

# SPHERE MINERALS LIMITED

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GLENORE

## QUARTERLY ACTIVITIES REPORT – 31 DECEMBER 2014

### Summary

On 27 October 2014, Sphere Minerals Limited (Sphere) announced it was initiating a review of the Askaf Project. A subsequent announcement (17 November 2014) advised that the construction contractor and sub-contractors to the Project were being demobilized. The review, which is continuing, is assessing project viability in light of projected iron ore market conditions. Updates will be provided as appropriate.

A Feasibility Study for Stage 1 development of the El Aouj East deposit is being progressed by El Aouj Mining Company SA (EMC): primary engineering work is being undertaken by Ausenco; mining and transport studies have been commissioned.

### Askaf Iron Ore Project (Sphere 90%)

An Ore Reserve update statement for the Askaf North magnetite deposit was prepared following the completion of a Feasibility Study in 2012 and FEED planning in 2014 as part of the commencement of the Askaf North project, using a 20% DTC wt% cut-off, to produce a coarse concentrate from a dry magnetic separation plant, grading at 65% Fe – See Appendix 1. The Studies included opencut mine planning and additional investigations to assess the factors required for a successful iron ore mine development in Mauritania. Changes from the previous statement are the result of a re-evaluation of the mine plan targeting the most economic pit shell from an investment perspective. The new mine plan removed a major waste pushback partway through the life of the previous mine schedule which improved the investment returns of the project by reducing strip ratio but with overall reduced ore mined. The Ore Reserve statement reported is based on the 2012 Mineral Resource estimate update previously reported. The previous Ore Reserve estimate was announced to the ASX on 20 February 2012 and is compared with the update in the following table.

	Proved Ore Reserves		Probable Ore Reserves		Total Ore Reserves	
	Update Estimate	Previous Estimate	Update Estimate	Previous Estimate	Update Estimate	Previous Estimate
Ore (Mt)	140	150	50	100	190	250
Iron (%)	36	36	34	34	35	35
DTC wt (%)	46	46	44	43	45	45
DTC Iron (%)	70	70.2	70	70.1	70	70.1
Oxidised Ore (Mt)	-	-	42	-	42	-
Iron (%)	-	-	35	-	35	-
DTC wt (%)	-	-	33	-	33	-
DTC Iron (%)	-	-	69	-	69	-

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## **Guelb el Aouj Iron Ore Project (Sphere 50%; SNIM 50%)**

EMC commenced work on the Feasibility Study for a Stage 1 Project based on the El Aouj East project in the fourth quarter of 2014. EMC has:

- Awarded the engineering component of the feasibility study to Ausenco, for which the work is well underway;
- Undertaken a competitive tender process for the mining part of the feasibility study, with the final contract for this work executed late October 2014;
- Finalised the pilot plant metallurgical testwork programme to support the feasibility study;
- Commenced an expression of interest process for the site geotechnical investigation needed to support the process plant foundation designs needed for the feasibility study; and
- Submitted the final Terms of Reference (ToR) document for the Environmental and Socio-Economic Impact Assessment part of the project to Government.

The only exploration work in the quarter was an extension of the ground magnetic survey covering the planned infrastructure area at El Aouj East to cover the land planned for the tailings emplacement area as delineated during the pre-feasibility study. The site work was completed in December 2014.

## **Lebtheinia Iron Ore Project (Sphere 100%)**

The study work for the development of the Lebtheinia resource is being compiled and may support a request for tenure extension in 2015.

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## ASX Listing Rule 5.3.3 Disclosure

### Mining tenements held at the end of quarter and their location.

#### Exploitation Licence Schedule

Exploitation (Mining) Licence	Location Country	Name	Area (km <sup>2</sup> )	Date Granted	Grant Period (Years)	Holding Company	Interest
EL 609	Mauritania	El Aouj / (Tintekrate)	520	27 April 2008	30	El Aouj Mining Company SA	50%
EL 1620	Mauritania	Askaf	194	26 September 2012	30	Sphere Mauritania SA	90%

#### Exploration Licence Schedule

Exploration Licence	Location Country	Name	Area (km <sup>2</sup> )	Expiry date of licence	Holding Company	Interest
EL 264	Mauritania	Lebtheinia	324	5 September 2015	Sphere Lebtheinia SA	100%
EL 325	Mauritania	Aoueoua	45	5 December 2017	Sphere Lebtheinia SA	100%

### Mining tenements acquired and disposed of during the quarter.

None

### The beneficial percentage interests held in farm-in or farm-out agreements at the end of the quarter.

None

### The beneficial percentage interests in farm-in or farm-out agreements acquired or disposed of during the quarter.

None

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## APPENDIX 1

### Ore Reserve Statement: Update for Askaf North Ore Deposit, Mauritania

	Proved Ore Reserves		Probable Ore Reserves		Total Ore Reserves	
	Update Estimate	Previous Estimate	Update Estimate	Previous Estimate	Update Estimate	Previous Estimate
Ore (Mt)	140	150	50	100	190	250
Iron (%)	36	36	34	34	35	35
DTC wt (%)	46	46	44	43	45	45
DTC Iron (%)	70	70.2	70	70.1	70	70.1
Oxidised Ore (Mt)	-	-	42	-	42	-
Iron (%)	-	-	35	-	35	-
DTC wt (%)	-	-	33	-	33	-
DTC Iron (%)	-	-	69	-	69	-

The Ore Reserves have been compiled in accordance with the 2012 Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code).

DTC wt (%) – Davis Tube Concentrate mass recovery.

DTC Iron (%) – Davis Tube Concentrate assay %Fe.

Davis Tube test work has been conducted at a grind size of 95% passing 80 micron.

The rounding used for the values in this report reflects the confidence in the different levels of resource and reserve classifications.

**Askaf North:** Askaf North Deposit is an east-west striking synformal structure defined by a magnetite-quartzite (MQ) unit that ranges in true thickness from approximately 140m in the western hinge zone to approximately 30m along the eastern part of the southern limb. The synformal axis plunges at between 20° to 30° towards the east in the western part of the synform, and at about 35° to 45° towards the west at the eastern fold closure, producing a double plunging synform. A dolerite dyke has been emplaced along an east-west fault zone that displaces the northern part of the deposit in a dextral shear sense. The disruption and emplacement of the dolerite along the northern limb of the synform has not affected the quality of the mineralisation. The MQ unit represents a metamorphosed banded iron-formation (BIF). The precursor BIF was subjected to high-grade metamorphic conditions during the Archaean, which resulted in complete recrystallisation of the original fine-grained BIF. In most cases the primary textures have been destroyed by the recrystallisation. Coarse-grained (>1mm) MQ is produced as a result, with good Davis Tube liberation characteristics and concentrate grades at a liberation grind size of 95% passing 80 micron.

The Askaf North Mineral Resource Statement that was the basis for the current Ore Reserve estimate used a cut-off grade of 20% DTC wt% for fresh (unoxidised) mineralisation and a cut-off grade of 20% head Fe for oxidised mineralisation. All reported concentrate grades were weighted by DTC wt%.

The Askaf North Ore Reserve Statement for iron ore was prepared following the completion of a Feasibility Study in 2012 and FEED planning as part of the commencement of the Askaf North project, using a 20% DTC wt% cut-off, to produce a coarse concentrate from a dry magnetic separation plant, grading at 65% Fe. The Studies included opencut mine planning and additional investigations to assess the factors required for a successful iron ore mine development in Mauritania. The reserve statement reported is based on the 2012 Mineral Resource estimate previously reported.

Changes from the previous statement are the result of a re-evaluation of the mine plan targeting the most economic pit shell from an investment perspective. The new mine plan removed a major waste pushback partway through the life of the previous mine schedule which improved the investment returns of the project. The new mine plan also includes allowance for processing oxidised ore during the life of the mine. Pilot scale testwork, and successful processing of similar ore at the nearby SNIM El Rhein mine, indicate the plant would successfully process this ore with slightly reduced mass recovery compared to the fresh ore.

#### Competent Person's Statement

*The Competent Person responsible for the Ore Reserves mentioned in this report is Mr Malcolm Cox, the fulltime Chief Operating Officer for Sphere Mauritania S.A. Mr Cox is Fellow of the Australasian Institute of Mining and Metallurgy. Mr Cox has sufficient experience that is relevant to the styles of mineralisation and type of deposits under consideration and to the activity being 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'. Mr Cox consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.*

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## JORC Code, 2012 Edition – Table 1 report, Section 4 Estimation and Reporting of Ore Reserves

Criteria	JORC Code explanation	Commentary
<i>Mineral Resource estimate for conversion to Ore Reserves</i>	<ul style="list-style-type: none"> <li><i>Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.</i></li> <li><i>Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.</i></li> </ul>	<ul style="list-style-type: none"> <li>The Mineral Resource model for the Askaf North deposit was developed by Golder Associates Pty Ltd (Golders) as part of the work commissioned for the Askaf North Project Feasibility Study. This Mineral Resource estimate was release publically by Sphere Minerals Limited in January 2013.</li> <li>Mineral Resources are reported inclusive of Ore Reserves.</li> </ul>
<i>Site visits</i>	<ul style="list-style-type: none"> <li><i>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</i></li> <li><i>If no site visits have been undertaken indicate why this is the case.</i></li> </ul>	<ul style="list-style-type: none"> <li>Competent Person is based in Mauritania and has visited the site multiple times during the past 2 years.</li> </ul>
<i>Study status</i>	<ul style="list-style-type: none"> <li><i>The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.</i></li> <li><i>The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.</i></li> </ul>	<ul style="list-style-type: none"> <li>Askaf North Project has been studied at Feasibility Study level including consideration of all modifying factors. In addition, Front End Engineering Design (FEED) has been carried out on the project design and fixed price construction contract bids were obtained during 2014 for the construction of the project.</li> </ul>
<i>Cut-off parameters</i>	<ul style="list-style-type: none"> <li><i>The basis of the cut-off grade(s) or quality parameters applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>A cut-off grade of 20% Davis Tube Recovery (DTR) has been used for developing the geological model and mine planning, for both fresh and oxidised ore.</li> </ul>
<i>Mining factors or assumptions</i>	<ul style="list-style-type: none"> <li><i>The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).</i></li> <li><i>The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.</i></li> <li><i>The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control and pre-production drilling.</i></li> </ul>	<ul style="list-style-type: none"> <li>The resource model was regularised to a block size 12.5m x 12.5m x 12m. No further ore losses or ore dilution was considered as part of the mine planning process because the regularisation process generated appropriate loss and dilution factors.</li> <li>The Ore Reserves are reported within a detailed pit design which has been based on an open pit optimisation. The optimisation was carried out including Measured, Indicated and Inferred Mineral Resource categories. The pit shell was further reduced to highlight a smaller pit shell that achieved a significantly higher return on investment by the removal of a significant waste pushback in the later stages in the</li> </ul>

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## JORC Code, 2012 Edition – Table 1 report, Section 4 Estimation and Reporting of Ore Reserves

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li><i>The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).</i></li> <li><i>The mining dilution factors used.</i></li> <li><i>The mining recovery factors used.</i></li> <li><i>Any minimum mining widths used.</i></li> <li><i>The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.</i></li> <li><i>The infrastructure requirements of the selected mining methods.</i></li> </ul>	<p>original design. The final pit design included no Inferred Mineral Resources.</p> <ul style="list-style-type: none"> <li>The detailed pit slopes used for the design were the based on Feasibility Study level Geotechnical studies (Golders 2012)</li> <li>The Askaf North Project is a standard truck and shovel iron ore operation and, although located in a remote part of the world, experience gained in the nearby Society Nationale Industriel et Miniere (SNIM) operations was used to guide the design of the facilities and operations.</li> <li>There are nearby rail, port and town facilities already used for iron ore operations and exports.</li> </ul>
<i>Metallurgical factors or assumptions</i>	<ul style="list-style-type: none"> <li><i>The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.</i></li> <li><i>Whether the metallurgical process is well-tested technology or novel in nature.</i></li> <li><i>The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.</i></li> <li><i>Any assumptions or allowances made for deleterious elements.</i></li> <li><i>The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.</i></li> <li><i>For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?</i></li> </ul>	<ul style="list-style-type: none"> <li>The metallurgical recovery through the proposed processing plant is based on extensive Davis Tube Liberation Grind Size Testing. This test determines the mass recovery at the target concentrate grade of 65% Iron by carrying out a series of grinds with increasing grind times until a Davis Tube concentrate grade of 65% Iron is achieved. This test work is then calibrated to laboratory and pilot plant test work of representative bulk samples.</li> <li>The metallurgical process is based on the dry magnetic separation process that has been successfully used at the nearby SNIM operations since the 1980s. The ore characteristics at the nearby operations are very similar to those at Askaf North.</li> <li>Metallurgical variability in the orebody was then represented by the Davis Tube Liberation Grind Size results.</li> </ul>
<i>Environmental</i>	<ul style="list-style-type: none"> <li><i>The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.</i></li> </ul>	<ul style="list-style-type: none"> <li>The sustainable development, environmental and socio-economic aspects of Askaf North were examined within the Environmental and Socio-Economic Impact Assessment (ESIA) process that was carried out in 2012 and 2013, including various stages of community engagement.</li> <li>The ESIA was finalised in late 2013 and submitted to the relevant authorities for approval. Approval was granted within the timeframes laid down in the relevant</li> </ul>



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## JORC Code, 2012 Edition – Table 1 report, Section 4 Estimation and Reporting of Ore Reserves

Criteria	JORC Code explanation	Commentary
		<p>Mauritanian legislation.</p> <ul style="list-style-type: none"> <li>Closure planning for the final landforms in relation to the open pit, the waste rock dumps and the dry tailings storage facilities was determined in the Feasibility Study. It is anticipated that the pit will be left open, and will require a bund and fence to protect people and animals from accidentally falling into it. Waste rock dumps are likely to be left in place with some additional contouring. The tailings facility will be progressively capped to reduce wind erosion effects.</li> <li>Preliminary assessment of the analytical data regarding sulphide content of the ore body does not indicate that acid rock drainage (ARD) is likely and therefore no specific measures to mitigate this are proposed. Further leaching tests and confirmation of the lack of ARD potential will be carried out before construction of these dumps commences.</li> </ul>
<i>Infrastructure</i>	<ul style="list-style-type: none"> <li><i>The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.</i></li> </ul>	<ul style="list-style-type: none"> <li>SNIM are the owners of the existing iron ore handling port at Nouadhibou and the existing 700km rail infrastructure connecting the Zouerate area with Nouadhibou. A term sheet for a services contract was negotiated for the Askaf North Project with SNIM for access to the rail and port facilities.</li> </ul>
<i>Costs</i>	<ul style="list-style-type: none"> <li><i>The derivation of, or assumptions made, regarding projected capital costs in the study.</i></li> <li><i>The methodology used to estimate operating costs.</i></li> <li><i>Allowances made for the content of deleterious elements.</i></li> <li><i>The source of exchange rates used in the study.</i></li> <li><i>Derivation of transportation charges.</i></li> <li><i>The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.</i></li> <li><i>The allowances made for royalties payable, both Government and private.</i></li> </ul>	<ul style="list-style-type: none"> <li>Projected capital and operating costs for mining have been developed based on production scheduled over approximately 15 years to achieve a production rate of approximately 7.5Mt/a of product.</li> <li>Capital cost is based on executable contract negotiated for the construction of the mine and delivery of the necessary equipment.</li> <li>Estimation of the production rates and operating costs has been based on an executable mining contract for the mine area. Other operating costs were developed from first principles. All costs were benchmarked against existing operations in Australia, South Africa and Mauritania.</li> <li>Iron Ore prices and penalties were based on input from the Glencore Iron Ore Marketing Department. Glencore has a significant iron ore trading business on the international sea-borne</li> </ul>

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## JORC Code, 2012 Edition – Table 1 report, Section 4 Estimation and Reporting of Ore Reserves

Criteria	JORC Code explanation	Commentary
		<p>market, including trade of iron ore from existing Mauritanian operations.</p> <ul style="list-style-type: none"> <li>Foreign exchange rates are based on Glencore internal economic outlook forecasts and international consensus forecasts.</li> <li>Costs include allowances for mining, administration, railing to the port and shipping.</li> <li>Transportation charges were based on the term sheet for a services contract for the Askaf North Project with SNIM for access to the rail and port facilities.</li> <li>Allowances for royalties and government charges were based on the signed Mining Convention that applies to Askaf North Project that was negotiated in 2007. This convention sets royalty rates, tax rates, tax holiday periods etc.</li> </ul>
<i>Revenue factors</i>	<ul style="list-style-type: none"> <li><i>The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.</i></li> <li><i>The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.</i></li> </ul>	<ul style="list-style-type: none"> <li>Prices have been based off International Consensus pricing of iron ore on the international market, benchmarked to the long term IODEX62 price</li> </ul>
<i>Market assessment</i>	<ul style="list-style-type: none"> <li><i>The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.</i></li> <li><i>A customer and competitor analysis along with the identification of likely market windows for the product.</i></li> <li><i>Price and volume forecasts and the basis for these forecasts.</i></li> <li><i>For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.</i></li> </ul>	<ul style="list-style-type: none"> <li>China is currently the key to understanding the iron ore market. Crude steel consumption, and hence production, in China is pushed by the varied needs of population, government and industry to create wealth. Although there is currently a slowing in the rate of growth of the iron ore demand and an oversupply of production, it is envisaged that the Askaf North Product will have a place in the market in the coming few years.</li> <li>Glencore actively trades iron ore on the international seaborne market today, including similar iron ore to Askaf North that is produced by SNIM in Mauritania. This provides an ability to assess the market acceptance issues related to this particular product. The products targeted by Askaf North are expected to fit neatly into the demand for high quality sinter feed products that will be part of the blend of feed required. High Iron, with very low alumina levels, will help steel mills create sinter blends that can</li> </ul>



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## JORC Code, 2012 Edition – Table 1 report, Section 4 Estimation and Reporting of Ore Reserves

Criteria	JORC Code explanation	Commentary
		cope with the lower Iron and higher alumina products forecast to come from Western Australia as production from this region increases.
<i>Economic</i>	<ul style="list-style-type: none"> <li><i>The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.</i></li> <li><i>NPV ranges and sensitivity to variations in the significant assumptions and inputs.</i></li> </ul>	<ul style="list-style-type: none"> <li>The financial modeling indicates that the Askaf North Project is likely to produce a positive Net Present Value (NPV) at the required discount rate for a range of long-term iron ore prices. Sensitivity analysis has also shown that the project economics remain secure within a normal sensitivity range.</li> </ul>
<i>Social</i>	<ul style="list-style-type: none"> <li><i>The status of agreements with key stakeholders and matters leading to social licence to operate.</i></li> </ul>	<ul style="list-style-type: none"> <li>Formal stakeholder engagement has been carried out in Mauritania already for a number of years. Initially this was in preparation for ESIA work, but ore lately has been focused on keeping the local community and government officials aware of progress with the projects. Mining is well accepted in the country, being the mainstay of the economy with production currently coming from iron ore, gold and copper.</li> <li>The ESIA was formally approved by the government in 2013 and allows mining to proceed. The mining licence is in place for the project.</li> </ul>
<i>Other</i>	<ul style="list-style-type: none"> <li><i>To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:</i></li> <li><i>Any identified material naturally occurring risks.</i></li> <li><i>The status of material legal agreements and marketing arrangements.</i></li> <li><i>The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.</i></li> </ul>	<ul style="list-style-type: none"> <li>The mining area is close (30km) to the Western Sahara border where previous military clashes occurred in the 1970s between separatist groups striving for an independent Western Sahara and Mauritians. The United Nations brokered a ceasefire more than 20 years ago that has been honoured, and Mauritania has renounced any claim on the Western Sahara territory.</li> <li>There are currently risks associated with the instability in northern Mali, and across the Sahel in general, but these are mitigated by a strong military presence in the region to protect the existing iron ore industry as well as the new projects currently being encouraged in the region. The desert region between Mauritania and the Malian and Algerian borders is monitored and patrolled.</li> <li>All relevant approvals, permits and licences are in place to enable construction and operations to commence without further delay.</li> </ul>

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## JORC Code, 2012 Edition – Table 1 report, Section 4 Estimation and Reporting of Ore Reserves

Criteria	JORC Code explanation	Commentary
<i>Classification</i>	<ul style="list-style-type: none"> <li><i>The basis for the classification of the Ore Reserves into varying confidence categories.</i></li> <li><i>Whether the result appropriately reflects the Competent Person's view of the deposit.</i></li> <li><i>The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).</i></li> </ul>	<ul style="list-style-type: none"> <li>There are only Measured and Indicated Mineral Resources in the mine model, so the Ore Reserves are fully supported in the financial model.</li> <li>The Fresh Measured Mineral Resources have been converted into Proved Ore Reserves and the Fresh Indicated Mineral Resources have been converted into Probable Ore Reserves, as there is a high confidence in the modifying factors.</li> <li>The Oxidised Measured and Indicated Mineral Resources have been converted into Probable Ore Reserves. Although there is high confidence in most of the modifying factors, the lack of pilot scale test work on a representative sample of the oxidised ore has resulted in the downgrading of the confidence in the Resource status to Indicated. Extensive Liberation Size test work has been carried out on individual borehole samples, and similar oxidised ore is currently processed in the nearby SNIM processing plant with slightly reduced mass recovery compared to the fresh ore. This experience has been used to set the mass recovery basis of the oxidised ore.</li> <li>The competent person does not believe there is any other reason to downgrade any other material.</li> </ul>
<i>Audits or reviews</i>	<ul style="list-style-type: none"> <li><i>The results of any audits or reviews of Ore Reserve estimates.</i></li> </ul>	<ul style="list-style-type: none"> <li>An independent review of the Ore Reserves estimate was carried out in August 2014 (SRK Consulting (UK) Limited 2014), which supported the mine planning work carried out to support these Ore Reserves.</li> </ul>
<i>Discussion of relative accuracy/ confidence</i>	<ul style="list-style-type: none"> <li><i>Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.</i></li> <li><i>The statement should specify whether</i></li> </ul>	<ul style="list-style-type: none"> <li>The studies underlying all elements of this project have been carried out to Feasibility Study standard and even carried to FEED and execution contracts. The nearby SNIM operated magnetite mine, as well as the international operations of Glencore, provide a high level of confidence in the Ore Reserve estimate.</li> <li>A degree of uncertainty remains in relation to the processing of the oxidised ore, but current estimates are based on benchmarking the existing test work against the nearby comparable operations.</li> </ul>

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## JORC Code, 2012 Edition – Table 1 report, Section 4 Estimation and Reporting of Ore Reserves

Criteria	JORC Code explanation	Commentary
	<p><i>it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</i></p> <ul style="list-style-type: none"><li>• <i>Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.</i></li><li>• <i>It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</i></li></ul>	

## 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

Sphere Minerals Limited

ABN

66 009 134 847

Quarter ended ("current quarter")

December 2014

### Consolidated statement of cash flows

Cash flows related to operating activities		Current quarter \$A'000	Year to date (12 months) \$A'000
1.1	Receipts from product sales and related debtors	-	-
1.2	Payments for (a) exploration & evaluation	(6,872)	(100,795)
	(b) development	-	-
	(c) production	-	-
	(d) administration	(59)	(428)
1.3	Dividends received	-	-
1.4	Interest and other items of a similar nature received	9	54
1.5	Interest and other costs of finance paid	-	-
1.6	Income taxes paid	-	-
1.7	Other (provide details if material)	-	-
<b>Net Operating Cash Flows</b>		<b>(6,922)</b>	<b>(101,169)</b>
<b>Cash flows related to investing activities</b>			
1.8	Payment for purchases of: (a) prospects	-	-
	(b) equity investments	-	-
	(c) other fixed assets	-	(24)
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 (provide details if material)	-	-
<b>Net investing cash flows</b>		<b>-</b>	<b>(24)</b>
1.13	Total operating and investing cash flows (carried forward)	<b>(6,922)</b>	<b>(101,193)</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)	(6,922)	(101,193)
	<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	2,446	98,881
1.17	Repayment of borrowings	-	-
1.18	Dividends paid	-	-
1.19	Other (provide details if material)	-	-
	<b>Net financing cash flows</b>	<b>2,446</b>	<b>98,881</b>
	<b>Net increase (decrease) in cash held</b>	<b>(4,476)</b>	<b>(2,312)</b>
1.20	Cash at beginning of quarter/year to date	7,390	5,226
1.21	Exchange rate adjustments to item 1.20	-	-
1.22	<b>Cash at end of quarter</b>	<b>2,914</b>	<b>2,914</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'ooo
1.23 Aggregate amount of payments to the parties included in item 1.2	228
1.24 Aggregate amount of loans to the parties included in item 1.10	Nil

1.25 Explanation necessary for an understanding of the transactions

Directors' fees and related party service recharges

### 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

Interest expense accrued during the period: A\$4,085,406

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

Nil

+ See chapter 19 for defined terms.

### Financing facilities available

*Add notes as necessary for an understanding of the position.*

	Amount available \$A'ooo	Amount used \$A'ooo
3.1 Loan facilities	227,454	133,051
3.2 Credit standby arrangements	-	-

### Estimated cash outflows for next quarter

	\$A'ooo
4.1 Exploration and evaluation	700
4.2 Development	-
4.3 Production	-
4.4 Administration	285
<b>Total</b>	<b>985</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'ooo	Previous quarter \$A'ooo
5.1 Cash on hand and at bank	2,914	7,390
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>2,914</b>	<b>7,390</b>

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+ See chapter 19 for defined terms.



## Appendix 5B

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

#### 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	-	-	-

#### 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	Nil			
7.2	Nil			
	Nil			
7.3	218,269,296			
7.4	Nil			
	Nil			
7.5	Nil			

+ See chapter 19 for defined terms.

**Appendix 5B**


**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	Nil Nil			
7.7	<b>Options</b> (description and conversion factor)	Nil Nil		<i>Exercise price</i>	<i>Expiry date</i>
7.8	Issued during quarter	Nil			
7.9	Exercised during quarter	Nil Nil			
7.10	Expired during quarter	Nil			
7.11	<b>Debentures</b> (totals only)	Nil			
7.12	<b>Unsecured notes</b> (totals only)	Nil			

## Compliance statement

- 1 This statement has been prepared under accounting policies which comply with accounting standards as defined in the *Corporations Act 2001* or other standards acceptable to ASX (see note 5).
- 2 This statement does give a true and fair view of the matters disclosed.

Sign here:

  
.....  
Company secretary

Date: 30 / 01 / 2015

Print name: Matthew Conroy

## 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 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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