



## QUARTERLY ACTIVITIES REPORT FOR THE PERIOD ENDED 30 JUNE 2023

20 July 2023

### ASX Code:

SFX

### Directors:

Mr Bruce Griffin  
Executive Chair

Mr Gordon Cowe  
Non-Executive Director

Mrs Vanessa Kickett  
Non-Executive Director

Mr Ian MacIver  
Non-Executive Director

Mr John Richards  
Non-Executive Director

### Registered Office:

Level 2, 41-47 Colin Street  
West Perth WA 6005

### Share Registry:

Link Market Services  
Level 12, QV1 Building  
250 St Georges Terrace  
Perth WA 6000

### Capital Structure:

Ordinary Shares: 392.6M  
Unlisted Options: 3.0M  
Unlisted Rights: 4.6M

### Market Capitalisation:

A\$194 million

### Cash Reserves:

A\$24.4 million  
(as at 30 June 2023)

### Investor Relations:

Bruce Griffin  
T: +61 8 6555 8777  
E: [info@sheffieldresources.com.au](mailto:info@sheffieldresources.com.au)

Mark Di Silvio  
T: +61 8 6555 8777  
E: [info@sheffieldresources.com.au](mailto:info@sheffieldresources.com.au)

## HIGHLIGHTS

### *Thunderbird Mineral Sands Project (Sheffield interest – 50%)*

- Site construction over 90% complete
- Process plant construction activities well advanced, with all major equipment including spirals, WHIMS, piping and electrical components in place
- Operational readiness progressing well with recruitment of key leadership personnel across all operational disciplines
- Waste mining contractor mobilised to site and clearing and grubbing activities commenced ahead of initial waste mining
- Project remains on schedule and within budget of \$484m with first product shipment from Thunderbird on track for Q1 2024

### *South Atlantic Project*

- Planning underway for a drilling program of up to 10,000m, commencing late 2023

### *Corporate*

- Cash balance of \$24.4m as at 30 June 2023 (unaudited)



Figure 1: Thunderbird Process Plant site (July 2023)

## KEY ACTIVITIES

### Kimberley Mineral Sands Pty Ltd (KMS) (Sheffield interest – 50%)

Site construction activities at the Thunderbird Mineral Sands Project (Thunderbird) in the Kimberley region of Western Australia continued to advance throughout the quarter and were over 92% complete as at the end of June 2023. The major Wet Concentrate Plant and Concentrate Upgrade Plant components including spirals, wet high intensity magnet separators (WHIMS), piping, electrical and mechanical systems have been progressively installed and the process plant is on track for completion in line with the planned schedule.



**Figure 2: Construction Progress at the Thunderbird Mineral Sands Project**

#### *Thunderbird Construction Activities*

Process plant construction and installation activities continued to advance toward completion during the quarter. All construction related activity is progressing in line with planned schedules.

In conjunction with the Wet Concentrate Plant and Concentrate Upgrade Plant areas, the tailing storage facility, stormwater storage pond and bore fields are substantially complete ahead of scheduled commissioning during the coming months. Final sealing of the 30km mine access road commenced during the quarter and is approaching completion. Construction of the intersection with the Great Northern Highway is scheduled for the forthcoming September quarter.

Electricity supply systems are well advanced, including installation of the first of the gas engines. Planning for first fills of LNG gas supply for scheduled commissioning activities during the second half of the year has commenced. A temporary diesel power supply was installed to support commissioning prior to startup of the main gas power supply. Fabrication of the Dry Mining Unit (DMU) by Piacentini & Son is progressing well ahead of planned transport to site in the forthcoming quarter.



**Figure 3: Wet Concentrator Plant construction in progress**



**Figure 4: Waste mining activities commenced during the quarter**

### *Thunderbird Operations Activities*

Preparations for the commencement of operations continued during the quarter. Recruitment of key leadership roles remained a focus, with progressive onboarding of senior operational personnel occurring during the quarter.

Waste mining contractor, Carey Mining, mobilised excavation and trucking fleet to site during the quarter, commencing clearing and grubbing activities, with commenced waste mining to enable mining contractor Piacentini & Son to access the starter pit location in the September quarter. Detailed mine planning and grade control modelling is underway to ensure alignment between waste and ore mining activities.

During the quarter the preferred product logistics path from site to port was determined. Rotainers will be loaded at site and transported by road train to a storage yard near the Port of Broome. Upon vessel arrival for loading, rotainers will be transferred to the Broome jetty for loading onto vessels using the existing crane. A rotainer supply agreement was finalised following the end of the quarter with rotainers to be delivered to Broome during the December quarter. The remaining commercial agreements with third party contractors and port services are expected to be finalised during the September quarter.



**Figure 5: Progressive installation of power generation units underway**

### *Project schedule and budget*

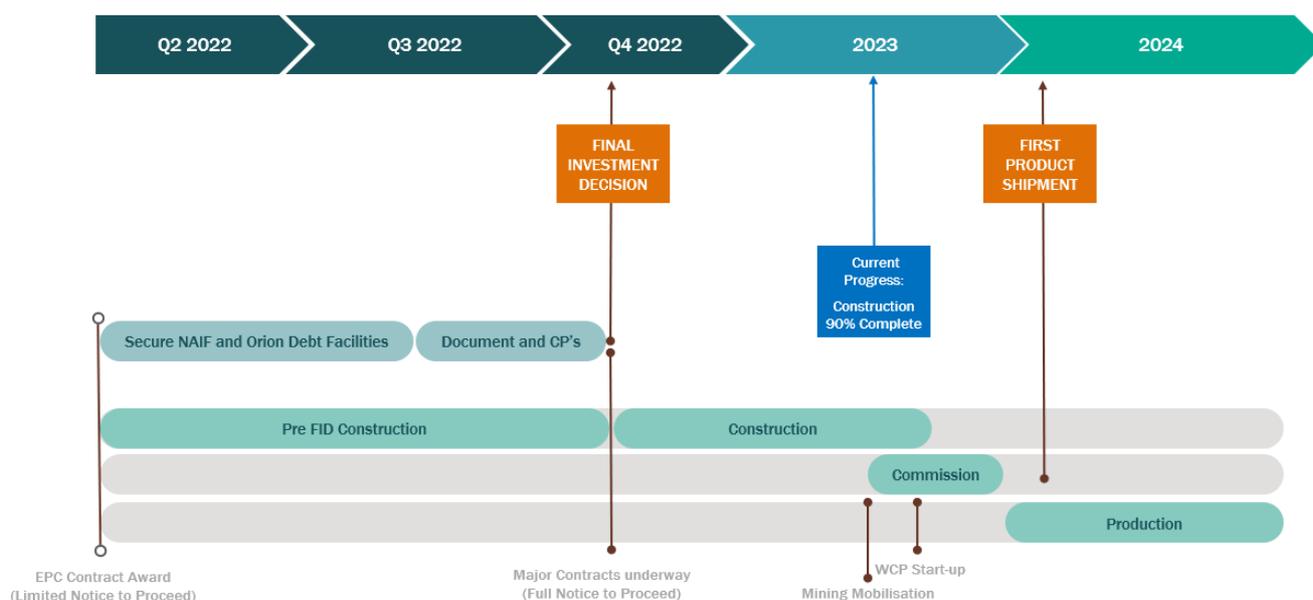
With project construction and operational readiness activities advancing on schedule, it is expected that the project will be completed within the original budget estimate of \$484m, with first product shipment from Thunderbird on track for Q1 2024. The total budget of \$484m includes allowances for project financing costs, remaining contingency and working capital provisions (refer ASX announcement “Final Investment Decision” of 10 October 2022).

Since the inception of the Kimberley Mineral Sands joint venture in March 2021, expenditure at the Thunderbird Mineral Sands Project on early works activity, construction and operational readiness has

totalled over \$300m through to the end of June 2023. At the end of June 2023, KMS cash reserves total \$95m and approximately \$97m of undrawn project financing available. A total of \$225m of project finance has been drawn as of the end of the quarter.

### Project Timeline

A forecast timeline to first production is shown below. Construction activities will be largely completed during the September quarter with commissioning activities commencing in parallel. Waste mining will continue throughout the September quarter with the DMU expected to be delivered to site and installed late in the September quarter. Commencement of ore mining and sequential commissioning of the DMU and process plant is expected to occur during the December quarter with first customer shipment remaining on track for Q1 2024.



**Figure 6: Timeline to First Production from Thunderbird**

### Product Offtake Agreements

KMS has in place a number of non-magnetic (zircon) concentrate take or pay offtake agreements, accounting for in excess of 80% of forecast production volume for the initial five year production period for Thunderbird.

### Markets<sup>1</sup>

Premium zircon from major producers moved from c.US\$1,350 per tonne in mid-2019 through to a peak of c.US\$2,200 per tonne in Q3 2022 and then softening to c.US\$2,100 per tonne in Q4 2022. Prices remained at this level in during the first half of 2023. Global zircon supply remains balanced, and inventory levels remain low, with some new supply coming online in 2023. Major producer prices are expected to, and remain above, US\$2,000 per tonne through 2023, well above long term price forecasts.

The medium to long term supply outlook for zircon continues to indicate an emerging supply deficit with supply from the three leading producers representing c. 55% of current supply, primarily from mature operations with flat or declining forecast production.

Global sulfate ilmenite prices were essentially flat in the second half of 2022 and have weakened during the first half of 2023 but remain very high relative to long term forecasts at around US\$330 per tonne

<sup>1</sup> Zircon market update sourced from TZMI/ZIA and company analysis. Titanium feedstock market update sourced from TZMI and company analysis

FOB. Sulfate ilmenite prices are expected to soften further in 2023. Longer-term, high-grade pigment feedstock demand for production of chloride grade pigment is forecast to grow, and chloride slag (produced from sulfate ilmenite) is the most likely source of new supply.

The trend towards China importing and processing concentrates to supply zircon and titanium feedstocks continued throughout 2022 and into 2023.



**Figure 7: Thunderbird Mine Site Overview – Mining start-up area (foreground) & Process Plant & Tailings Storage Facility (background)**

#### *Community Engagement*

Community engagement and consultation processes have continued throughout the quarter. These included face to face interviews and forums with stakeholders within the Kimberley region, providing information on site activities and forthcoming business opportunities.

Further community engagement activities are scheduled throughout 2023.

#### **South Atlantic Project**

The South Atlantic Project is located within the Rio Grande do Sul Coastal Plain, a region located in the southernmost state of Brazil, Rio Grande do Sul, along the coast of the Atlantic Ocean.

#### *RGM Work Program Activities*

Planning to support a drilling program designed to convert the exploration targets at Retiro and Bujuru into resources are progressing well, with an in-country rig supplier engaged to construct a rig suitable for mineral sands. The rig will be operated by an experienced mineral sands drilling contractor. RGM intends to commence a drilling program of up to 10,000m in late 2023.

IHC Robbins commenced a test work program in Australia on bulk samples taken from Bujuru during the March quarter, with test work expected to be completed during the December quarter.

IBAMA, the national environmental regulator, has progressed the Retiro Installation Licence (LI) application submitted in 2022 and approval of the LI is currently expected later in 2023. Once the LI is granted, RGM may thereafter apply for a Mining Decree for Retiro.

During the quarter, the local municipal mining legislation that limiting mining activities in São José do Norte was ruled to be unconstitutional by the Appeal Court of the Rio Grande do Sul State and the subsequent appeal period has expired.



Figure 8: South Atlantic Project – prospects, including Retiro and Bujuru Exploration Targets

#### CORPORATE ACTIVITIES

As at 30 June 2023, Sheffield held cash reserves of approximately \$24.4m (unaudited).

The Company is fully funded to execute its proposed work program through to the end of 2025 with no further equity forecast to be required for Stage 1 of Thunderbird and current cash of \$24m sufficient to fund corporate costs (~\$2m per annum), the South Atlantic Option (~\$2m remaining) and possible acquisition of 20% of the South Atlantic Project (~\$17m).

Please note the year-to-date position of the Quarterly Cashflow Report should be read in conjunction with this report. During the quarter, a total sum of \$232,258 was paid to related parties and their associates for Director fees and superannuation benefits.

This announcement is authorised by the Board of Sheffield Resources Limited.

Mr Bruce Griffin  
Executive Chair  
20 July 2023

## ABOUT SHEFFIELD RESOURCES

Sheffield Resources Limited is focused on assembling a portfolio of global mineral sands development and production assets to generate cash returns and growth.

Our core asset is our 50% investment in Kimberley Mineral Sands Pty Ltd (KMS), the owner of the world class Thunderbird Mineral Sands Project under development in north-west Western Australia.

Additionally, Sheffield executed a binding agreement in February 2023, providing the Company with an option to acquire up to an initial 20% interest in the South Atlantic Mineral Sands Project in Brazil.

## KIMBERLEY MINERAL SANDS

Kimberley Mineral Sands Pty Ltd, (KMS) is a 50:50 Joint Venture between Sheffield and Yansteel. The joint venture owns and is developing the Thunderbird Mineral Sands Project and adjacent tenements on the Dampier Peninsula.

KMS is governed by a four person Board of Directors with Sheffield and Yansteel each nominating two directors. Key Joint Venture decisions require unanimous approval of both shareholders. KMS operates as a standalone entity with its own management and employees.

## THUNDERBIRD MINERAL SANDS PROJECT

The Thunderbird Mineral Sands Project (“Thunderbird”) is one of the largest and highest grade mineral sands discoveries in the last 30 years. The 2022 KMS Bankable Feasibility Study shows Thunderbird is a technically low risk Project, that generates strong cash margins from globally significant levels of production over a decades long mine-life.

With operations forecast to commence in late 2023, Thunderbird is expected to generate a high-quality suite of mineral sands concentrate products suited to market requirements. These products include a zircon concentrate and a magnetic concentrate that contains a high quality ilmenite suitable smelting into chloride slag or for manufacturing titanium dioxide pigment.

Thunderbird is located in one of the world’s most attractive mining investment jurisdictions and is well placed to deliver long term, secure supply of high quality products to a range of potential customers.

## ABOUT YANSTEEL

Yansteel is a wholly-owned subsidiary of Tangshan Yanshan Iron & Steel Co., Ltd, a privately owned steel manufacturer headquartered in Hebei, China producing approximately 10mt per annum of steel products and has annual revenues of ~A\$6bn.

Construction of a 500ktpa integrated titanium dioxide processing facility including a titanium slag smelter has commenced by the company. This complex will consume the magnetic concentrate from Stage 1 of the Thunderbird Mineral Sands Project under a take or pay offtake agreement.

## SOUTH ATLANTIC PROJECT

The South Atlantic Project is located in south east Brazil. Four main deposits have been identified within the project area: Retiro, Estreito, Capao do Meio and Bujuru with Exploration Targets developed for the Retiro and Bujuru deposits. The combined Exploration Target for Retiro and Bujuru is estimated between 500 and 720 Mt of material at an average grade of 4.0% to 3.2% HM.

The tenements are held by RGM. Sheffield entered into an option agreement with RGM in February 2023 with Sheffield to provide US\$2.5m to fund project related activities over an 18 month period and earn an option to acquire up to 20% of RGM with the payment of a further US\$12.5m (US\$15.0m in total) to acquire a 20% interest. Should Sheffield elect to exercise the option, subject to various conditions being satisfied, including project financing being obtained and all funds required for project construction being secured, Sheffield may exercise a further options to increase its interest in RGM up to 80%.

**Schedule 1: Interests in Mining Tenements as at the end of the quarter as required under ASX Listing Rule 5.3.3**

**Kimberley Mineral Sands Joint Venture (Sheffield interest – 50%)<sup>1</sup>**

Project	Tenement	Holder	Interest	Location	Status
Mineral Sands	E04/2081	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2083	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2084	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2171	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2349	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2390	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2456	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2478	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2494	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2509	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2540	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2554	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2571	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2597	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	L04/82	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	L04/83	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	L04/84	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	L04/85	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	L04/86	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	L04/92	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	L04/93	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	M04/459	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted

Notes:

<sup>1</sup>Thunderbird Operations Pty Ltd is a wholly owned subsidiary of Kimberley Mineral Sands Pty Ltd (refer to ASX announcement 12 March 2021). Kimberley Mineral Sands Pty Ltd is a 50:50 incorporated joint venture between Sheffield Resources Ltd and YGH Australia Investment Ltd (Yansteel).

## Appendix 5B

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

Name of entity

Sheffield Resources Limited

ABN

29 125 811 083

Quarter ended ("current quarter")

30 June 2023

<b>Consolidated statement of cash flows</b>	<b>Current quarter \$A'000</b>	<b>Year to date (12 months) \$A'000</b>
<b>1. Cash flows from operating activities</b>		
1.1 Receipts from customers	-	-
1.2 Payments for		
(a) exploration & evaluation	-	-
(b) development	-	-
(c) production	-	-
(d) staff costs	(437)	(1,472)
(e) administration and corporate costs	(310)	(1,336)
1.3 Dividends received (see note 3)	-	-
1.4 Interest received	274	583
1.5 Interest and other costs of finance paid	-	(1)
1.6 Income taxes paid	-	-
1.7 Government grants and tax incentives	-	-
1.8 Other (provide details if material)	-	-
<b>1.9 Net cash from / (used in) operating activities</b>	<b>(442)</b>	<b>(2,226)</b>

<b>2. Cash flows from investing activities</b>		
2.1 Payments to acquire or for:		
(a) entities	-	-
(b) tenements	-	-
(c) property, plant and equipment	-	-
(d) exploration & evaluation	-	-
(e) investments	-	-
(f) other non-current assets (joint venture)	-	(33,771)

## 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 (12 months) \$A'000
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	Loans to third party entities	-	(1,534)
2.4	Dividends received (see note 3)	-	-
2.5	Other	-	-
<b>2.6</b>	<b>Net cash from / (used in) investing activities</b>	<b>-</b>	<b>(35,305)</b>

<b>3.</b>	<b>Cash flows from financing activities</b>		
3.1	Proceeds from issues of equity securities (excluding convertible debt securities)	-	22,685
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	(99)	(970)
3.5	Proceeds from borrowings	-	-
3.6	Repayment of finance lease	-	-
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>(99)</b>	<b>21,715</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	24,979	40,223
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(473)	(2,226)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	-	(35,305)
4.4	Net cash from / (used in) financing activities (item 3.10 above)	(99)	21,715

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

<b>Consolidated statement of cash flows</b>		<b>Current quarter \$A'000</b>	<b>Year to date (12 months) \$A'000</b>
4.5	Effect of movement in exchange rates on cash held	-	-
<b>4.6</b>	<b>Cash and cash equivalents at end of period</b>	<b>24,407</b>	<b>24,407</b>

<b>5.</b>	<b>Reconciliation of cash and cash equivalents</b> at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	<b>Current quarter \$A'000</b>	<b>Previous quarter \$A'000</b>
5.1	Bank balances	1,881	24,979
5.2	Call deposits	22,526	-
5.3	Bank overdrafts	-	-
5.4	Other (provide details)	-	-
<b>5.5</b>	<b>Cash and cash equivalents at end of quarter (should equal item 4.6 above)</b>	<b>24,407</b>	<b>24,979</b>

<b>6.</b>	<b>Payments to related parties of the entity and their associates</b>	<b>Current quarter \$A'000</b>
6.1	Aggregate amount of payments to related parties and their associates included in item 1 – Salary & Directors fees	232
6.2	Aggregate amount of payments to related parties and their associates included in item 2	Nil
<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.</b>	<b>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.		

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

<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)	(473)
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)	(473)
8.4 Cash and cash equivalents at quarter end (item 4.6)	24,407
8.5 Unused finance facilities available at quarter end (item 7.5)	-
8.6 Total available funding (item 8.4 + item 8.5)	24,407
8.7 <b>Estimated quarters of funding available (item 8.6 divided by item 8.3)</b>	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:	
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:	
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:	
<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: 20 July 2023

Authorised by: By the Board of Sheffield Resources Limited

**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.