

Manuka Resources Limited

- Active gold & silver producer
- Exceptional exploration potential within the Cobar Basin
- Valuable production infrastructure, strategically located



August 2022



South Taranaki Bight Project

- World class tier 1 project
- Offshore Vanadium Titaniferous Iron Sands
- West Coast, North Island New Zealand



“Manuka intends to grow shareholder value by optimising quality resource assets. The emerging green energy fuelled global economy is providing such opportunities.”

Corporate Summary

(post acquisition assumptions)

ASX: MKR

Share price (5 August 2022)	A\$0.16
Shares on issue	465m
Market capitalisation (undiluted)	A\$70m
Options (exp. April & July 2023 @ 25c)	22.25m
Options (exp. March 2023 @ 50c)	32m
Options (exp. December 2024 @ 35c)	12m
Total debt (as at 30 June 2022)	~A\$11.0m
Cash at bank (as at 30 June 2022)	~A\$1.5m

Board of Directors & Senior Management

Executive Chairman	Dennis Karp
Executive Director (TTR)	Alan Eggers
Non-executive Director	Anthony McPaul
Non-executive Director	Nick Lindsay
Non-executive Director	John Seton
Company Secretary	Toni Gilholme
Chief Operating Officer	Haydn Lynch

Board of Directors & Management

(the management team has a combined shareholding in Manuka Resources exceeding 40%)



Dennis Karp – Executive Chairman

Alan Eggers – Executive Director

Nick Lindsay – Non-Executive Director

Anthony McPaul – Non-Executive Director

John Seton – Non-Executive Director

Haydn Lynch – Chief Operating Officer

Toni Gilholme – Company Secretary & Financial Controller

David Power – Operations Manager

Rod Griffith – Mining & Technical Consultant

Dennis commenced his career in the Australian financial markets in 1983. He was the Head of Trading at HSBC Australia prior to joining Tennant Limited in 1997, one of Australia's largest physical commodities trading companies with operations in Asia and Europe. He was a principal shareholder of Tennant Metals until 2010, and a director until December 2014,

He led the syndicate which purchased the Manuka assets in 2016. He holds a Bachelor of Commerce from the University of Cape Town

Alan is a geologist with over 40 years of local & international experience. He brings with him exceptional commercial expertise and was a founding director of Summit Resources Ltd which they built from listing on the NZX in 1987 into an ASX top 200 company and an ultimate takeover by Paladin Energy for A\$1.2B in 2007. He holds a number of private directorships.

Alan holds Bachelor of Science, Honours and Masters of Science degrees from Victoria University of Wellington, and is a Fellow of the Society of Economic Geologists, a member of AusIMM, and the Australian Institute of Geoscientists

Dr Lindsay is a mining executive who brings strong experience and a mix of commercial, technical and academic qualifications. He has worked directly for a range of major and mid-tier mining companies over his career, and led juniors in copper, gold and silver through listings and mergers. Nick is a geologist by profession, specialising in process mineralogy, and has postgraduate degrees from the University of Otago (NZ), the University of Melbourne and the University of the Witwatersrand (South Africa). He is a member of the AusIMM and Australian Institute of Geoscientists

Tony is a senior mining executive with over 35 years' experience in mining operations and mineral processing, (both underground & opencut operations). He was most recently the general manager for Newcrest's Cadia Valley Operations, in Orange NSW, and formally retired from Newcrest in 2016.

Tony has sat on a range of Boards and industry bodies including the Minerals Council Executive Committee and Mineral Industry Advisory Council. He qualified in automotive engineering from Goulburn TAFE.

John is an Auckland based lawyer with extensive experience in commercial law and the mineral resources sector. He was a director of Summit Resources Limited until its sale in 2007, as well as being a director of a number of other ASX and NZX listed private companies. He was a former Chairman of the Vietnam/New Zealand Business Council.

John holds a Bachelor of Laws from Victoria University, Wellington, and a Masters of Law (Honours) from the University of Auckland and is a Chartered Fellow of the New Zealand Institute of Directors.

Over 25 years of experience in M&A, financial markets and private equity, and with a substantive track record in the origination and execution of domestic & cross-border transactions in metals & mining in Australia, Africa, Japan, China, and Mongolia.

Senior management experience includes Bankers Trust Australia, Investec Bank, RBC Capital Markets and Southern Cross Equities. Haydn has degrees in Mechanical Engineering and Economics from the University of Qld and a Masters in Commerce from the University of New South Wales.

Toni is an experienced Financial Controller and a Chartered Accountant with over 15 years experience in Financial Accounting and Company Secretarial matters as well as an additional 10 years of experience in a variety of roles in Public Practice. She has worked in a range of senior positions both in the UK and in Australia and has a strong focus on efficiency gains through improving processes and strengthening internal controls.

She holds a Bachelor of Business from the University of Technology, Sydney

David has strong operational experience managing mining assets, focussing on plant and infrastructure in both underground and open cut operations. This experience extends to many of the major mines in the Central West of NSW including the Peak Gold, Cadia & Endeavour mines over a 30+ year period. His network of suppliers and personal contacts within the region has proved to be invaluable

David holds statutory qualifications as a mining superintendent, qualified trainer and assessor, together with numerous ticketed roles

Rod has over 25 years of mine management and engineering experience as COO and GM in a number of mid tier mining companies. He has significant Central Western NSW experience with KBL Mining, Silver City Minerals, Girilambone Copper and Cobalt Blue across a number of commodity groups and mining styles.

Rod holds a Bachelor of Civil Engineering and Surveying from University of Newcastle and a post graduate in mining engineering from the University of Ballarat. diploma

Our core projects – Cobar Basin



Wonawinta Silver Project (100% owned & producing)

Ag

Commenced 31-3-2022 – now largest primary silver producer in Australia

- Total resource 38.3Mt @ 41.3g/t Ag & 0.54% Pb (containing 50.94M oz Ag, 207,200t Pb)*
- 515,000t stockpile grading 70g/t Ag – production underway
- Strategically valuable 850,000t.p.a. plant, mine camp and all necessary infrastructure
- Further confirmation of Cobar style Pb Zn Ag Wonawinta Deeps as announced 1 June 2021

Mt Boppy Gold Project (100% owned)

Au

Paused following completion phase 1 production in March 2022

- Open pit mine (previously produced circa 500,000oz Au @ 15g/t Au)
- 42 person mining camp, power and water, administration office, exploration office
- Awaiting mine-plan to confirm recommencement of operations Q1 2023
- Mineral Resource update 44,820oz gold @4.95g/t Au with further material increase possible based on successful exploration**

Our core projects – the world class STB

South Taranaki Bight Project (100% owned, BFS pending)

V Ti Fe

Detailed PFS completed, BFS scheduled for completion within 12 months

- World class tier 1 resource – 3.8Bt Fe, vanadium and titanium
- Targeted lowest quartile carbon emissions* for any Fe producer globally (62kgCO²/t vs 125-250kgCO²/t)
- Anticipated lowest quartile costs for Fe producers* US\$20-23/t FOB (PFS 2013 adj. inflation) EXCLUDING credits from vanadium or titanium
- Located within NZ EEZ (exclusive economic zone targeting gas, oil, mining)
- NZD\$85m invested to date
- 5M tonnes pa production targeted before end of 2025
- New Zealand government focused on implementing mining code subject to appropriate environmental safeguards

* based on TTR PFS: <https://www.manukaresources.com.au/site/investor-centre/pending-acquisitions>

Manuka's Gold and Silver Resource Base

On 29th July 2022 a Resource Update was announced for the Mt Boppy gold project through the ASX. On 1st April 2021 a Resource Upgrade was provided for Wonawinta Silver Project reflecting a 43% increase in the Measured and Indicated Resource Categories.

Mineral Resource Summary 19 May 2022 Mt Boppy Resources

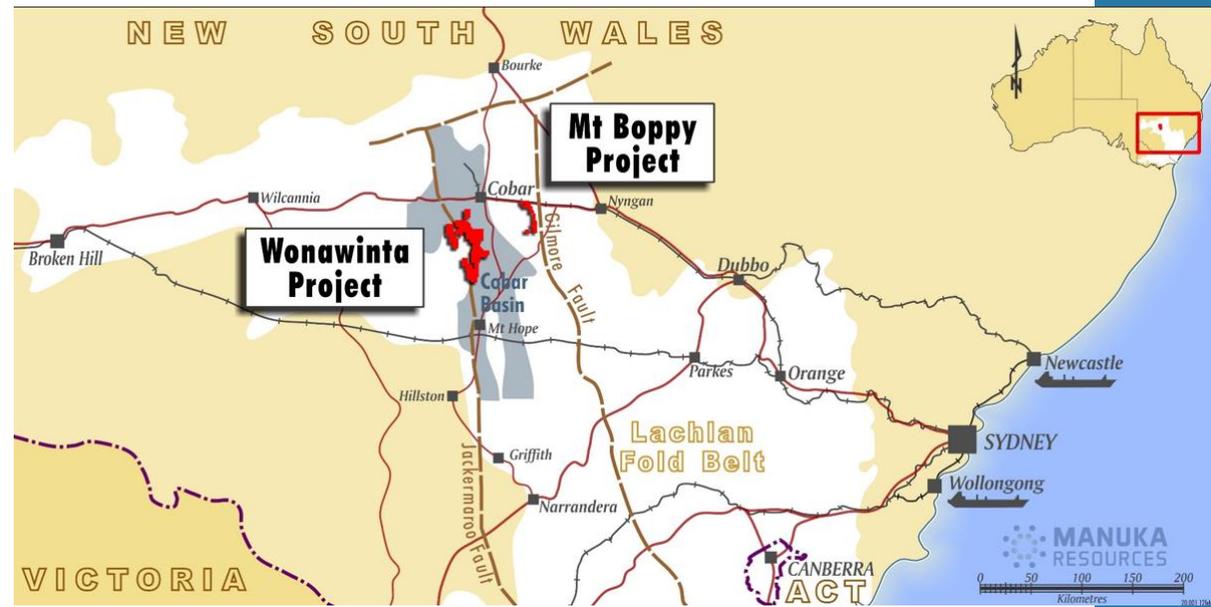
Resource Category	Tonnes	Grade Au (g/t)	Contained gold ounces
Measured	106,850	5.25	18,020
Indicated	150,000	4.85	24,700
Inferred	17,000	3.93	2,100
Total	281,850	4.95	44,820

JORC Resources Wonawinta Silver Project as at 1 April 2021*

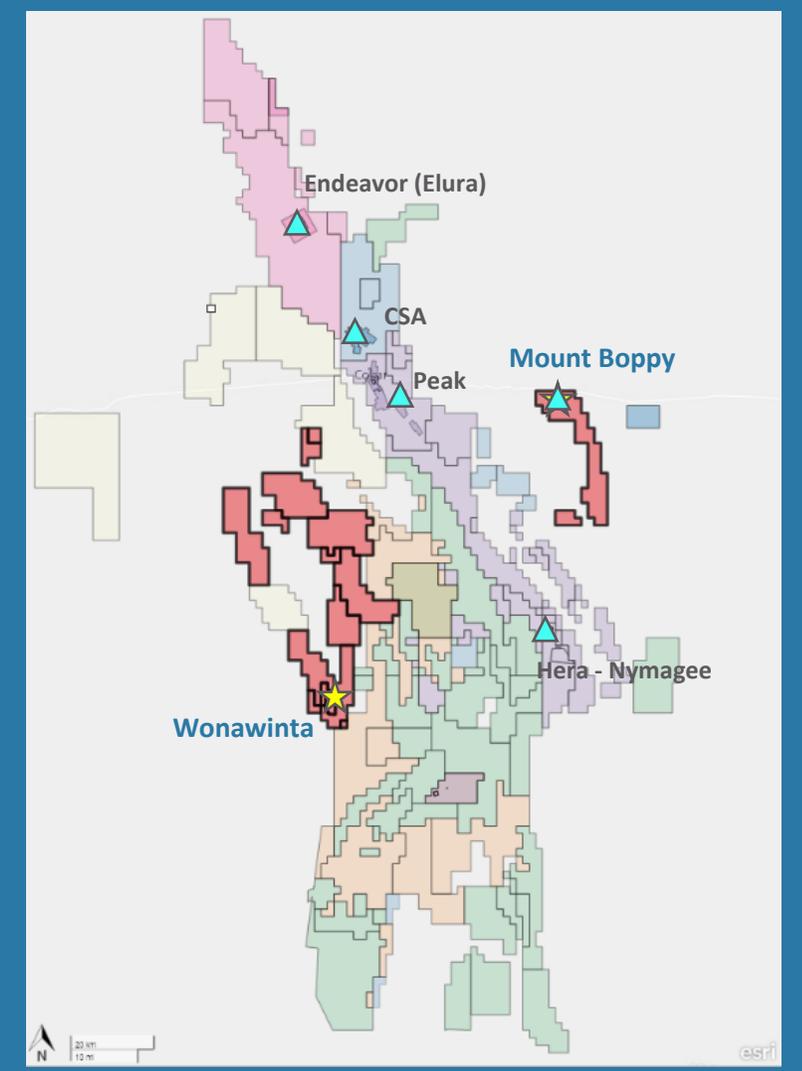
Resource Category	Material (Mt)	Ag (g/t)	Ag Moz	Pb (%)	Pb kt
Measured	1.1	47.3	1.65	0.69	7.5
Indicated	12.3	45.5	18.04	0.83	102.8
Inferred	24.9	39	31.25	0.39	96.9
Total	38.3	41.3	50.94	0.54	207.2
Stockpile	0.515	70	1.16		

Major Producers, substantial discoveries within Cobar Basin

Manuka currently exploring for:
 copper – gold
 zinc – silver - lead



- Manuka
- ▲ Operating mines
- Peel Mining
- Aurelia Metals
- Anchor Resources
- Toho Zinc
- Glencore
- Sandfire Resources



Source: S&P Global Market Intelligence

Leverage in the Cobar Basin

*Cobar Regional Review highlights the following:

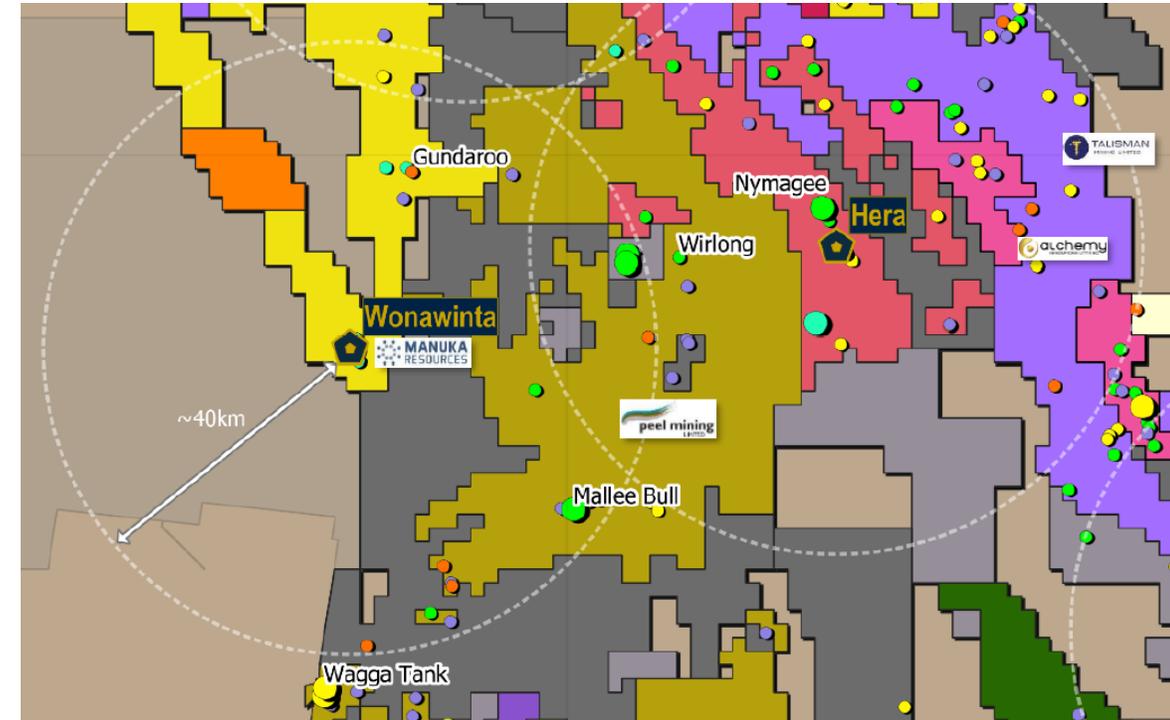
Explorers	>20
Operating Projects	6
Operating Plants	5

Manuka: existing 850k tpa leach plant plus potential to add similar size flotation circuit ~A\$30m

- *provides improvements to own processing recoveries*
- *provides additional capacity to future discoveries*
- *provides regional corporate opportunity*

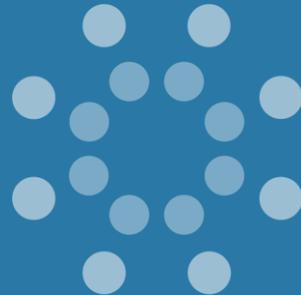
Mine permitting timetables, COVID-19 driven delays, equipment inflation and staffing shortages expected to drive future corporate activity in Cobar region.

*Argonaut review of Operators, Resources & Production (July 2021)



Silver production at Wonawinta

- Wonawinta produced approx. 3.0Moz silver during 2012-2013
- Previously Australia's largest primary silver producer
- JORC mineral resource estimate following extensive infill drilling ~51M oz silver (also 207Kt Pb not included as silver equivalent)*
- Substantial plant capacity >850kt pa
- Manuka commenced silver production on 31 March 2022 on 515,000t stockpiles containing 70g/t Ag* (to continue until Q4 2022 and produce ~900,000oz Ag)



* Refer ASX releases dated 1 April 2021 (also see slide 6)



A very deep basin

The major producers in the Cobar basin all operate at substantial depth:

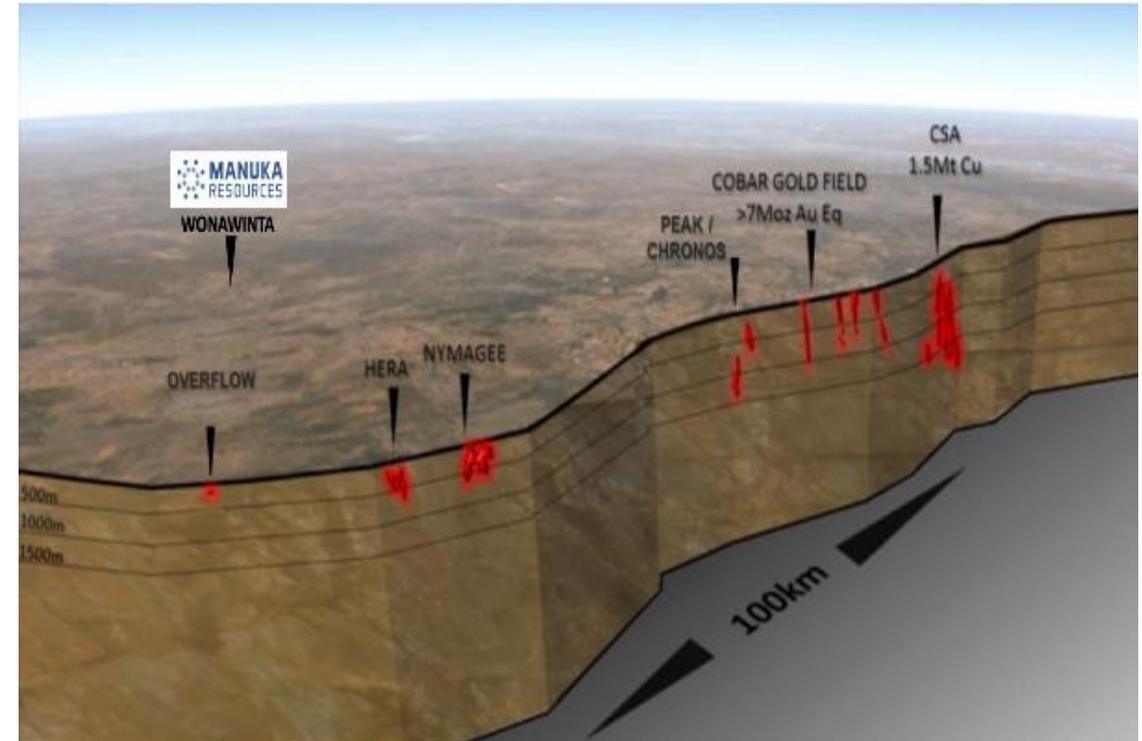
- CSA copper gold mine >2.0km deep
- Peak gold mine >1.0km deep
- Endeavour lead, zinc, silver mine (now on C&M) >1km deep

But Wonawinta silver oxide project is just 60m deep.

***Wonawinta Deeps 'proof-of-concept' diamond drill program, initially drilled in Feb 2021 successfully highlights lead-zinc-silver mineralisation over 3km strike**

- 18 hole 5,000m drilling program (2,400mt diamond drill) drilled beneath existing open pits over 3km in length, supports existence of lead-zinc-silver sulphide mineralization with Mississippi Valley Type (MVT) affinities
- The 3km strike (beneath the pits) is part of a total 15km strike length along the Winduck Shelf strata held by Manuka on western flank of Cobar Basin
- Geophysics survey commenced in May 2022 along entire Wonawinta Trend. Initial indications very promising. To be followed by further drilling in Sept quarter
- Mineralisation intervals to date include:
 - 4m @3.20% Pb, 3.20% Zn, and 63g/t Ag*
 - 5m @1.7% Pb, 0.82% Zn, and 128 g/t Ag*

- Refer ASX release dated 1 June 2021



Mt Boppy (past, present & future)

Mt Boppy historically produced 500koz @ 15 g/t from a very contained area

Manuka commenced production of Mt Boppy ores in April 2020, our IPO estimated Phase 1 production of 22-24koz Au but delivered >41,000koz.

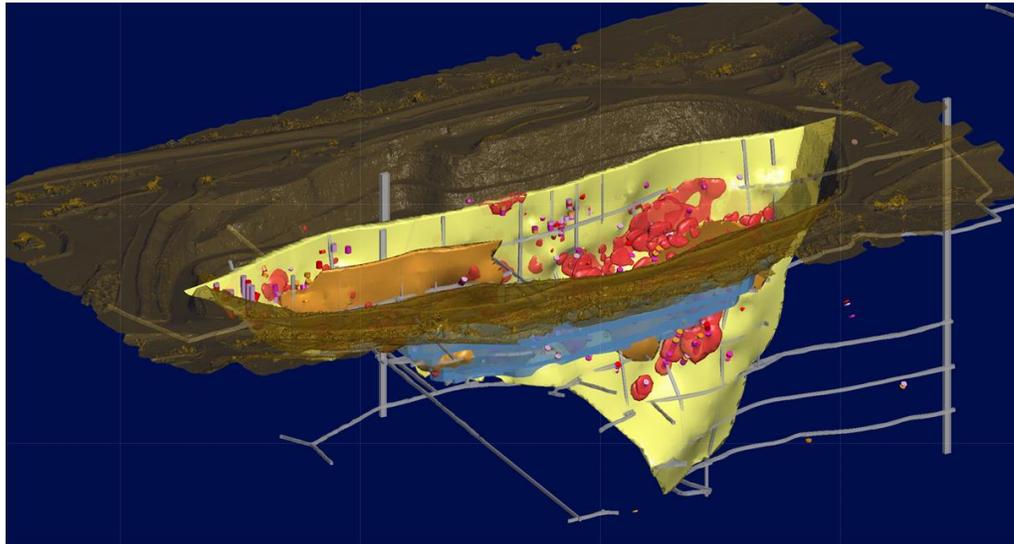
Higher grades + plant operating efficiencies combine to drive Phase 1 production to nearly double original forecast*

Mt Boppy is open at depth with possible along-strike extensions to the North and South

Updated resource of ~45,000oz at 4.95g/t Au

Internally targeting a Resource many times the size of what we recovered in Phase 1

Await mine plan (expected late-Aug) to confirm recommencement of operations Q1 2023



Perspective view looking south-east. West lode is shown in orange, east lode shown in yellow and current pit design in blue, and high-grade zone (5 g/t Au) shown in red. Historical workings are shown in grey

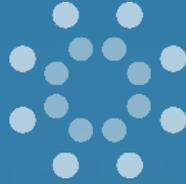
* Refer ASX releases dated 4 March 2022



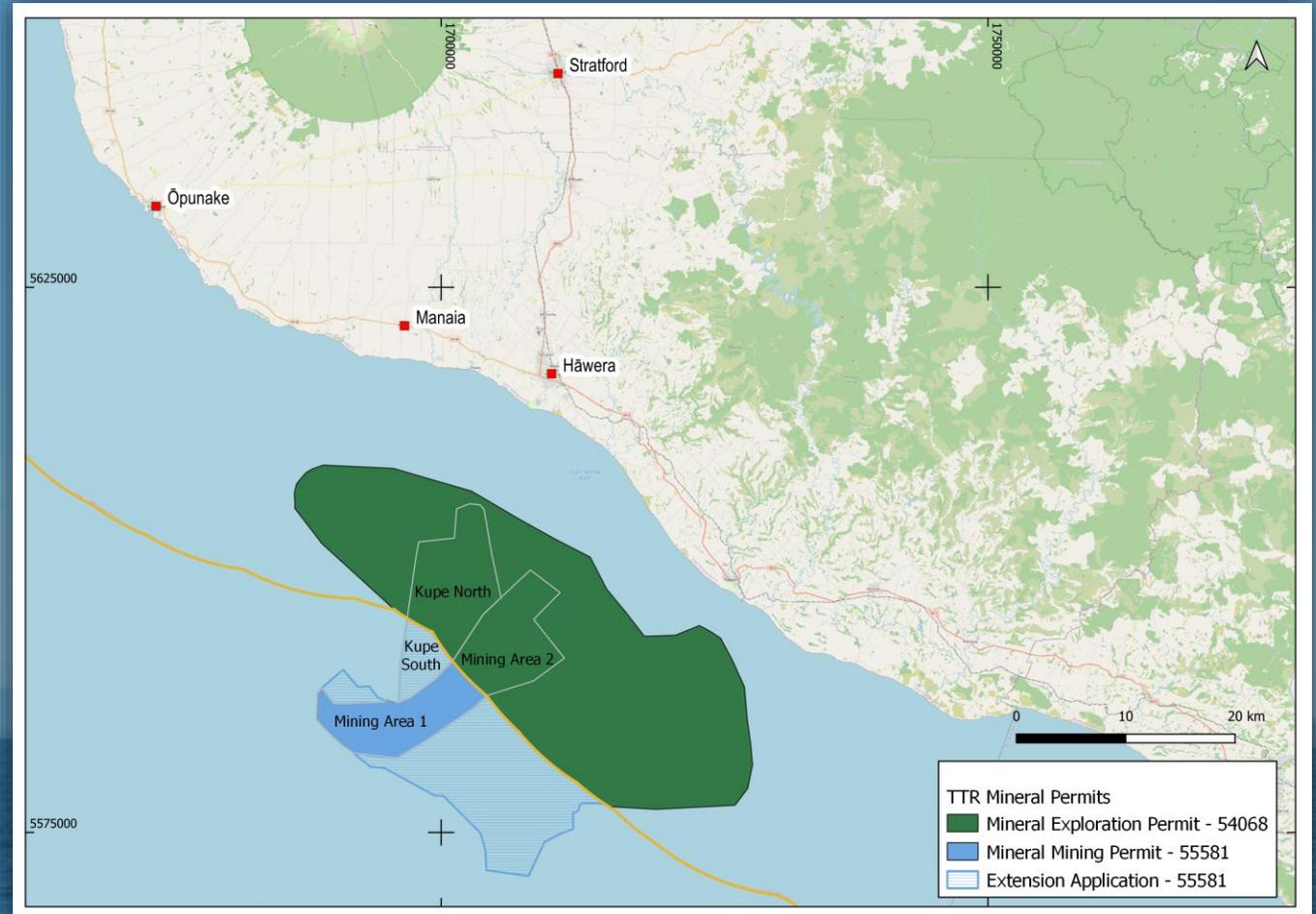
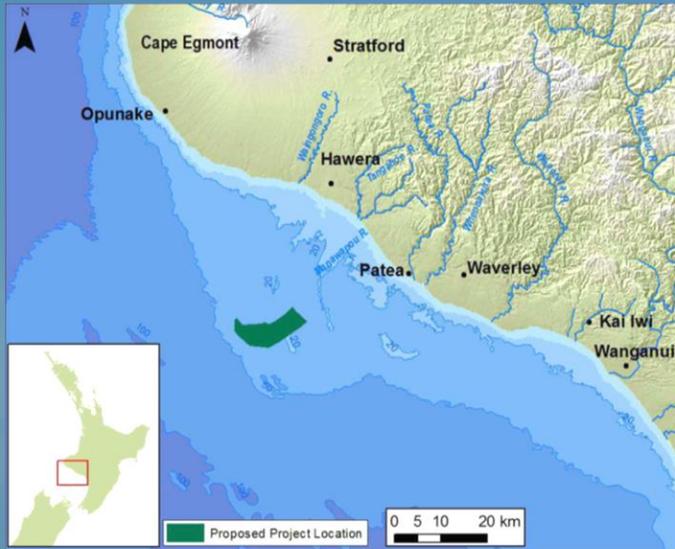
South Taranaki Bight Project



- Offshore Vanadium Titaniferous Iron Sands
- West Coast, North Island, New Zealand
- World class project



South Taranaki Bight (STB): Vanadium, Titanium Iron Sands Project



STB Project Features



Proposed iron sand project from the South Taranaki Bight forecast to be in the bottom quartile of the global iron ore operating cost curve



The project has the potential to recover 5Mt of iron ore per annum for minimum 20-year life of mine. The global seaborne market for iron ore is in excess of 1,000Mt per annum



Anticipated lowest quartile CO₂ emitter for iron ore producers



0.5% vanadium (as V₂O₅)



Anticipated lowest quartile Fe cost producer

STB project is headed by Alan J Eggers and a team who have a proven track record of building resource companies in New Zealand and internationally

Achievements to Date

Objective: To discover and develop Titanomagnetite Iron Sands offshore North Island NZ

Project Expenditure: NZD\$85m (AUD\$76.50m equivalent)



Final EPA approval & BFS required to commence finance, commissioning and concentrate production
Operation deploys existing mineral recovery and shipping technologies

STB Iron Sands Project: Environmental Advantages



- Operation has small environmental footprint with only 300m x 900m area of disturbance at any time
- Very low carbon emissions compared to other hard rock iron ore deposits with no:
 - Heavy machinery mining fleet
 - Open pits
 - Waste dumps
 - Haul roads
 - Grinding circuits
 - Railroad or ports
- No chemical additives in processing or tailings
- Natural processes delivers rapid rehabilitation of mined areas
- Short term confined environmental impact with rapid recovery
- No impact on fish, whales or dolphins
- No legacy issues with rehabilitation part of recovery process
- TTR VTM concentrate has 11lbs/tonne vanadium & 8.5% titanium metals
- Fe, V & Ti metals in demand for the “green economy” and renewable energy
- High grade steel, alloys, batteries, solar & wind technology, electronics, health, science, aerospace & white goods

STB Vanadium Titanium Iron Sand Resource



TTR has drilled a **1,043Mt JORC Resource in Stage 1 Mine Area**



Minimum 20 year life of mine



VTM Concentrate Grade
0.5%V₂O₅ 8.5%TiO₂ 55% - 57%Fe



Total 3.8Bt STB JORC Resource Base*



60 year resource at 5Mtpa

Vanadium Titanomagnetite Product Advantages:

- Exothermic
- Fewer Impurities than Hematite Ores
- Extends Life of Blast Furnace Hearths
- Reduced CO₂ Emissions in Steel Production
- Vanadium Titanium and Pig Iron Recovery

Metallurgical Test Work Underway

New Marketing Plan Required

Integrated Mining Vessel (IMV)



Length 335m

Breadth 60m

Depth 26.25m

Design Draught 12m

Technology has been developed and utilised by De Beers Marine for over 40 years in their mining for diamonds off west coast of Southern Africa. De Beers Marine have provided a commissioning and operating solution for the first two years of production, also providing us with an option for extension. This is a tried and tested recovery solution. See YouTube hyperlink below.

Summary of Estimated Costs

Commodity Prices June 2022

- Iron Ore (62%Fe): **US\$119.60t**
- Vanadium Pentoxide: **US\$9.70lb**
- Titanium Dioxide: **US\$3,200t**

STB Metal in Concentrate Value per Tonne

- Iron Ore (57%Fe): **US\$101.70** (15% discount)
- Vanadium (0.5%): **US\$170**
- Titanium (8.0%): **US\$256**

Manuka envisages the STB Project being a low cost producer with C1 costs approximately **US\$20 - US\$24^[1]** per tonne of concentrate.

^[1] Based up the TTR PFS (2013) updated to 2022 economics
See ASX release 1 August 2022

Summary Estimated Operating Costs (C1) of STB Project (subject to completion of BFS).
(Based on 72% operational availability after allowing for inclement weather in South Taranaki Bight.)

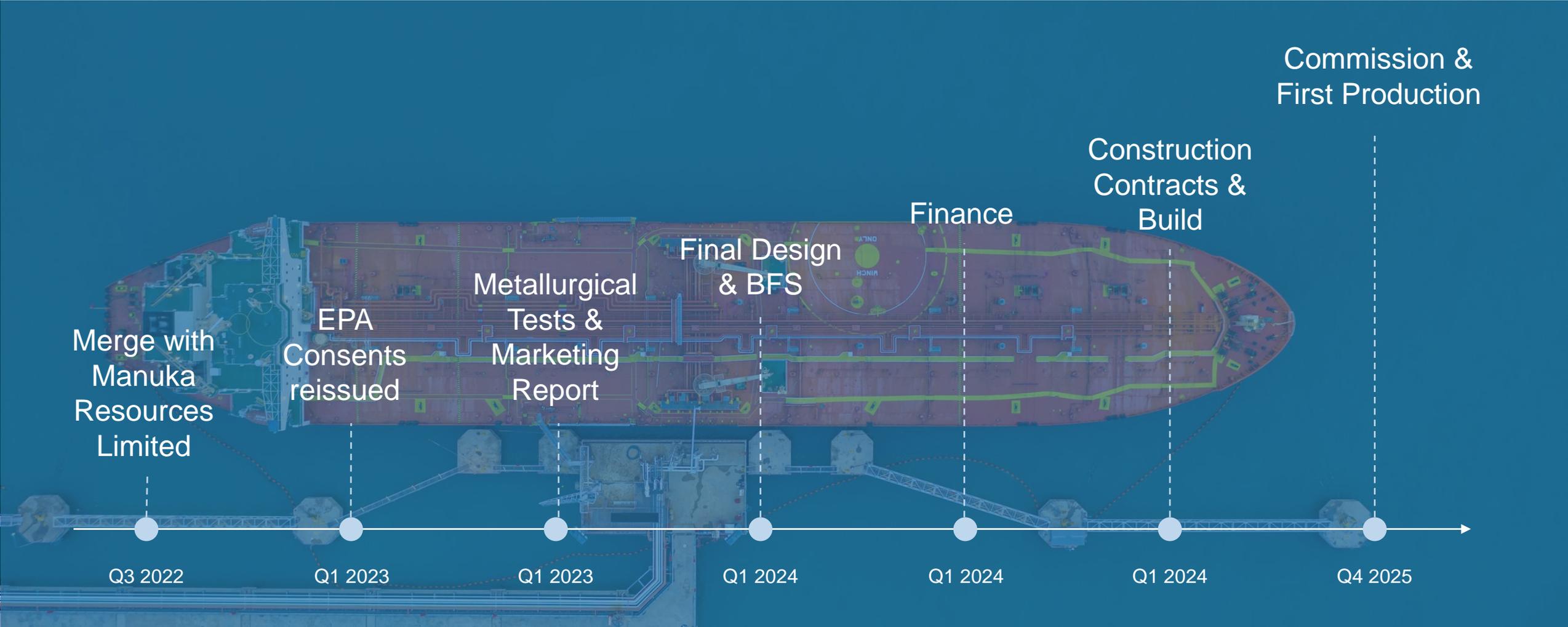
4.9Mtpa (concentrate production scenario)**	\$US	Unit cost/tonne (concentrate) \$	Percentage %
Labour	23,790,000	4.86	24%
Fuel*	32,079,661	6.55	33%
Maintenance	14,375,000	3.00	15%
FSO Operation	13,415,000	3.00	14%
Consumables	5,000,000	1.00	5%
Insurance	5,000,000	1.00	5%
Sales costs	4,900,000	1.00	5%
Total	98,559,661	\$20.41	100%

*based on IFO380 bunker fuel at 26 July 2022 of US\$495.50/t ex Singapore

** subject to validation in BFS

STB Iron Sands Project: Business Milestones & Working Assumptions regarding Timing

(based on all NZ regulatory consents/permitting being granted and availability of finance)



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Appendix 1

STB Iron Sands Project: JORC Resource Estimates

STB Mineral Resource Estimates					
	Mineral Resources			Concentrate	
	Cut-Off Grade	Mt	Fe ₂ O ₃ %	Mt	Fe %
Mining Area Stage 1	3.5% DTR*	1,043	11.28	75	56.31
Kupe Blocks North & South	3.5% DTR*	655	10.97	45	56.73
Mining Area Stage 2 & Outside 1 & 2	7.5% Fe ₂ O ₃	2,137	9.66		

- DTR is David Tube Recovery of the magnetic fraction of the sample
- DTR Estimate is based on analytical DTR & calculated DTR values
- JORC (2012) compliant



An emerging **vanadium titanium iron ore** and marine mining technology player with **large resource potential** and **competitive advantage** resulting in operation to realise **greater value** over the medium to long term

 Early mover advantage on bulk, scalable marine mining IP	 Low sovereign risk low-royalty regime	 Experienced board and management operating to the highest governance standards	 DeBeers Marine SA +30 years experience operating partner
 Technology solution (IHC) has cross commodity application in heavy mineral marine deposits	 Bulk shipping freight advantage located close to markets	 TTR iron sands lowest carbon intensity 62kgCO ₂ /t versus 120-250kgCO ₂ /t for competitors world wide	 New Zealand is well placed to develop a new long-term export industry
 Large scale resources with further potential to acquire acreage worldwide	 Low capital intensity infrastructure advantage over land based deposits	 Low site operating costs no drill and blast, trucking, rail or port costs, rehabilitation, no waste dumps, or legacy issues	 STB has low capex and opex advantages of being entirely marine-based operation

Offshore Drilling Technology

TTR Developed GPS Controlled RC Rig

Launched from a vessel, drilling at water depths to 70m

Drilling depth	Offshore drill holes	Samples collected
11m	725	>4,200 x 1m Samples

TTR Marine Drilling Technology Utilized to Report:

- Three Iron Sand Inferred and Indicated Resource Estimates (JORC Code 2012) STB; and
- One Exploration Target (JORC Code 2012) Waikato South



STB is an Active Petroleum Region

