

**TZMI CONGRESS
THUNDERBIRD IS GO**

**BRUCE GRIFFIN
EXECUTIVE CHAIR**

November 2022

ASX: SFX

www.sheffieldresources.com.au



SheffieldResources
LIMITED



NOTICE AND DISCLAIMER

IMPORTANT: You must read the following in conjunction with this document.

Summary information in relation to Sheffield

This document contains summary information about Sheffield Resources Limited (ACN 125 811 083) (Company or Sheffield), its subsidiaries and their activities which is current as at the date of this document, unless otherwise indicated. The information in this document remains subject to change without notice, and Sheffield is not responsible for updating, nor does it undertake to update, it. This document should be read in conjunction with Sheffield's periodic and continuous disclosure announcements lodged with the Australian Securities Exchange (ASX), which are available at <http://www.sheffieldresources.com.au/irm/content/asx-announcements1.aspx?RID=398> or www.asx.com.au, including and in particular the "Kimberley Mineral Sands Bankable Feasibility Study", "Thunderbird BFS, Financing and Project Update", "Thunderbird Final Investment Decision" and "Final Investment Decision – Presentation" announcements (the "Primary Announcements") which set out the relevant assumptions, key risks and other information to consider when assessing information contained in this document. The Company confirms that all material assumptions underpinning any production target and any forecast financial information derived from any production target that is disclosed in this announcement continue to apply and have not materially changed. The Company confirms that the form and context of the Competent Person's findings are presented and have not been materially modified from the original market announcements

Industry data

Certain market and industry data used in connection with or referenced in this document, including in relation to other companies in Sheffield's peer group, may have been obtained from public filings, research, surveys or studies made or conducted by third parties, including as published in industry-specific or general publications. Neither Sheffield or their respective representatives have independently verified any such market or industry data.

Compliance Statements

Information and documentation which forms the basis of the Primary Announcements and related information in this document in relation to Mineral Resources, Ore Reserves and metallurgy and process design has previously been reported as detailed below. The Company confirms that it is not aware of any new information or data that materially affects the information included in the relevant market announcements and, in the case of the 24 September 2019 Thunderbird Mineral Resource and Ore Reserve Statement, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that all material assumptions underpinning any production target and any forecast financial information derived from any production target that is disclosed in this announcement continue to apply and have not materially changed. The Company confirms that the form and context of the Competent Person's findings are presented and have not been materially modified from the original market announcements.

Not financial product advice

This document does not constitute, and is not intended to constitute, investment or financial product advice (nor tax, accounting or legal advice). This document should not be relied upon as advice to investors or potential investors and has been prepared without taking account of any person's individual investment objectives, financial situation or particular needs. Any investment decision should be made based solely upon appropriate due diligence.

Financial data

A number of figures, amounts, percentages, estimates, calculations of value and fractions in this document are subject to the effect of rounding. Accordingly, the actual calculation of these figures may differ from the figures set out in this document. All currency amounts are in Australian Dollars (\$) or A\$) unless otherwise stated.

Future performance, forward-looking statements and key risks

This document contains certain "forward-looking statements". Forward-looking statements can generally be identified by the use of forward looking words such as "forecast", "likely", "believe", "future", "project", "opinion", "guidance", "should", "could", "target", "propose", "to be", "foresee", "aim", "may", "will", "expect", "intend", "plan", "estimate", "anticipate", "continue", "indicative" and "guidance", and other similar words and expressions, which may include, without limitation, statements regarding plans, strategies and objectives of management, anticipated production dates, expected costs or production outputs for the Company, based on (among other things) its estimates of future production of the Thunderbird Project and the future operation of Sheffield and the Thunderbird Project.

To the extent that this document contains forward-looking information (including forward-looking statements, opinions or estimates), the forward-looking information is subject to a number of risk factors, including those generally associated with the mineral sands industry. Any such forward-looking statement also inherently involves known and unknown risks, uncertainties and other factors that may cause actual results, performance and achievements to be materially greater or less than estimated. These factors may include, but are not limited to, changes in commodity prices, foreign exchange fluctuations, general economic and share market conditions, increased costs and demand for production inputs, the speculative nature of exploration and project development (including the risks of obtaining necessary licenses and permits and diminishing quantities or grades of reserves), changes to the regulatory framework within which the Company operates or may in the future operate, environmental conditions including extreme weather conditions, geological and geotechnical events, and environmental issues, and the recruitment and retention of key personnel.

Estimates of Mineral Resources and Ore Reserves and Exploration Results

This document and the Primary Announcements contain estimates of Ore Reserves and Mineral Resources and information that relates to exploration results.

The Mineral Resources and Ore Reserves have been extracted from Sheffield's ASX releases;

"THUNDERBIRD ORE RESERVE UPDATE" 24 March 2022

"MINERAL RESOURCE AND ORE RESERVE STATEMENT" 24 September 2019

"SHEFFIELD DOUBLES MEASURED MINERAL RESOURCE AT THUNDERBIRD" 5 July 2016

"THUNDERBIRD ORE RESERVE UPDATE" 31 July 2019

"HIGH GRADE MAIDEN MINERAL RESOURCE AT NIGHT TRAIN" 31 January 2019

"THUNDERBIRD ORE RESERVE UPDATE" 16 March 2017

The exploration results have been extracted from Sheffield's ASX releases;

"NEW LARGE HIGH GRADE DISCOVERY SOUTH OF THUNDERBIRD" 13 November 2018

"EXCEPTIONAL RESULTS CONFIRM MAJOR DISCOVERY AT NIGHT TRAIN" 9 October 2018

A copy of these announcements is available at <http://www.sheffieldresources.com.au/irm/content/asx-announcements1.aspx?RID=398> or www.asx.com.au

Bankable Feasibility Study ("BFS")

This document contains information that relates to a Bankable Feasibility Study. This information was extracted from the following ASX releases by Sheffield:

"THUNDERBIRD BFS RESULTS, FINANCING AND PROJECT UPDATE" dated 24 March 2022

"KMS BANKABLE FEASIBILITY STUDY PRESENTATION" 24 March 2022

"THUNDERBIRD BFS DELIVERS OUTSTANDING RESULTS" 24 March, 2017

"BFS UPDATE MATERIALLY IMPROVES PROJECT ECONOMICS" 31 July 2019

Other Extracted Information

In addition to those ASX releases referred to above, this document contains information extracted from the following ASX releases:

"THUNDERBIRD CONSTRUCTION OVER 50% COMPLETE" 9 November 2022

"THUNDERBIRD FINAL INVESTMENT DECISION" 7 October 2022

"QUARTERLY ACTIVITIES REPORT" and "APPENDIX 5B CASHFLOW REPORT" 17 October 2022

"FINAL INVESTMENT DECISION – ADDENDUM TO PRESENTATION" 10 October 2022

"BINDING US\$110M ORION LOAN FACILITY EXECUTED" 3 October 2022

"EXECUTION OF A\$160M NAIF LOAN FACILITY AGREEMENT" 8 August 2022

"BINDING OFFTAKE SECURED FOR THUNDERBIRD ZIRCON CONCENTRATE" 8 June 2021

"JOINT VENTURE COMPLETION AND BOARD RESTRUCTURE" 12 March 2021

"SHEFFIELD AND YANSTEEL EXECUTE BINDING JV AGREEMENTS" 6 January 2021

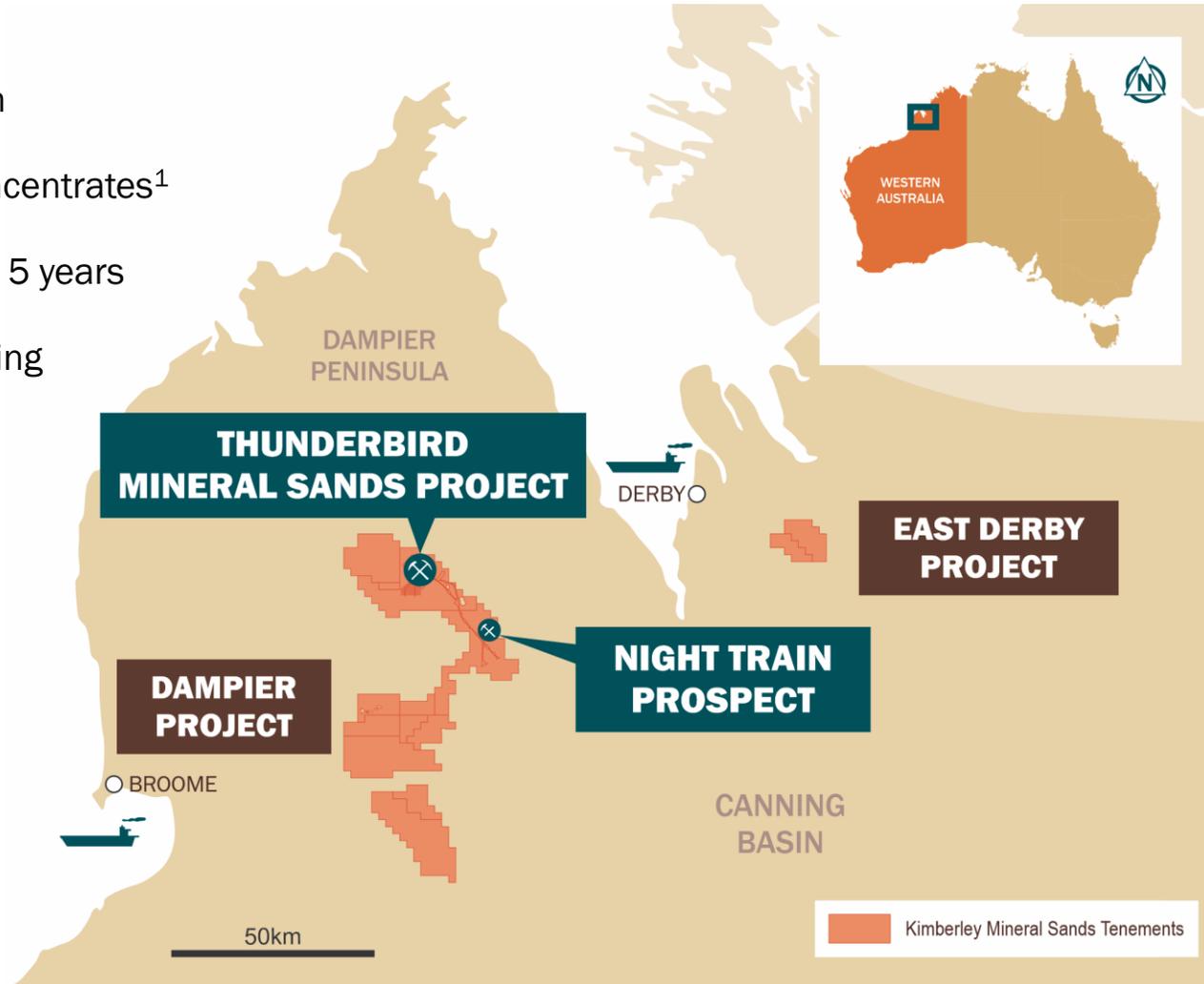
"TRANSFORMATIONAL THUNDERBIRD JOINT VENTURE" 11 August 2020

"MINING LEASE GRANTED OVER THUNDERBIRD MINERAL SANDS PROJECT" 26 September 2018

"FEDERAL ENVIRONMENTAL APPROVAL GRANTED FOR THUNDERBIRD" 28 September 2018

THUNDERBIRD MINERAL SANDS PROJECT

- 50/50 JV with Yansteel
- **World's largest zircon reserve**, high grade, in a low risk jurisdiction
- **Stage 1 Production** targeting 1.1mt of zircon and ilmenite rich concentrates¹
- **Offtake agreements in place** for ~80% of Stage 1 revenue for first 5 years
- Yansteel plant construction complete, testing prior to commissioning
- Stage 1 **fully funded** and **construction 53% complete**²
- First product shipment expected in **Q1 2024**

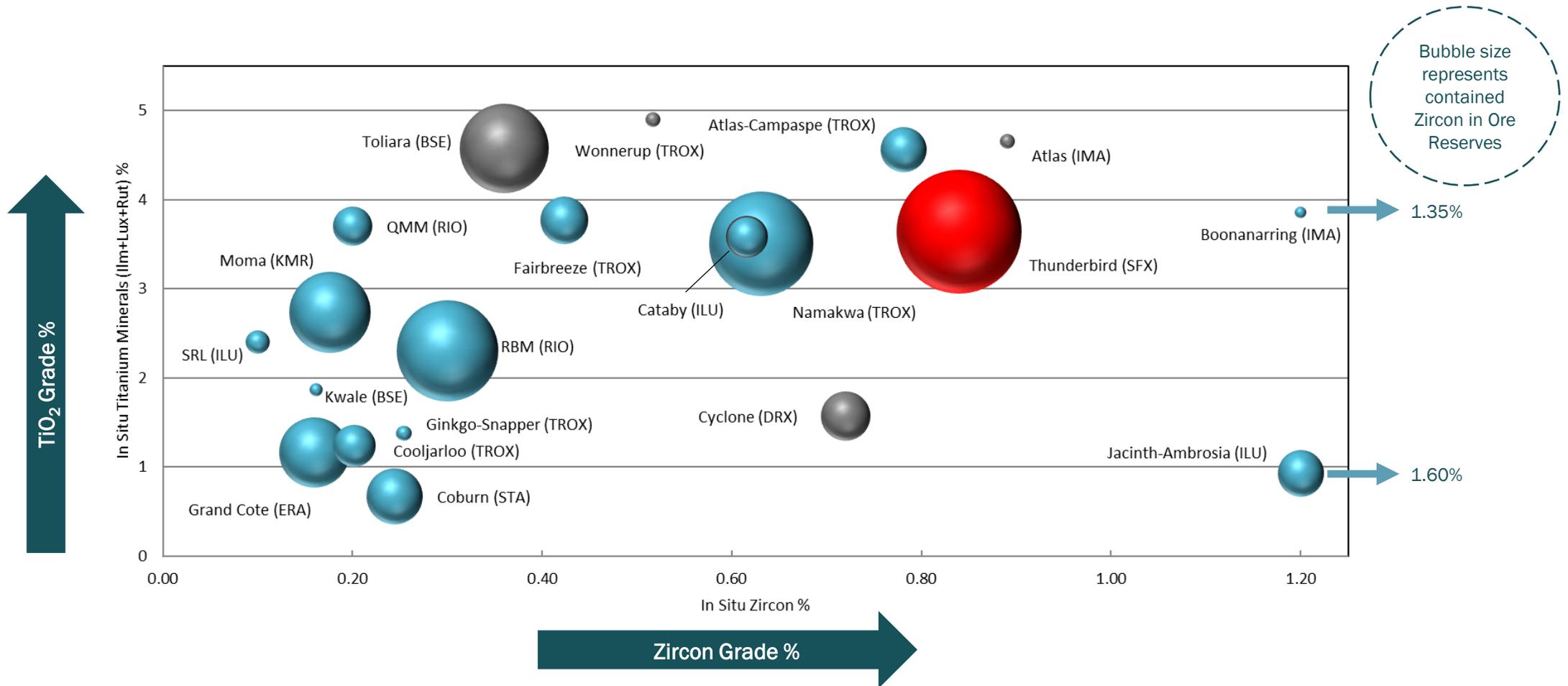


1. ASX Announcement "Thunderbird BFS Results, Financing and Project Update" 24 March 2022

2. Project progress as at 31 October 2022

LARGEST ZIRCON RESERVES GLOBALLY – IN LOW-RISK JURISDICTION

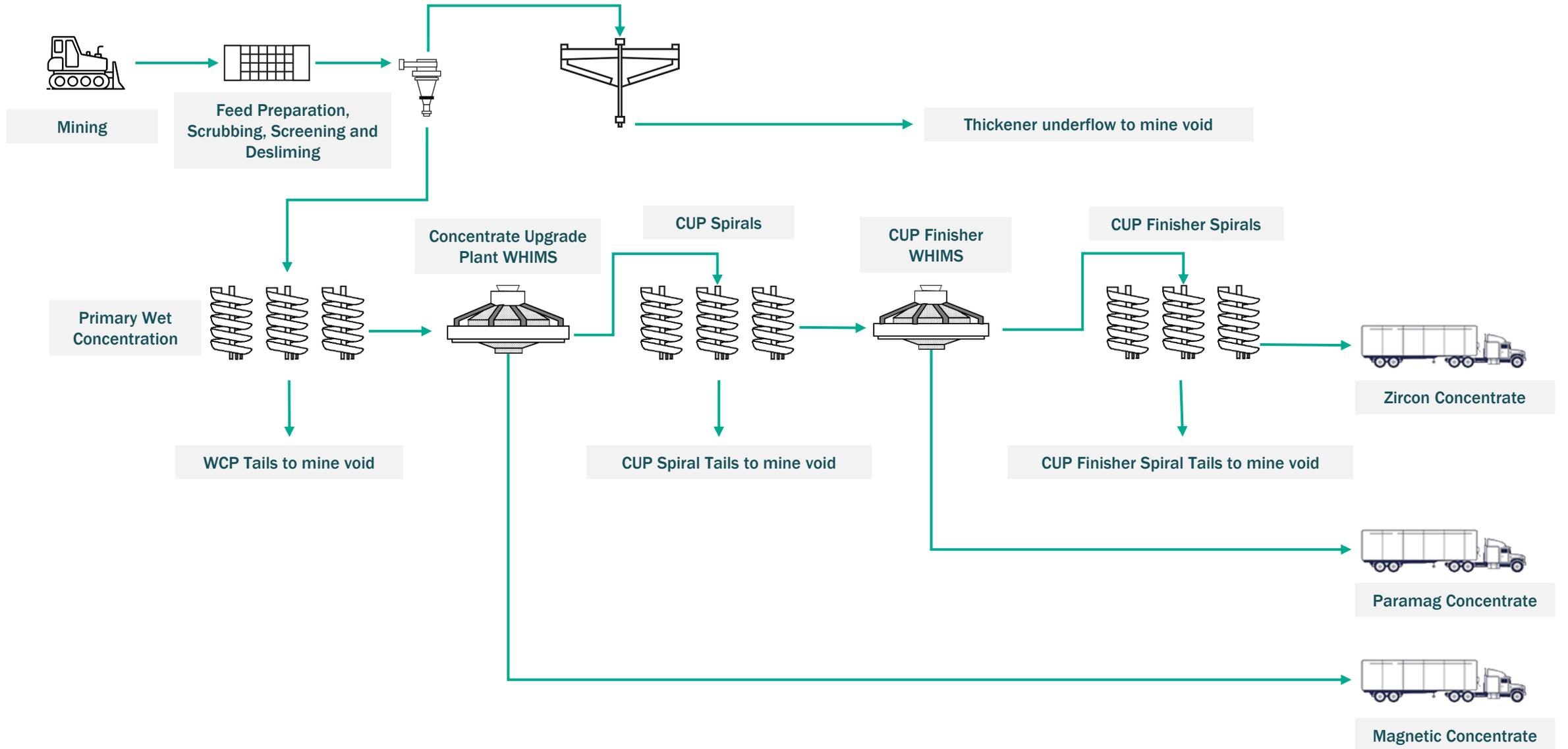
Contained Zircon in Ore Reserves and Grade for Selected Mineral Sands Deposits¹²³



Note:

1. Ore Reserve, published on the ASX on 24 March 2022. Thunderbird Ore Reserves ranked against latest published Ore Reserves of current mineral sands operations and projects under investigation globally. Accordingly, for the operating projects, no account is made for any volumes of product already produced
2. Blue bubbles are operating mines, grey bubbles are Ore Reserves reported but the project is not operating
3. Data compiled by Sheffield from public sources, refer to Page 20. This analysis does not illustrate the variance in product value between rutile, leucosene and ilmenite

SIMPLE FLOWSHEET PRODUCING CONCENTRATES



THUNDERBIRD – PRODUCTS

Zircon concentrate (60% of revenue)

- 210,000¹ tonnes per annum in Phase 1
- 40% ZrO₂, 16% TiO₂, 0.4% monazite
- ~40% of zircon recoverable as premium with standard processing
- 75% contracted under 5-year, market price, take or pay contracts

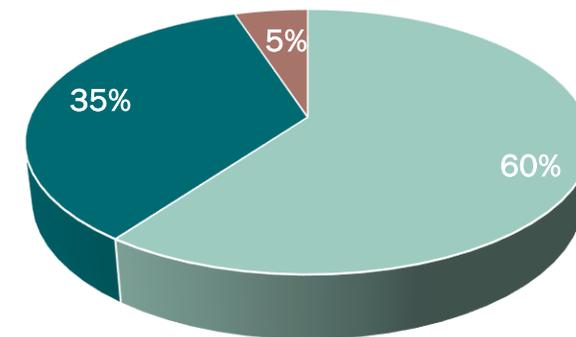
Magnetic Concentrate (35% of revenue)

- 750,000¹ tonnes per annum in Phase 1
- Mixture of ilmenite and titano-haematite, TiO₂ typical 38.5%
- Ilmenite recovered by roasting and magnetitic separation of titano-haematite
- Contained ilmenite is high quality; ~55% TiO₂ and low in Cr₂O₅, CaO and MgO
- Suitable for chloride slag or sulphate pigment
- Binding offtake with Yansteel
 - Fixed price per % TiO₂ for 5 years then market price, life of mine, take or pay, 100% from Phase 1
 - First right of refusal at market price from expansions

Paramagnetic Concentrate (5% of revenue)

- 90,000¹ tonnes per annum in Phase 1
- 10% ZrO₂, 28% TiO₂, 2% monazite

% LIFE OF MINE REVENUE



- Zircon Concentrate
- Magnetic Concentrate
- Paramagnetic Concentrate

Note:

1. Average annual tonnage of first 4 years of Phase 1 production

LEVERAGING YANSTEEL DOWNSTREAM CAPABILITY

- Thunderbird is a 50/50 JV with Yansteel, part of Tangshan Yanshan Iron & Steel, a privately owned Chinese steel manufacturer
- Construction of Yansteel's vertically integrated smelter/pigment complex in China completed
- Section by section testing currently underway with commissioning to commence before the end of this year
- Yansteel designed the plant to process ilmenite feedstock from various global sources including Australia (Thunderbird)
- Feed preparation plant (FPP) includes fluidised bed roasters and magnetic separation



Process Plant

Source: Yansteel



Tank Farm

Source: Yansteel

THUNDERBIRD CONSTRUCTION OVER 50% COMPLETE

DRY SEASON 2021 – ROAD, VILLAGE AND PROCESS SITE CLEARING



Thunderbird Access Road



Thunderbird Accommodation Village

THUNDERBIRD CONSTRUCTION OVER 50% COMPLETE

APRIL 2022 – VILLAGE AND EPC CONTRACTOR MOBILISED TO SITE



Thunderbird Process Plant Foundation Preparation



Thunderbird Accommodation Village

THUNDERBIRD CONSTRUCTION OVER 50% COMPLETE

MAY 2022 – PROCESS PLANT EARTHWORKS AND VILLAGE



Thunderbird Process Plant Earthworks



Thunderbird Accommodation Village

THUNDERBIRD CONSTRUCTION OVER 50% COMPLETE

JUNE 2022 - PROCESS PLANT CONCRETE FOUNDATIONS



Thunderbird Concrete Batch Plant and Process Plant Site



Thunderbird WCP Concrete Works

THUNDERBIRD CONSTRUCTION OVER 50% COMPLETE

JULY 2022 – PROCESS PLANT, BOREFIELD AND TAILINGS STORAGE FACILITY (TSF)



Thunderbird Process Plant Concrete Works



Clearing of Thunderbird TSF

THUNDERBIRD CONSTRUCTION OVER 50% COMPLETE

AUGUST 2022 - PROCESS PLANT, BOREFIELD AND TSF



Thunderbird Process Plant



Thunderbird Borefield

THUNDERBIRD CONSTRUCTION OVER 50% COMPLETE

SEPTEMBER 2022 - PROCESS PLANT, POWER/LNG, AND TSF



Thunderbird Process Plant



Thunderbird LNG and Power Station Pads

THUNDERBIRD CONSTRUCTION OVER 50% COMPLETE

OCTOBER 2022 - PROCESS PLANT, POWER/LNG, AND TSF



Thunderbird Process Plant



Thunderbird TSF

THUNDERBIRD CONSTRUCTION OVER 50% COMPLETE

NOVEMBER 2022 – PROCESS PLANT, LONG LEAD ITEMS ON SITE, TSF

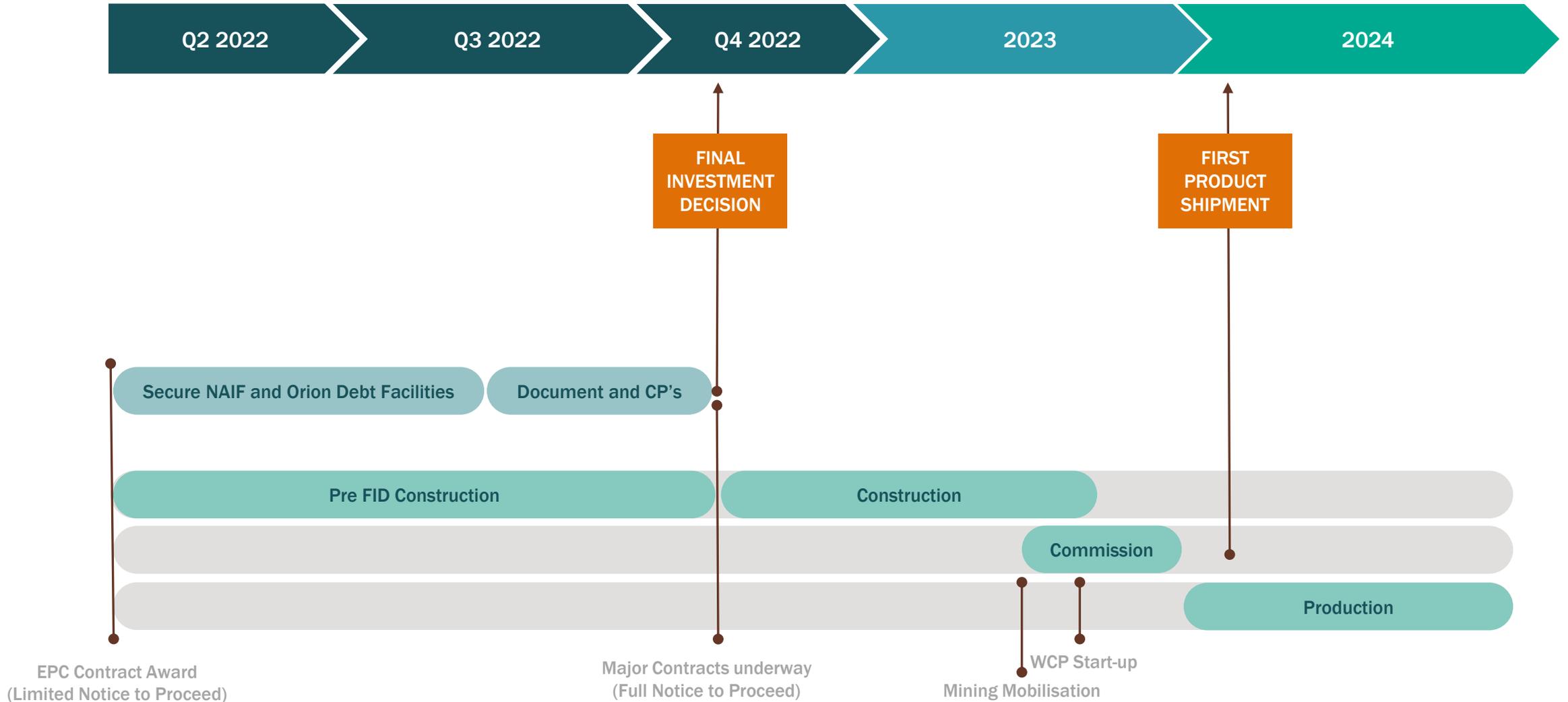


Thunderbird Process Plant Steel Structure Installation



Thunderbird Plant Spirals on site

FIRST PRODUCTS SHIPPED IN Q1 2024



OUR ESG APPROACH

Environmental

- Full State and Federal environmental approvals granted following a detailed Public Environmental Review ("PER") process
- Rehabilitation throughout mine life – minimises disturbed area
- Environmental practices & protocols mirror Equator Principles - Addressing the Climate Change challenge

Social

- Co-existence Agreement (Native Title Agreement) in place
 - ▶ Targeted 40% Aboriginal Employment by year 8 of operations
 - ▶ Includes Aboriginal Training Fund & Business Support programs
 - ▶ Cash royalties to Traditional Owners across a 36 year mine life
- High standards in safeguarding the environment, water, diversity and Aboriginal heritage
- Focus on Local Employment – 300 jobs on a Drive In, Drive out basis
- State and Federal Tax Contribution of >A\$1B over 36 year mine life

Governance

- Compliant with ASX recommended governance framework
- Commitment to increase Board and management diversity

SHEFFIELD RESOURCES



- 50/50 JV with Yansteel
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THANKYOU

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ADDITIONAL PEER INFORMATION

Company	Company Material Reference
Kenmare Resources	2021 Annual Report
Strandline Resources	2019 Reserve Statement
Eramet	2021 Universal Filing
Tronox	2021 Annual Report
Diatreme Resources	2016 Reserve Statement
Rio Tinto	2021 Annual Report
Base Resources	2022 Reserve Statement
Iluka Resources	2021 Reserve Statement
Image Resources	2021 Annual Report