby stream sediment sampling detected elevated REE that may originate from the igneous host rocks in the region
- 327km<sup>2</sup> of prospective ground in a location with highly weathered clay potential



Figure 4: Location of AR3's tenements in Australia

## Community Activities

In March AR3 proudly participated in the 2022 Southeast Field Day. This provided an opportunity engage with the broader local community in the southeast of South Australia over a two-day period.



*Figure 5: AR3 exhibit Southeast Field Day*

## Cash Balance

The Company's cash balance at the end of the Quarter was A\$7,063,000.

## Capital Structure

Shares on issue: 111,024,009 fully paid ordinary shares.

Options on issue: 20,197,200 unlisted options, comprising:

- 6,000,000 exercisable at \$0.30 and expiring 25 January 2025
- 6,597,200 exercisable at \$0.45 and expiring 29 June 2024
- 2,000,000 exercisable at \$0.60 and expiring 29 July 2025
- 1,600,000 exercisable at \$1.44 and expiring 1 December 2024
- 2,000,000 exercisable at \$1.46 and expiring 1 December 2024
- 2,000,000 exercisable at \$1.95 and expiring 1 December 2025

## Appendix 5B Disclosures

AR3's accompanying Appendix 5B (quarterly Cashflow Report) includes an amount in item 6.1 which constitutes executive and non-executive director fees paid as salaries and wages for the quarter.

## Use of Funds

AR3 provides the following disclosures required by ASX Listing Rule 5.3.4 regarding a comparison of its actual expenditure as of 31 March 2022 versus listing on 29 June 2021 and the "use of funds" statement in the Prospectus dated 7 May 2021.

Funds (A\$)	Prospectus (\$k)	Actual (\$k)	Balance Remaining (\$k)
Pre-offer Cash as at 31 March 2021	732	732	-
Funds Raised Under the Offer	12,000	12,000	-
<b>Total Funds Available</b>	<b>12,732</b>	<b>12,732</b>	-
Offer Expenses	1,047	1,047	-
Resource Definition Drilling	4,000	1,008	2,992
Regional Exploration	2,000	1,341	659
Metallurgical Testwork and Studies	3,000	369	2,631
Working Capital	2,685	1,905	780
<b>Total Funds Applied</b>	<b>12,732</b>	<b>5,669</b>	<b>7,063</b>
<b>Cash as at 31 March 2022</b>		<b>7,063</b>	

## List of Tenements

Tenement <sup>(1)</sup>	Location	Commodity	Project	Jurisdiction
EL6509	Naracoorte	Rare Earths	Koppamurra	SA
EL6613	Frances	Rare Earths	Koppamurra	SA
EL7254	Apsley	Rare Earths	Koppamurra	VIC
EL6690	Keith	Rare Earths	Koppamurra	SA
EL6691	Bordertown	Rare Earths	Koppamurra	SA
EPM27952 <sup>(2)</sup>	Massie Creek	Rare Earths	Massie Creek	QLD

### Notes

- (1) All tenements are 100% held by AR3  
 (2) Granted during the quarter



**AUSTRALIAN  
RARE EARTHS**

The Board of AR3 authorised this announcement to be released to the ASX.

**For further Information please contact:**

Mr Don Hyma  
Managing Director  
Tel: 1300 646 100  
E: [hello@ar3.com.au](mailto:hello@ar3.com.au)

Mr Damien Connor  
Company Secretary/Chief Financial Officer  
Tel: 1300 646 100  
E: [hello@ar3.com.au](mailto:hello@ar3.com.au)

**About Australian Rare Earths Limited**

Australian Rare Earths (AR3) is committed to the timely exploration and development of its 100% owned, flagship Koppamurra Project, located in South Australia and Victoria. Koppamurra is a prospective ionic clay hosted rare earth element (REE) deposit; uniquely rich in all the REEs required in the manufacture of rare earth permanent magnets which are essential components in energy efficient motors. The Company is focused on executing a growth strategy that will ensure AR3 is positioned to become an independent and sustainable source of REEs, playing a pivotal role in the global transition to a green economy.

## Appendix 5B

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

Name of entity

Australian Rare Earths Limited

ABN

73 632 645 302

Quarter ended ("current quarter")

31 March 2022

Consolidated statement of cash flows		Current quarter \$A'000	Year to date (9 months) \$A'000
<b>1.</b>	<b>Cash flows from operating activities</b>		
1.1	Receipts from customers	3	3
1.2	Payments for		
	(a) exploration & evaluation	-	(218)
	(b) development	-	-
	(c) production	-	-
	(d) staff costs - <i>net of allocations to capitalised exploration assets</i>	(161)	(512)
	(e) administration and corporate costs	(259)	(839)
1.3	Dividends received (see note 3)	-	-
1.4	Interest received	-	-
1.5	Interest and other costs of finance paid	-	-
1.6	Income taxes paid	-	-
1.7	Government grants and tax incentives – R&D Tax incentive	-	-
1.8	Other (provide details if material)		
<b>1.9</b>	<b>Net cash from / (used in) operating activities</b>	<b>(417)</b>	<b>(1,566)</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 <i>*includes prepayment for asset not yet received</i>	(18)	(243)
	(d) exploration & evaluation	(1,190)	(2,334)
	(e) investments	-	-

<b>Consolidated statement of cash flows</b>		<b>Current quarter \$A'000</b>	<b>Year to date (9 months) \$A'000</b>
	(f) other non-current	-	-
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>(1,208)</b>	<b>(2,577)</b>

<b>3.</b>	<b>Cash flows from financing activities</b>		
3.1	Proceeds from issues of equity securities (excluding convertible debt securities)	-	-
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	-	(885)
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 (provide details if material)	-	-
<b>3.10</b>	<b>Net cash from / (used in) financing activities</b>	<b>-</b>	<b>(885)</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	8,688	12,091
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(417)	(1,566)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	(1,208)	(2,577)
4.4	Net cash from / (used in) financing activities (item 3.10 above)	-	(885)

## 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 (9 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>7,063</b>	<b>7,063</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	6,963	138
5.2	Call deposits	100	8,550
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>7,063</b>	<b>8,688</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	196
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>		

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

<b>7. Financing facilities</b> <i>Note: the term "facility" includes all forms of financing arrangements available to the entity. 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	-	-
7.2 Credit standby arrangements	-	-
7.3 Other (please specify)	-	-
7.4 <b>Total financing facilities</b>	-	-
7.5 <b>Unused financing facilities available at quarter end</b>		
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.		

<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)	(417)
8.2 (Payments for exploration & evaluation classified as investing activities) (item 2.1(d))	(1,190)
8.3 Total relevant outgoings (item 8.1 + item 8.2)	(1,607)
8.4 Cash and cash equivalents at quarter end (item 4.6)	7,063
8.5 Unused finance facilities available at quarter end (item 7.5)	-
8.6 Total available funding (item 8.4 + item 8.5)	7,063
8.7 <b>Estimated quarters of funding available (item 8.6 divided by item 8.3)</b>	4.39 quarters
<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	

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

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

*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.*

**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: .....29 April 2022.....

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.