


14/04/2025
ASX: GRR

Southdown Project Feasibility Study Results
Resource & Reserve Statement

Grange Resources Limited (ASX:GRR) (Grange) is pleased to announce the completion of feasibility study work over 2022 - 2024, including a third-party review, for the development of an open pit operation at the Southdown Magnetite Project (Southdown or the Project) with a production rate of 5 million tonnes per annum (mtpa) of magnetite concentrate. The studies have furthered the pre-Feasibility study design (see ASX announcement March 2022) and the project delivery with the following highlights:

- A 6% increase in Ore Reserve to 412Mt for the production of 134 million tonnes of concentrate.
- This wholly Probable Ore Reserve underpins a production rate of 5mtpa of high-quality magnetite concentrate at nearly 70% Fe which brings a significant attraction for the direct reduced iron (DRI) market demand over a 28-year mine life.
- Technically achievable plan including conventional open pit mining, processing by ultra fine grinding for magnetic separation and reverse flotation, slurry pipeline to Albany Port with concentrate filtration, storage and export using transhipping.
- The financial analysis supports a positive economic outcome with a nominal project free cash flow of A$10.1 billion giving an after tax NPV of A$877 million at a discount rate of 10% and IRR of 14.8% after tax.
- The payback period is estimated to be 8.3 years based on an average long-term 2024 real price forecast of AU$175/t (US$123/t) with operating cash cost of A$87.7/t concentrate and All in Cost of A$117/t concentrate.
- Capital expenditure estimation for construction has increased to A$2.34 billion reflecting the current market cost of project execution for this scale project while incorporating the owner mining equipment and facilities considered for the project expansion in the future.
- Purchase rights are in place for 86% of the Southdown production with major steel producers and traders.
- The board has committed to continued funding of the project to maintain its good standing and asset value through 2025, while it progresses funding and third-party joint venture equity options. The board believes that there are reasonable grounds to assume that future funding to progress the project will be available.

Further work will be completed in a bridging phase on improvement opportunities identified during the study. These include power, water supply, dry magnetic separation developments, wet magnetic separation developments and to seek appropriate revisions for the new aspects of the Project relative to current environmental approvals.

The Revised Proposal lodged in January 2023 to amend the existing State environmental approval MS816 has been withdrawn and will be resubmitted once the project description has been finalised in conjunction with any third-party investment partner. Grange has continued discussions with third parties interested in investing in the project and is also considering the appointment of a corporate financial advisor to assist with securing long term project finance.




Commenting on the results of FS 2024, Grange CEO Mr Weidong Wang stated:

"Southdown is a world-class magnetite deposit that is becoming increasingly relevant as steel producers seek to decarbonise their supply chain resulting in growing demand for Direct Reduction (DR) grade iron ore products. At 70% iron content with low impurities (nominally Al_2O_3+SiO_2~2.3%), Southdown's concentrate product will be highly valued to meet this demand.

"The board remains positive about the future development of Southdown and is pursuing opportunities with investors who intend to act as JV partners for jointly developing Southdown. I look forward to the delivery of the Southdown product to meet the emerging demand for DR quality iron ore, supporting the production of low carbon emission steel."




Southdown Magnetite Project Summary

1. Project Overview

The Southdown Magnetite Project is located 90km from Albany in Western Australia's Great Southern region and is an advanced project with more than 1.2 billion tonnes of high-quality Mineral Resources, including Ore Reserves of 412 million tonnes, both estimated using the guidelines of the JORC Code (2012 Edition). During 2022-2024 Grange conducted feasibility level studies (FS 2024), including further optimisation, into an alternative development option based on a reduction of the nominal concentrate production rate to 5mtpa.

The Project is owned by Grange (100%) after buying out the 30% interest of former joint venture partner SRT Australia Pty Ltd (SRTA) as announced on the 12th of December 2022.

There remains the potential to substantially extend the mine life with further study of the eastern half of the Mineral Resource once the project is up and running. Potential also exists to expand concentrate production to 10 million tonnes per year with further future capital investment.

Grange recognises and respects the Traditional Owners of this Country and their connection to the lands, waters and skies. Grange would like to acknowledge the support and assistance of the Wagyl Kaip and Southern Noongar Native Title claimants, and the Menang people in the development to date of the Southdown Project.

Grange would like to thank and acknowledge the following organisations who were engaged in Grange's development of the study:

- Hatch (FS principal consultant and process plant)
- Wood (metallurgy)
- Snowden Optiro (mining)
- Mine Planning Services (mining)
- GHD (non-process infrastructure)
- Ausenco (slurry and return water pipeline)
- BMT (marine)
- Quessentia (approvals)
- Southern Ports Authority (port & marine)
- NETC (process plant review)
- Other specialists in individual areas
- The many individuals and organisations in the broader community who continue to provide support and assistance

2. Location

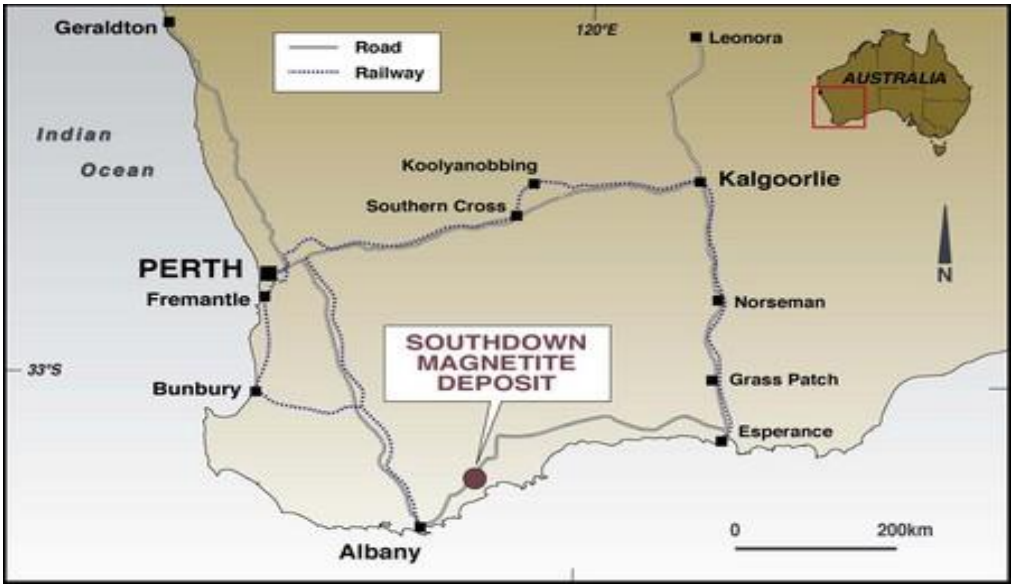

Figure 1: Southdown Magnetite Project Location

The Project is located ~90km northeast of Albany in the southwest corner of Western Australia. The Southdown deposit extends approximately 12km in length, with Mine Lease M70/1309 and Retention Licence R70/61 covering an area of more than 120 square kilometres on largely freehold farming property. The western 6km length of the deposit is the subject of this study.

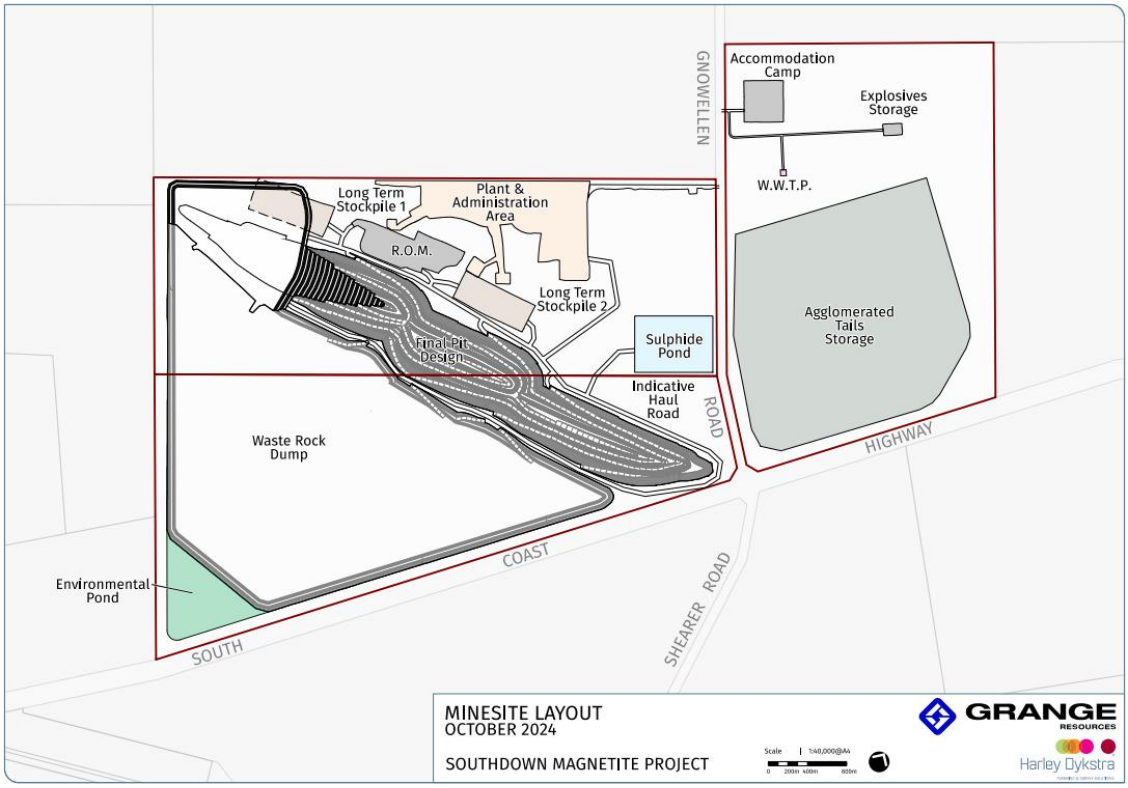

Figure 2: Proposed Mine Layout 2024




3. Mineral Resource & Ore Reserve

The Project contains a total Mineral Resource of 1,257 million tonnes of magnetite ore grading at Davis Tube Recovery (DTR) of 33.8%, listed by category in Table 1 and is inclusive of Reserves. This Mineral Resource has been defined using geological boundaries and a cut-off grade of 10 weight percent DTR. A Mineral Resource statement prepared in accordance with JORC Code 2012 has been declared for the Project. The Mineral Resource consists of gneissic rocks with alternating bands of magnetite hosted in clinopyroxene and primary quartz located within mining lease M70/1309 and Retention Licence R70/61.

The Project contains a total Ore Reserve of 412 million tonnes of magnetite ore grading at Davis Tube Recovery (DTR) of 34.7%, listed by category in Table 2. This Ore Reserve is supported by pit designs, schedules, cost modelling and economic evaluation. The metallurgical plant has been designed to achieve nearly 70% Fe in the final concentrate. This is updated from the 2012 and 2022 ASX announcements due to the extensive pilot plant test work completed in May 2022. An Ore Reserve statement prepared in accordance with JORC Code 2012 has been declared for the Project.

Davis Tube Recovery (DTR) is the fundamental unit of ore grade measurement at a magnetite mine. DTR is a measure of the "recoverable" magnetic minerals as determined by equipment which seeks to mimic the magnetic separation process occurring in the concentrator. The DTR is a physical test where the magnetics from the Davis Tube, known as the Davis Tube Concentrate (DTC) is weighed to determine the proportion of the original sample which is recovered. The DTC is then analysed to determine the chemical composition. Refer to Attachment 1 for more details on how DTR is used on this project.

A detailed statement of the Mineral Resources and Ore Reserves is included in Attachment 1. This attachment also includes further technical writeup of geology, metallurgy testwork, mine planning and metallurgy design.

Mineral Resource Category	Tonnes (Mt)	DTR (mass %)	DTC Fe (%)
Measured	423	37.8	69.5
Indicated	100	36.3	69.5
Inferred	734	31.1	69.3
Total	**1257**	**33.8**	**69.4**

Table 1: Southdown Magnetite Mineral Resource




Ore Reserve Category	Tonnes (Mt)	DTR (mass %)	DTC Fe (%)
Proved	-	-	-
Probable	**412**	**34.7**	**69.6**
Total	**412**	**34.7**	**69.6**

Table 2: Southdown Magnetite Ore Reserve Estimate

Competent Persons Statement

The information in this report that relates to Exploration Results and Mineral Resources is based on, and fairly represents, information and supporting documentation prepared by Michael Everitt, a Competent Person who is a Member of The Australasian Institute of Mining and Metallurgy, who is a full-time employee of Grange Resources and who holds shares in Grange Resources as part of the company incentive scheme. Mr Everitt has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the JORC Code (2012). Mr Everitt consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears.

The information that relates to the mining aspects of the Ore Reserves is based on, and fairly represents, mine planning studies supervised by Frank Blanchfield. Information supplied by GRL relating to infrastructure, mining costs, environmental, permitting, and social licence studies and marketing and financial analyses were reviewed by Mr Blanchfield. Mr Blanchfield is an employee of Snowden Optiro and is a Fellow of the Australasian Institute of Mining and Metallurgy. Mr Blanchfield has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the JORC Code (2012). Mr Blanchfield consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears.

The information in this announcement that relates to metallurgical aspects supporting Mineral Resources and Ore Reserves is based on, and fairly represents, information and supporting documents prepared by or reviewed by Dean David, who has consulted on metallurgical aspects of the Southdown Project (as an employee of Wood) since 2010. Mr David also has an ongoing consulting association with Grange Resources and the Savage River Operation in Tasmania dating back to 1996. Mr David designed and supervised Southdown testwork programs at bench scale and pilot scale across the period 2010 to 2023 and was a participant in Wood's design teams for Southdown's 2012 FS (wet AG Mill and Ball Mill basis) and its 2022 PFS (dry Vertical Roller Milling basis). Mr David is an employee of Wood and is a Fellow of The Australasian Institute of Mining and Metallurgy. Mr David has sufficient experience that is relevant to the style of mineralisation, type of deposit, the magnetite product under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the JORC Code (2012). Mr David consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears.

The Ore Reserves and Mineral Resources underpinning the production targets and economic outcomes set out in this report have been prepared by the above Competent Persons in accordance with the requirements of the JORC Code (2012).

The production targets and economic outcomes for the Southdown Magnetite Project set out in this report are based on wholly Probable Ore Reserves.

4. Feasibility Study Description

Mining

Mining will be undertaken by conventional bulk mining methods utilising drill and blast, load and haul with 365-tonne class excavator in backhoe configuration and 194-tonne (payload) rigid rear dump trucks coupled to a run of mine (ROM) stockpile. Ore will be trucked directly from the blasted faces to either direct tip into the primary crusher or onto the ROM stockpile to satisfy a nominal concentrate production rate of 5mtpa.

The Ore Reserve within mine lease M70/1309 of 412Mt has the capacity to provide a nominal 5 Mtpa of concentrate for up to 28 years of mine life. The 2022 PFS used a contract mining arrangement, but this was changed to a lease ownership arrangement with updated mining costs from an OEM used as a mining cost basis as developed by Minero Consulting. The Mineral resource was also adjusted as provided in this announcement and used for the 2024 Ore Reserve Estimate.

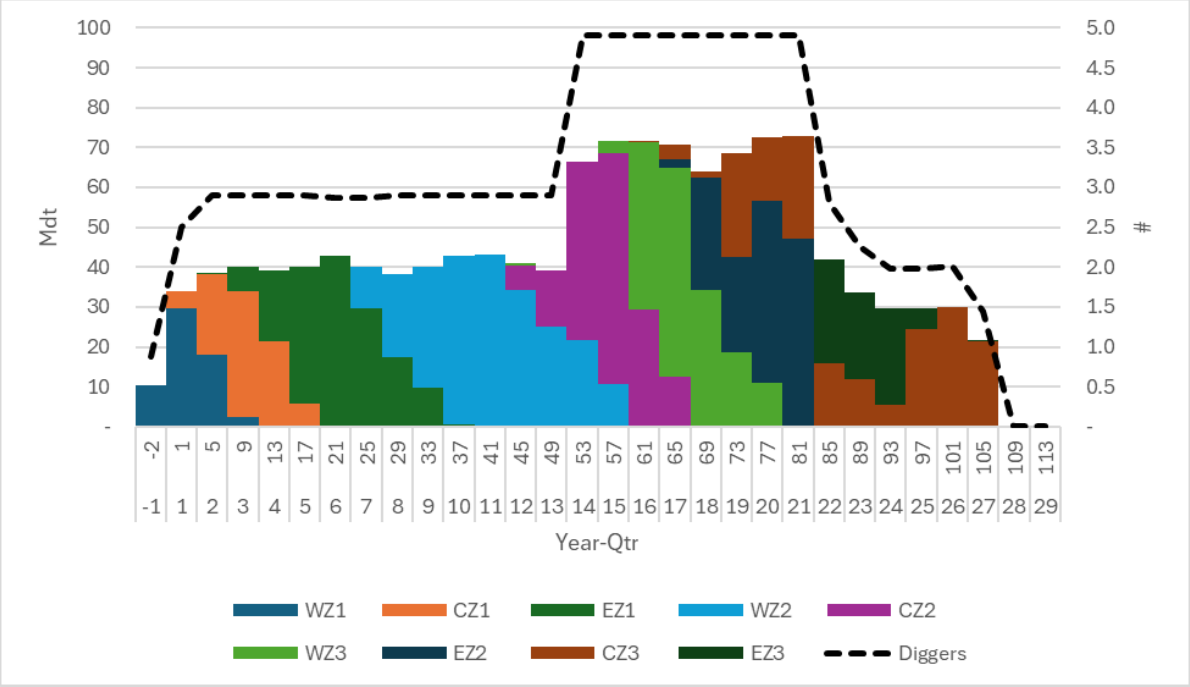

Figure 3: Mining Schedule

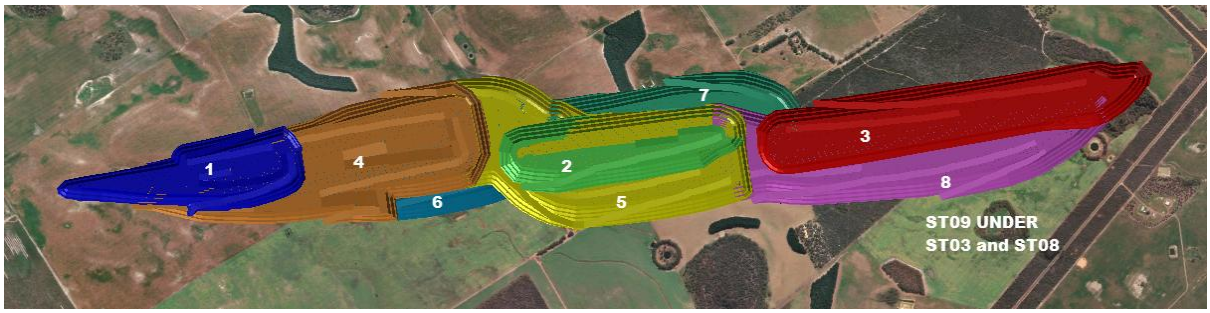

Figure 4: Staged Mine Design

Processing

The magnetite ore will be crushed in a two-stage process then ground, sized, and magnetically separated (rougher stage) using a dry processing technology to produce an interim upgraded magnetite product. This will then be mixed with water before intermediate magnetic separation, flotation to remove magnetic sulphide minerals, final grinding to 42-micron P_{80} and cleaner magnetic separation to produce the final concentrate. Non-magnetic process waste (tailings) will be produced in dry and wet components, which will be combined to form an agglomerated tailings (AT) product. AT will be suitable for dry materials handling and will be transported to AT storage facilities on site. This allows the primary AT storage facility to be established on the east of the site, avoiding the clearing of around 20 hectares of native vegetation. Sulphide minerals recovered by flotation will be stored in a dedicated, lined storage facility on site.

The magnetite concentrate will be transported as slurry by a buried pipeline approximately 110 km to a concentrate dewatering and storage facility at the Albany Port. Filtrate water will be pumped back to the minesite for reuse as process water in a second pipeline placed in the same trench with the slurry pipeline. For this study the pipeline was sized for a nominal 5mtpa production rate, with further study in the bridging phase to optimise the design to facilitate later expansion.

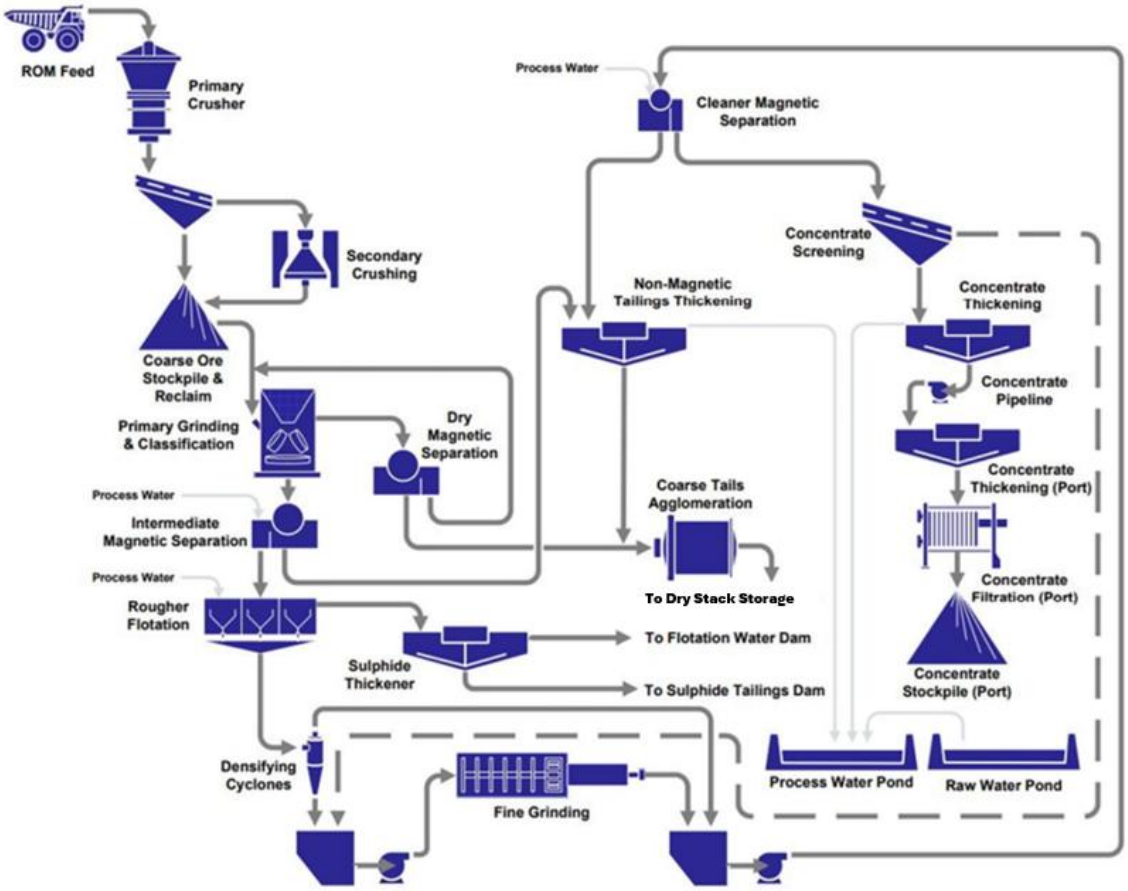

Figure 5: Proposed Concentrator Flowsheet for the 5mtpa FS 2024

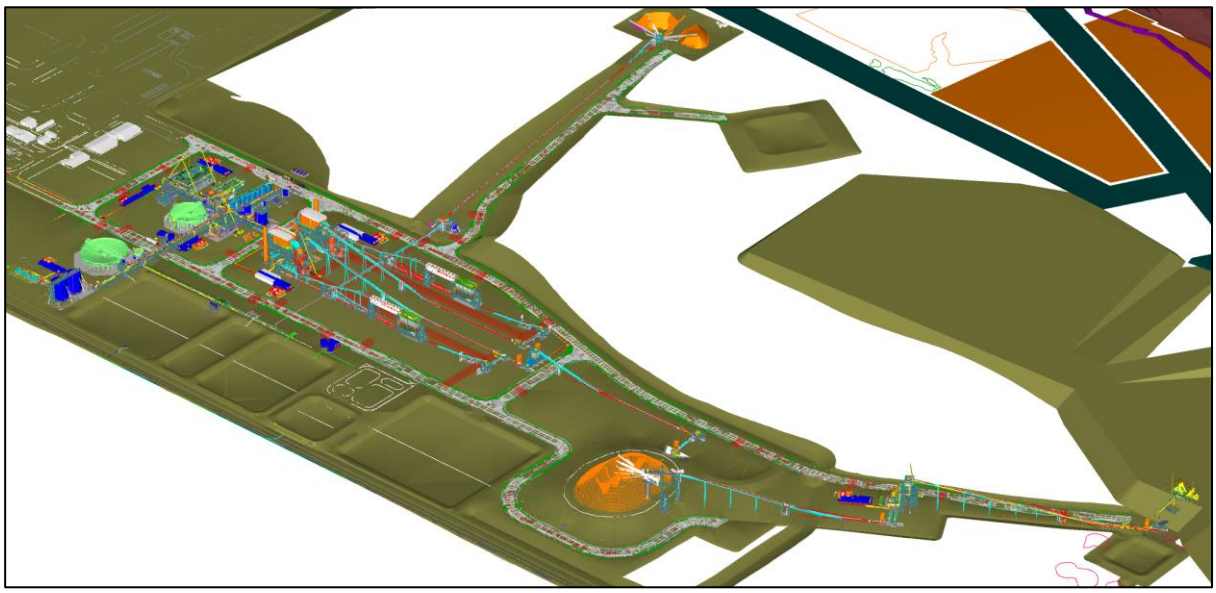

Figure 6: Processing Plant 3D Model

Port Facilities

Continuing from PFS 2022, FS 2024 utilises a transhipping methodology with reduced on-site storage capacity required at the Port of Albany. This would involve the use of existing land within the Port, subject to commercial agreements with Southern Ports Authority, significantly reducing the development cost required compared to direct ship loading at a future Berth 7 as described in FS 2012. This design would incorporate the addition of a new wharf at Albany Port's Berth 5, a filtration plant, a concentrate stockpile shed, and a ship loading facility. The magnetite concentrate will be loaded onto a Transhipment Shuttle Vessel (TSV) and transferred to the larger Cape sized vessels located at two existing anchorage points in King George Sound.

In addition to port access and commercial agreement negotiations, the bridging phase will increase stakeholder engagement and continue studies to assess the environmental, community and visual impacts, to facilitate new environmental and operational approvals.

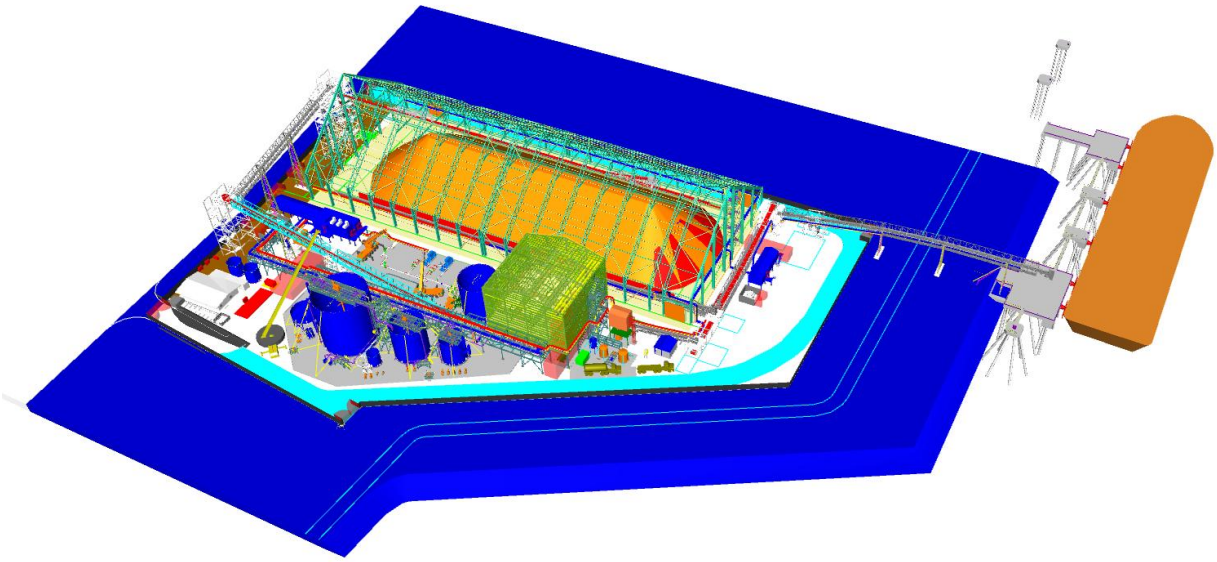

Figure 5: 3D Model of Port Facilities

Water

With the introduction of dry grinding and a reduced capacity in the concentrator, the annual make-up water demand for the 5mtpa option has been reduced from 12 gigalitres per year to 5 gigalitres per year. Therefore, the scale of the initial water infrastructure is significantly reduced. The feasibility study looked at alternatives to seawater desalination and has confirmed that water for the permanent operations phase could be supplied to the site from:

- Proposed Manypeaks and Wellstead South Borefields water could be pumped to the site and treated with a brackish water treatment plant using reverse osmosis technology to produce Process and Potable Water.
- Surface water run-off captured in the mine pit as well as ponds and drainage structures on the minesite.
- Mine pit dewatering will intercept groundwater through ex-pit dewatering bores, and




groundwater that seeps into the mine pit will be collected and pumped to dust suppression water storage dams.

- Brine produced as by product from the brackish water treatment plant can be mixed in mine pit dewatering ponds and used for in-pit dust suppression.

In addition to the potential water sources above, which informed FS 2024, the desalination plant and the related piping to site will be considered in the bridging phase to allow for potential future production increases.

Investigations into new dry magnetic separation methodologies may result in further reductions in project water demand.

Power

Access to power is required at three locations, the mine-site (including mining operations, concentrator plant, Non-Process Infrastructure (NPI) facilities, and camp), the port facilities, and the water supply infrastructure.

FS 2024 has estimated the installed load at the mine/concentrator site to be 79.3 megawatts (MW). Renewable power supplied to the mine-site by a third party has been considered to minimise greenhouse gas (GHG) emissions and fossil fuel requirements.

Establishment of a transmission line connection to Western Power's Southwest Interconnected System (SWIS) for supply security will also be considered as an option for further discussion with Western Power.

The proposed Manypeaks and Wellstead South Borefields are located near an existing Western Power Distribution Network and therefore could be supplied with power from this network with appropriate upgrades as required.

In Albany, a new 22 kV connection at the existing Western Power Albany 132/22 kV substation would service the port facilities with installed capacity of 9.7 MW.

5. Cost Estimation

Capital Cost Estimate

A capital expenditure (CAPEX) estimation was completed over 2022-2023 with updates made in 2024. The cost data has been obtained from a range of sources including direct quotation, engineering estimates, benchmarks and market data. Escalation in line with producer price indexes from the ABS has been used to ensure input estimates are based on a 2024 real basis. It is reported based on Q1 2024, Australian dollars (A$) and is derived from several currencies and exchange rates.

The total cost estimation covers the engineering, construction and commissioning of the Project (together with the required facilities and infrastructure) and contingencies.




Breakdown of Initial Capital Costs	
Description	**Total Cost (A$M)**
Mine	30
Concentrator	935
Pipeline	307
Filtration and storage (Port of Albany)	153
Facilities and services	154
Albany	70
Miscellaneous, allowances and provisional sums	243
Subtotal	**1,891**
EPCM cost	197
Owners cost	39
Contingency	212
Total Project	**2,339**

Table 3: FS 2024 Capital Cost Estimate

Operating Cost Estimate

The operating costs were developed by specialist contributors. They utilised the mine schedule, process design criteria and other design documents to support the nominal production of 5mtpa of concentrate and its subsequent logistics to the port and the material handling onto Cape size ships.

The operating cost (OPEX) estimate is presented in Australian dollars (A$) and uses prices obtained over 2022-2023 with updates made in 2024. The cost data has been obtained from a range of sources including direct quotation, engineering estimates, benchmarks and market data. Escalation in line with producer price indexes from the ABS has been used to ensure input estimates are based on a 2024 real basis. The below table summarises the average operating costs to produce 5mtpa of dry concentrate.




Unit Cost of Concentrate Production (real 2024)	
Description	**A$/t of Concentrate**
Mining costs	42.0
Concentrator	25.6
Port	1.5
Transhipment	9.0
Overheads	9.6
Total (Ex Albany)	**87.7**
Royalties	9.0
Sustaining CAPEX	1.2
Rehabilitation	1.9
Initial Capital	17.4
Total All In Cost (Ex Albany)	**117.1**

Table 4: FS 2024 Unit Cost Estimates

6. Economic Evaluation

Revenues were estimated using forecast nominal benchmark iron ore prices and exchange rates provided in commissioned marketing reports from leading experts and independent consultants. The respective reports analyse the steel consumption / production, iron ore market overview, concentrate demand, value-in-use analysis and future price forecast of the Southdown product.

A financial model has been developed with inputs generated from first principles and the findings of FS 2024.

The Project free cash flows (after tax) were subjected to a discounted cash flow analysis using a discount factor of 10% nominal with a 2.5% inflation rate. The Project after tax produces an estimated net present value (NPV) of $877 million and generates an IRR of 14.8%, for the 28-year LOM. The average real 2024 concentrate price for this product is forecast at US$123/tonne FOB and the AUD:USD exchange rate is forecast at $0.70.

Financial Metrics	FS 2024
Basis of Fe Price	Long Term Forecast
Southdown Concentrate Avg FOB Price - US$/t (real)	123
FX (AUD/USD)	0.70
Southdown Concentrate Avg FOB Price - AU$/t (real)	175
Unit rate C1 – A$/t concentrate	87.7
All in Sustaining Costs (AISC)– A$/t concentrate	99.7
All in Cost (AIC) A$/t concentrate (*inc of initial capital*)	117.1
Project free cash flow – A$ million (nominal)	10,148
Net present value – A$ million @10% (after tax)	877
Payback since Construction (FID) – years	8.3
Internal rate of return %	14.8

Table 5: Project Financial Metrics for FS 2024




A sensitivity analysis on the post-tax NPV is provided below. The project is most sensitive to the iron ore price and the exchange rate. The project is about equally sensitive to initial construction capital cost and ongoing operational cost.

Variable	-20%	-10%	0%	10%	20%
Iron ore price	(A$141M)	A$370M	A$877M	A$1,383M	A$1,889M
Exchange rate	A$2,152M	A$1,444M	A$877M	A$413M	A$23M
Construction cost	A$1,093M	A$933M	A$877M	A$611M	A$450M
Opex	A$1,283M	A$1,028M	A$877M	A$516M	A$260M

Table 6: Project NPV Sensitivity to cost variation

7. Environmental, Social and Governance

Grange is committed to reducing GHG emissions and assisting the Western Australian Government's ambition for Western Australia to achieve net zero GHG emission by 2050. The Company acknowledges that the world is moving to a low carbon future and has developed a road map to reduce emissions across our operations and the tonnes of CO2/tonne of pellet produced. For the Southdown Project, this will involve the reduction in energy used per tonne of product as a criteria in design and procurement; aiming to source electricity from local off-grid renewable energy with Energy Storage System (ESS) support; and progressive electrification of the mining fleet and other mobile equipment as technology develops. A requirement of the feasibility study was that it be based on available technology. Grange will explore a pathway to electrification and will include the review of electric mining equipment when manufacturers make that available.

There has been rapid progress made in this area and it is predicted that suitable equipment may be available when purchasing decisions are required.

With the decarbonisation of the steel industry and evolution of the "Green Steel" market, the Southdown product, at nearly 70% iron, will be in demand as a feed stock for Direct Reduction (DR) Electric Arc Furnaces (EAF). This process significantly reduces the CO_2 emmissions associated with steel making by eliminating the use of coal and natural gas when powered by renewable energy.

Developments in global markets for directing investment capital have shifted with traditional profit only focus being challenged when assessing companies' performance. Grange is committed to aligning the business, where applicable, to the sustainable development goals that provide a roadmap to sustainability and resilience. Grange has adopted an Environmental, Social and Governance (ESG) framework with 21 core metrics and disclosures as created by the World Economic Forum (WEF) and is establishing an impact measurement plan for each sustainability area which includes, but is not limited to, governance, anti-corruption practices, ethical behaviour, human rights, carbon emissions, land use, ecological sensitivity, water consumption, diversity and inclusion, pay equality and tax payments. Progress against this framework is reported annually in the Grange Annual report, available on the Grange website.




Working With The Community

Planning and preparation for the Southdown Project has spanned more than twenty years, during which Grange has continuously maintained a project office in Albany and has been working closely with key stakeholder organisations and community members. Grange will undertake increased community engagement in the months following this public release leading up to the bridging phase. Once the bridging phase commences, Grange will broaden the engagement with stakeholders and the community through the Albany Project Office, information sessions, landowner discussions, briefings and presentations and a range of focused communications.

A key commitment of Grange's ESG strategy is to work with stakeholders and the community in the planning, implementation and operation of its projects as well as delivering community benefits including employing local people to work and service the mine, supporting local and regional economic development.

The Southdown Project aims to employ local people to work and service the mine, which will create job opportunities and a diversity of roles that are currently limited in the region. This will support families based in the region and provide pathways for the next generation.

In addition, the Project supports local and regional economic development by engaging with local businesses and service providers, and includes the payment of rates, royalties and taxes. This also incorporates contracting local companies for various services and supplies in a wide-reaching supply chain.

Environmental:

- **Decarbonisation and Green Steel**: With the decarbonisation of the steel industry and the evolution of the "Green Steel" market, Grange Resources aims to position itself to obtain a potential "Green Premium" for its low CO_2, high-quality products.
- **Water Management**: The project will focus on efficient dry primary grinding methods to reduce water demand.
- **Renewable Energy** : Renewable power supplied by a third party is being considered to minimise greenhouse gas emissions and fossil fuel requirements.

Social:

- **Community Engagement**: Direct engagement with the community, including landholders, Traditional Owners representatives, businesses, government, and the wider community, will continue following this release, and increase into the bridging phase once the investment partner is on board.
- **Acknowledgement of Traditional Owners**: Grange recognises and respects the Traditional Owners of the land and acknowledges their support and assistance in the development of the Southdown Project.

Governance:

- **ESG Framework**: Grange has adopted an ESG framework with 21 core metrics and disclosures created by the World Economic Forum (WEF). This includes governance, anti-corruption practices, ethical behaviour, human rights, carbon emissions, land




use, ecological sensitivity, water consumption, diversity and inclusion, pay equality, and tax payments. Refer to the Grange website to view our policies and progress reports against the 21 core metrics.

- **Environmental Approvals**: The project will require new or amended approvals at State and Commonwealth levels to address changes in the project description and to align with current environmental standards once the new investment partner is on board. Grange's expectation is that these approvals can be secured in the future following surveys, studies, impact assessments and community engagement in accordance with regulatory guidance and policy.

8. Environmental Approvals

All material Commonwealth and State primary approvals relating to the 10mtpa FS 2012 have been secured and will continue to be maintained in good standing, including the Cape Riche desalinated water supply option, and the Berth 7 land reclamation and channel dredging option at the Port of Albany.

The feasibility studies have been designed within the constraints of the current approvals as far as is possible, but the final project will require new or amended approvals at State and Commonwealth levels. The key changes relate to reduced footprint of the mine site, minor changes to the pipeline footprint determined from the recent studies, the inclusion of borefields as a potential water supply, approval for project facilities to be constructed and operated at Albany Port Berth 5, and transhipping operations in King George Sound. These changes were costed to feasibility study level of accuracy and included in the Project base case financial model.

To address these new aspects, a Revised Proposal for MS816 was lodged in February 2023, and a referral lodged in April 2023 by Southern Ports Authority for the transhipping operation. As the studies progressed it became apparent that further optimisation was possible which will result in further amendments to the project description. Grange has withdrawn the Revised Proposal and SPA has withdrawn the related transhipping referral as of the 31st March 2025. Once the range of development options have been assessed in conjunction with the new investment partner, and the project definition finalised, updated referrals will be resubmitted for relevant changes across the project.

As is common for new mining projects, community concerns have been raised with respect to some aspects of the Project. It is important that community concerns are also explored and addressed within the revised referrals.

Direct engagement with the community has been inactive while Grange worked through the recent studies. Engagement will continue with all stakeholders including landholders, Traditional Owners representatives, businesses, government and the wider community following this release, and will increase once the project moves into the bridging study phase and we seek to finalise the project description. Grange's expectation is that these approvals can be secured in the future following surveys, studies, impact assessments and community engagement in accordance with regulatory guidance and policy.




9. Project Opportunity

The Project provides an investment opportunity to develop a high grade (~70% Fe) magnetite concentrate operation. This project will provide high quality raw material for the production of quality Blast Furnace, Direct Reduction pellets, and sinter feed in a market which continues to demand high quality products which attract a significant premium in the market.

The proximity of the Project to established infrastructure in the Albany region, the size of its resource and relative ease of ore extraction combined with Australia's stable political and regulatory environment is a major positive for the Project. It offers the potential for steel groups to enter into long-term off-take agreements with a view to ensuring a secure continuum of iron ore concentrate supply.

10. Further Project Development

Once the appropriate partners have joined the Project, a bridging study phase will be undertaken, and a final project description and scope will be produced. This will allow finalisation of current environmental approvals.

The bridging study will focus on selection of grinding technology, separation technology, tails management, pipeline constructability, preferred water supply sources, formalise power supply agreements, and progress the preferred marine logistics solution. These will require further stakeholder engagement to provide inputs to the design and finalise the project description ready to restart the approvals process at the earliest opportunity.

Funding

The board has committed continued support to fund the project and maintain its good standing and the asset value through 2025, while it progresses funding and third-party joint venture equity options. The board believes that there are reasonable grounds to assume that future funding to progress the project will be available. This is based on:

- Long term supply demand and price analysis which forecast increasing demand for high grade iron ore product suitable for use in direct reduction assisting with the decarbonisation of the steel industry
- Shagang Group has a right to purchase up to 56% of production at benchmark prices with consideration of product quality and value in use at the point of sale. Sojitz Corporation has a retained right that allows the purchase of up to 30% of production at benchmark prices with consideration of product quality and value in use at the point of sale. Both parties have expressed a preliminary interest in purchasing product and have maintained their rights.
- Previous and continuing discussions with a range of third parties interested in the project and potential investment demonstrate the project's value and ability to attract investment.
- Grange has held the project since 2003 and over the past 21 years has invested significantly in developing the project and its Resource and Reserve base. Grange




continues to see the high value of the project and continues to invest funds in maintaining and progressing the project.

FS 2024 is based on the material assumptions outlined throughout this announcement. While Grange considers all of the material assumptions to be based on reasonable grounds, there is no certainty that they will prove to be correct or that the outcomes indicated by FS 2024 will be achieved.

To achieve the outcomes indicated, funding will be required to support initial capital and pre-production operating costs. Investors should note that there is no certainty that Grange will be able to raise that amount of funding when needed. As Grange progresses funding options, it is possible that the terms of such funding will be dilutive to or otherwise affect the value of Grange's existing shares. As Grange continues discussions with a range of third parties, it is also possible that any joint venture of the Project could materially reduce Grange's ownership interest in the Project.

Investors should consider these inherent uncertainties before making any investment decisions.

About Grange Resources

Grange Resources Limited (Grange or the Company), ASX Code: GRR, is Australia's most experienced magnetite producer with over 56 years of mining and production from its Savage River mine and a mine life potentially beyond 2040. Grange produces a high-quality iron ore pellet with low levels of impurities that support reduced environmental impacts for end users.

Grange's operations consist principally of owning and operating the Savage River integrated iron ore mining and pellet production business located in the north-west region of Tasmania. The Savage River magnetite iron ore mine is a long-life mining asset. At Port Latta, on the north-west coast of Tasmania, Grange owns a downstream pellet plant and port facility producing more than two and a half million tonnes of premium quality iron ore pellets annually.

Grange has a combination of spot and contracted sales arrangements in place to deliver its pellets to customers throughout the Asia Pacific region. In addition, Grange is the owner of this magnetite development project at Southdown, near Albany in Western Australia, the subject of this study.
This announcement has been approved for release by the Board.

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GRANGE RESOURCES

Attachment 1: Southdown Mineral Resource and Ore Reserve Statement

Grange Resources Limited (**ASX: GRR**) (**"Grange"** or the **"Company")** is pleased to advise that the Mineral Resources and Ore Reserves Estimate for the Southdown Project have been updated. The Mineral Resources and Ore Reserves were previously published in February 2014.

Mineral Resource Update

Minor updates to the classification of partially oxidised ore and waste rock density have been made, with no change to the total Mineral Resources as shown in Table 1.

Table 1 - Southdown Mineral Resource Estimate

as of 31 December 2024

				Davis Tube Recovered Concentrate Grades											
Rock Type	Class	Mass (Mdt)	DTR Mass %	Fe %	Al_2O_3 %	SiO_2 %	P %	S %	LOI %	CaO %	K_2O %	MgO %	Mn %	Na_2O %	TiO_2 %	V %
Fresh	Measured	423	37.8	69.5	1.3	1.3	0.003	0.5	-2.9	0.2	0.01	0.2	0.04	0.04	0.4	0.03
	Indicated	87	38.6	69.7	1.2	1.3	0.003	0.5	-3.0	0.2	0.01	0.2	0.04	0.03	0.4	0.02
	Inferred	700	31.4	69.3	1.3	1.5	0.003	0.7	-2.8	0.2	0.01	0.2	0.04	0.03	0.4	0.03
	Sub Total	**1,210**	**34.1**	**69.4**	**1.3**	**1.4**	**0.003**	**0.6**	**-2.9**	**0.2**	**0.01**	**0.2**	**0.04**	**0.04**	**0.4**	**0.03**
Partially Oxidised	Indicated	13	21.2	68.5	1.1	1.2	0.01	0.0	-1.5	0.1	0.01	0.1	0.09	0.10	0.5	0.07
	Inferred	34	27.0	69.3	1.2	1.2	0.005	0.1	-2.8	0.1	0.01	0.1	0.05	0.03	0.5	0.02
	Sub Total	**48**	**25.4**	**69.1**	**1.2**	**1.2**	**0.007**	**0.1**	**-2.4**	**0.1**	**0.01**	**0.1**	**0.06**	**0.05**	**0.5**	**0.03**
Grand Total		**1,257**	**33.8**	**69.4**	**1.3**	**1.4**	**0.003**	**0.6**	**-2.8**	**0.2**	**0.01**	**0.2**	**0.04**	**0.04**	**0.4**	**0.03**

Notes:

- *Above a cut-off of 10% DTR*
- *All grades are of the magnetic concentrate recovered during the Davis Tube Recovery test*
- *The sulphur content in Davis Tube Concentrate is due to the presence of pyrrhotite, magnetic iron sulphide*
- *Sulphur will be reduced to an acceptable level using flotation*
- *Concentrate yield is not provided for the Resource but has been calculated elsewhere from the Ore Reserve DTR based on mining and metallurgical factors*
- *Due to rounding, the totals may not add up precisely.*

GEOLOGY & TENURE

The Southdown Project lies within the Albany-Fraser Orogen, a high-grade metamorphic belt formed during the Mesoproterozoic because of the convergence of the Western Australian and Mawson Cratons. The host rocks are highly deformed granulite facies orthogneiss of the Dalyup Gneiss from the Biranup Zone of the Kepa Kurl Booya Province.

The Southdown Magnetite Deposit comprises an east-west striking zone of quartz-magnetite gneiss and granulite, hosted by a quartz-biotite dominant metasedimentary gneiss and migmatite assemblage. Aeromagnetic data and drilling confirm that the magnetite mineralisation has a strike length of approximately 12 km and dips at 60 to 65 degrees to the south. A low intensity magnetic anomaly extends a further 7 km to the east for a total length




of 19km.

The deposit occupies the core of a gently east plunging, overturned tight isoclinal syncline with a steeply south dipping axial surface. The deposit is offset by moderately northeast dipping dextral reverse faults and subsidiary steeply southeast dipping sinistral faults. The magnetite mineralisation is poorly exposed but forms a low east west trending ridge which is more prominent in the western half of the deposit but largely buried beneath 20-80m of Pallinup FM sands/silts. The magnetite mineralisation outcrops in only a few locations within the western portion of the deposit.

The western portion of the deposit is located entirely within mine lease M70/1309, with the eastern portion located within retention licence R70/61. A group of other miscellaneous licences and a general purpose lease comprise the total mining tenement holding which surrounds the deposit and covers all proposed infrastructure areas associated with a potential mining operation.

DRILLING, SAMPLING & ANALYSIS

The Southdown deposit has been extensively drilled, with a comprehensive database of 401 diamond drill holes which inform the resource model, for 102km of drilling. Drilling was conducted on approximately 100m spaced sections orientated perpendicular to the overall orebody strike. On-section spacing (down-dip) varies but is commonly 50-100m. The mineralisation is sub-vertical, and the holes are typically inclined at -60°. Drill core recoveries are excellent, generally >98%.

All drill collars have been surveyed using real time kinematic GPS. Down hole surveys in most holes have been conducted using north seeking gyro instruments.

Diamond core was a combination of HQ and NQ sizes, with some PQ and 6-inch core for metallurgical test work. Geotechnical core drill holes have been drilled in different directions to characterise fault zones and identify structures which may impact the stability of the pit walls. Sample intervals were based on geological contacts and generally between 1 and 3m in length. All core samples were half core, generated by diamond sawing. Density determinations for all mineralised samples were undertaken on site using the water immersion method. Samples were sent to a NATA accredited laboratory to be dried, crushed, split and pulverised to nominally 98% passing 75 µm for Davis Tube Recovery (DTR) determination.

Davis Tube Recovery is the fundamental unit of ore grade measurement at a magnetite mine. DTR is a measure of the “recoverable” magnetite as determined by equipment which seeks to mimic the process occurring in the concentrator. DTR can be used to predict the concentrate




contained within the ore, which is far more relevant than an analysis for total iron. The DTR is a physical test, dependent on the actual liberation of the magnetite from its gangue elements. This liberation is directly related to the grind distribution and just as no two orebodies grind in the same way, no two orebodies can assume the same pulverizing technique in the DTR. The recoverable magnetite from the Davis Tube is called Davis Tube Concentrate (DTC) and is weighed to determine the proportion of the original sample which is recovered. The DTC is then analysed by X-Ray Fluorescence (XRF) to assess the Total Fe, SiO2, Al2O3, S, TiO2, Na2O, K2O, CaO, MgO, Mn, P and V. It should be noted that the Southdown deposit includes minor magnetic pyrrhotite which will also be captured by the Davis Tube test. A flotation circuit is included in the Southdown flowsheet to remove pyrrhotite from the final product resulting in a very low sulphur grade of 0.06% in the final product.

During the Southdown definitive Feasibility study (2011-12) a significant bias was identified in XRF analyses from samples analysed during 2005-2006. The major impact was significantly higher SiO_2 values from the DTC, with lesser impacts on other elements. It is believed that shortened wash times in the DTR method at that time caused this bias. An extensive program of re-analysing 10% of samples from the period defined the bias, enabling statistical algorithms developed by SGS Mineral Services to be applied to that data to correct the bias. This correction has been thoroughly reviewed internally and by external consultants including Golder (who developed the initial resource models) and Optiro (who undertook the peer review of the resource and reserve models for the 2012 definitive Feasibility study).

GEOLOGICAL INTERPRETATION AND RESOURCE ESTIMATION

The Southdown mineralisation is subdivided into 4 zones by faults (Figure 1) which laterally offset the stratigraphy by up to 100m, which would otherwise be continuous for the full strike extent of 11km of the model. Being hosted in a synformal structure, the depth extent is reasonably well defined by the fold hinge. The mineralisation has a total width of up to 100m, and ranges in depth below ground level from 50 to >550m at the eastern end.

The geological wireframes were developed using interpretations on 100m spaced vertical sections, perpendicular to the strike. The work was all done in Geovia Surpac using a cut-off grade of 10%DTR to guide wireframe boundaries. Sections were cut showing drill hole traces with lithology and DTR information, as well as traces of modelled faults, overlying sediments and oxidation surfaces. Interpretations were completed for each of the main rock types present within the mineralized horizons. Sectional interpretations were wireframed in 3D, taking particular care around the offsetting faults.

Drill hole sample data was flagged as ore in the database within the domain wireframes interpreted for each zone and rock type. Sample data was generally of 3 metre downhole

lengths however in the minor rock type domains there are many narrower intervals.

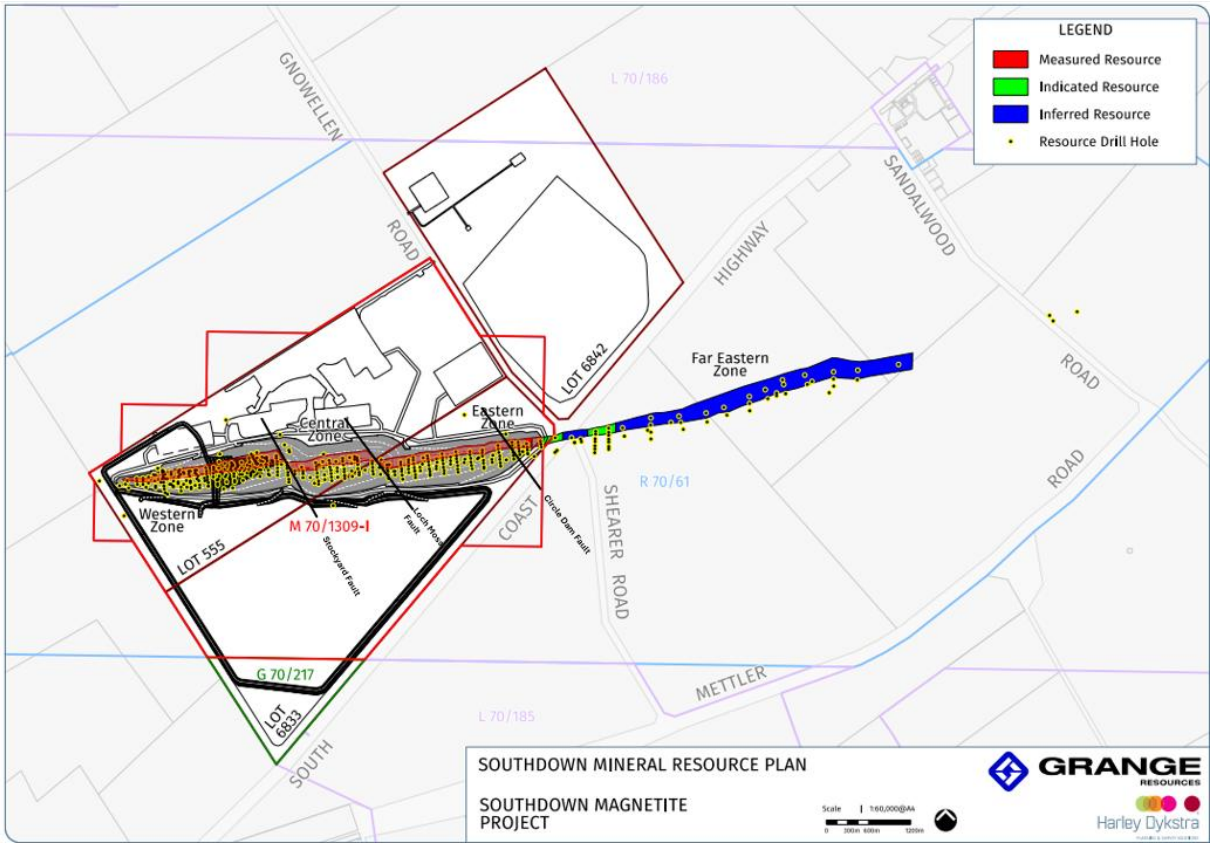


Figure 1: Location Diagram

To ensure that all sample data was incorporated in the estimation, all samples were included and weighted by length. Elemental compositions of the DTR concentrate were also weighted by the corresponding DTR value for that sample. No top cuts have been applied to the current model due to the limited influence of outliers.

Accumulated attributes (values after weightings applied) were subjected to variographic analysis undertaken by BMGS Perth to develop modelling parameters. The block model was constructed using a 20mE by 20mN by 12mRL parent block size with sub-celling to 10mE by 10mN by 6mRL. The estimation was undertaken using Ordinary Kriging for all attributes. All tonnages were estimated on a dry basis. No mining factors have been applied to the resource model. Table 1 depicts the Mineral Resource Estimate as of December 2024, reported above a cut-off of 10% DTR.

Mineral Resources have been classified based on confidence in geological and grade continuity using the drilling density, geological model, modelled grade continuity and conditional bias. Measured resources are supported by a drill spacing of 100m spaced sections with 50m centres down dip of the mineralisation. Indicated resources are supported by a drill spacing of 200m spaced sections with 50m centres down dip of the mineralisation. Inferred

resources are supported by a drill spacing of 400m spaced sections with 100m centres down dip of the mineralisation. Mineralised Zones have generally been extrapolated beyond the extent of drilling by half the distance between sections and half the distance between centres for the relevant resource classification. For example, an Indicated Resource will be extrapolated 100m along strike and 25m down dip from the closest drill intercept. This has been modified in the vicinity of the interpreted keel of the synclinal structure based on detailed structural geology and geotechnical logging. Indicated and Inferred Resources have been extrapolated 50-100m to the base of the interpreted synclinal structure owing to the high reliability of the interpretation as tested in several locations along the strike. In the Far East Zone, the extrapolation of 150-200m to the interpreted base of the syncline for Inferred Resources is supported by detailed structural data and interpretation on drilled sections, as well as a 3D inversion model of aeromagnetic data produced by Southern Geoscience Consultants in 2012. Classification surfaces were constructed for the entire deposit utilising the factors above. The classification was written to the block model based on relative position with respect to the surfaces. Approximately 35% of the Inferred Resources have been extrapolated beyond the limits of current drilling to fill the interpreted synclinal structure. Figure 2 illustrates the distribution of the resource categories over the full 11km extent of the model.

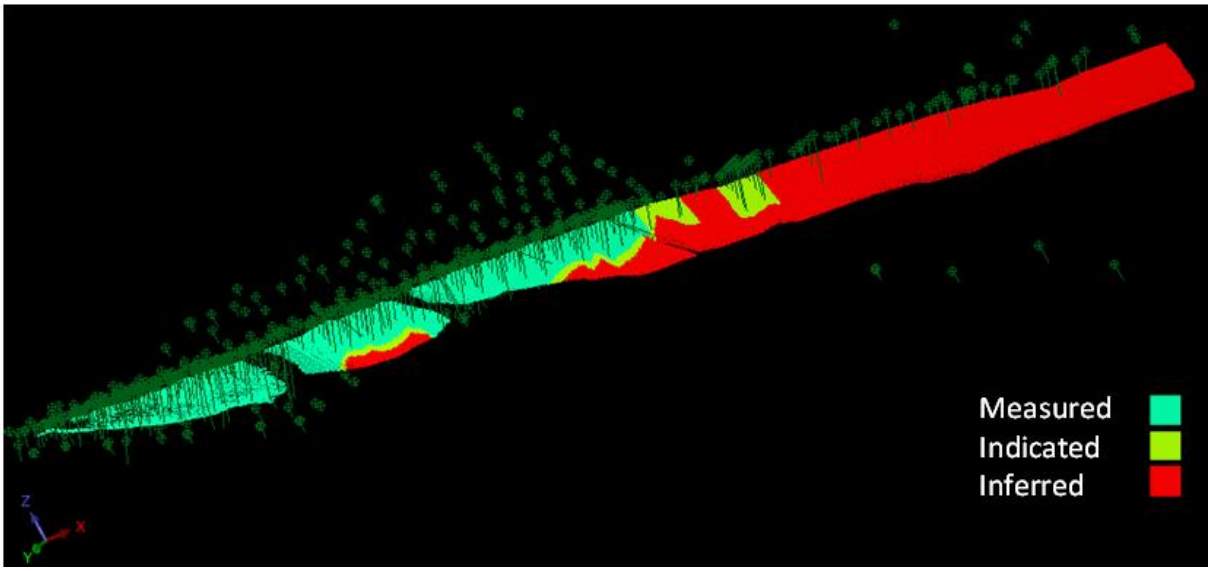


Figure 2: Orthographic Representation of Resource Classifications and Drilling

The Resource model estimates have been validated against previous model estimates using swath plots and visual inspection of the model around new drill hole data in section. A range of lower cut-offs was used in the Grade –Tonnage curve as shown below in Figure 3.

The Tonnes-Grade graph below shows an inflexion point at around 10% DTR and this has been selected as the cut-off grade. This has been supported by economic analysis undertaken during the feasibility study.

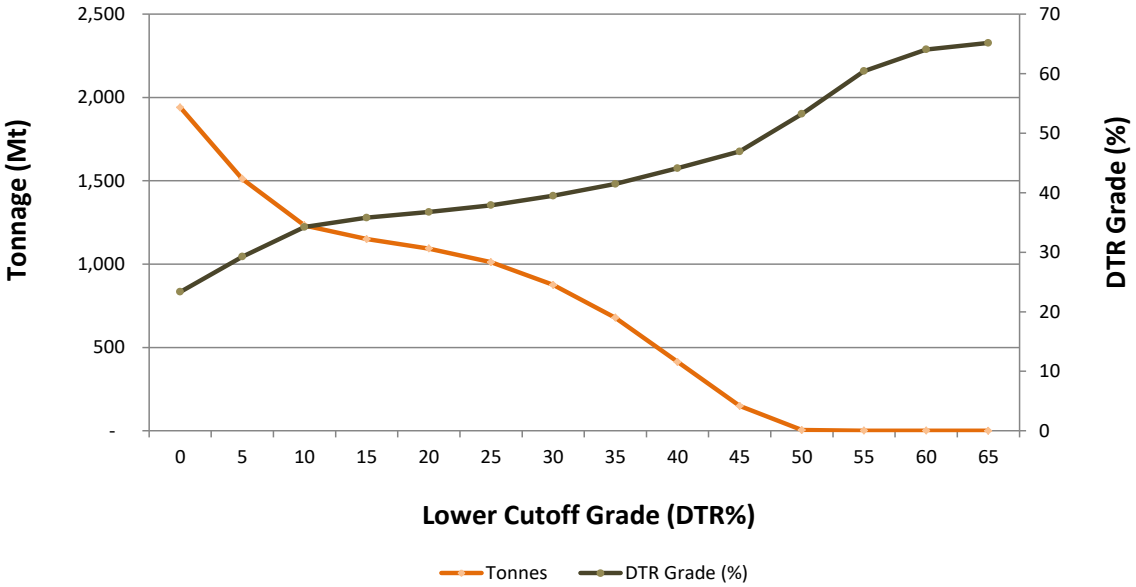


Figure 3: Grade – Tonnage Curve for all resource categories by DTR mass %

MINING, METALLURGICAL AND OTHER MODIFYING FACTORS

The mineralisation has been shown to be amenable to large scale open cut mining methods as discussed further in the discussion below.

The magnetite mineralisation has been tested extensively by Davis Tube Recovery methods. This method was designed to mimic the metallurgical performance of the mineralisation when processed through a magnetic separation concentrator grinding to a similar ultimate size. DTR mass percent yield values provide an excellent estimate of the mass percent recovery of magnetics that will be achieved by the concentrator. The assay of the DTR concentrate provides the grade of magnetics concentrate that the concentrator would recover, in the absence of other unit processes, such as flotation. The veracity of the DTR results has been supported by several rounds of pilot plant testwork on various samples and potential flowsheets as described below.

Pyrrhotite is recovered in the DTR process but is removed by flotation in the proposed flowsheet. The effect of pyrrhotite removal is to lower sulphur levels from 0.5% to an acceptable level of 0.06% S in the final concentrate. This is typically achieved with the loss of 1% of the DTR yield. However, sulphur removal testing is not performed at the geological sample level (as DTR has been) and is not incorporated in the calculation of the Reserve. Sulphur removal has been demonstrated in metallurgical testwork and can be applied mathematically to the reserve DTR concentrate if necessary and is incorporated in the grade of final magnetite concentrate for sale which is listed separately from the Reserve.

The mineralisation is located predominantly on freehold land which is mostly cleared for agricultural purposes. Environmental approvals have been secured with further approvals required for modified aspects as described above in section 8 of the public announcement.

The resource not included within the subsequent reserve described below is considered to have reasonable prospects of eventual economic extraction. The resources predominantly




consist of an eastern extension across the South Coast Highway. These resources would require additional evaluation and permitting but have previously been assessed with open pit optimisation as economically recoverable based on historic iron ore pricing. The resources are predominantly inferred and will require additional investment in geological investigation to increase confidence.




Ore Reserve estimate

A Probable Ore Reserve of 412 Mt comprising 143.1 Mt of Davis Tube equivalent concentrate at a grade of 69.6% Fe (**Error! Reference source not found.**) was estimated using the guidelines of the JORC Code (2012 Edition).

Table 2 - Southdown Ore Reserve Estimate

as of 31 December 2024

					Davis Tube Recovered Concentrate Grades												
Rock Type	Class	Insitu Mass (Mdt)	DTR %	DTR Mass Mt	Fe %	Al_2O_3 %	SiO_2 %	P %	S %	LOI %	CaO %	K_2O %	MgO %	Mn %	Na_2O %	TiO_2 %	V %
Fresh	Probable	399	35.2	140	69.6	1.3	1.2	0.002	0.5	-2.9	0.2	0.01	0.2	0.04	0.04	0.4	0.02
Partially Oxidised	Probable	13	19.9	3	68.7	1.1	1.1	0.009	0.0	-1.5	0.1	0.02	0.1	0.08	0.09	0.4	0.06
Total		**412**	**34.7**	**143**	**69.6**	**1.3**	**1.2**	**0.002**	**0.5**	**-2.9**	**0.2**	**0.01**	**0.2**	**0.04**	**0.04**	**0.4**	**0.02**

Notes:

- *Insitu mass is inclusive of DTR mass. All tonnes are reported dry.*
- *Cut-off is 10% DTR (diluted).*
- *DTR yield and grade determination method is same as that developed for Mineral Resource estimates.*
- *Grade% are Davis Tube Concentrate grades and there is no allowance for removal of sulphur (as pyrrhotite) from the DTC.*
- *Due to rounding, the totals may not add up precisely.*
- *LOI grade is reported undiluted due to absent assay values for LOI in the diluting material*

BASIS FOR MINE PLANNING

Ore Reserves for the Southdown Project magnetite deposit in Western Australia were estimated using the guidelines of the JORC Code (2012 Edition). The deposit is owned by Grange Resources Limited (Grange).

Mineral Resources for the Southdown deposit were updated by Grange with geological modelling and geostatistical support from Cadre Mining and Geology Limited in May 2024. Conventional open pit mining methods with selective ore mining methods will be implemented to exploit the deposit.

IDENTIFIED MINE PRODUCTION AND PROCESS PATH

Ore processing will produce a concentrate on site. The process plant consists of the following key areas:

- Ore preparation (crusher circuit)
- Vertical roller mill (VRM) grinding circuit
- Dry rougher magnetic separation
- Wet intermediate magnetic separation
- Sulphide flotation, sulphide tailings thickening and disposal
- Fine grinding IsaMill circuit




- Wet cleaner magnetic separation
- Intermediate and cleaner non-magnetics tailings thickening.
- Combined wet and dry non-magnetic tailings disposal
- Concentrate tramp top-size screening, thickening and temporary site storage
- Stored concentrate reclaim and pumping to Albany Port
- Concentrate slurry receiving, filtration and storage for barge loading at Albany Port
- Reagent storage and mixing at site and at port

PROCESS TESTWORK

Extensive testing of representative samples of the Southdown deposit underpins the process design, product yield, product quality and the revenue generation predicted in the Feasibility study (FS).

A bulk sample for the pilot metallurgical testwork was collected from seven 150 mm diameter diamond drillholes and nine PQ (83 mm diameter) diamond drillholes distributed across the Western and Central zones of the Southdown orebody. Based on mine planning in 2010–2011, the bulk sample represented ores to be mined in the first five years of the project. The project scope at the time was to generate 10 million tonnes per year of product. With the change of production rate to 5 million tonnes per year, the samples represent approximately the first 10 years. The bulk sample proved to be resistant to degradation and was used in conventional milling and VRM pilot plants up until 2022.

A total of 66 variability samples were collected from spatially diverse locations in the Western, Central and Eastern zones of Southdown that make up the Reserve areas of the deposit. The initial mining area (the Western Zone) contributed 34 samples, the Central Zone 20 samples and the Eastern Zone 12 samples. All samples were tested for comminution properties and analysed by Davis Tube recovery (DTR) to determine yield and DT concentrate grade.

Extensive testing of magnetic separation stages, further grinding stages and pyrrhotite flotation was performed on variability samples, composites of variability samples and the bulk products generated by pilot plant comminution testing.

Ore classed as POX (Partially Oxidised) was previously excluded from Ore Reserve calculations but has been included in the 2024 Ore Reserve estimate. No targeted metallurgical testwork has been performed on POX samples but all have been tested for DTR in the geological modelling work. The DTR measurements for oxidised samples such as POX are equally valid as predictors of recovered mass and grade as DTR measurements on fresh (unoxidised) samples.

The pilot testwork generated final concentrates after magnetic and flotation separation as described in Table 3. As the pilot testwork treated year 0-10 ore the results cannot be directly related to the Reserve grades, but they are similar. The major differences from the Reserve grade is the improvement in iron grade, reduced sulphur grade due to application of flotation




and lowering of silica content. The iron and SiO_2 improvements could result from only testing early ore but could also be attributable to grind size difference between DTR tests and the pilot plant. However, as VRM grinding was used in the pilot trial, improved liberation of magnetite from silicates is also a likely contributor to the differences.

Fe %	Al_2O_3 %	SiO_2 %	P %	S %	LOI %	CaO %	K_2O %	MgO %	Mn %	Na_2O %	TiO_2 %	V %
70	1.4	0.9	0.002	0.06	-3.1	0.06	0.01	0.12	0.03	0.003	0.4	0.018

Table 3 - Assay results of Final Concentrate from Metallurgical pilot plant testing

MINING MODIFYING FACTORS

The technical Modifying Factors were applied using the December 2024 Mineral Resource as a basis that was converted to a diluted mining model. Other non-technical modifying factors are provided on page 3 of this announcement in the Southdown Magnetite Project Summary (sections 4,5,6,7,8) and further summarised in the JORC Table 1 section 4 reporting.

PIT OPTIMISATION PARAMETERS

Only Measured and Indicated Resources were included except for Inferred or Unclassified resources included as dilution. The initial surface for the optimisation was the original topography which was coded into the resource model. The optimisation was limited to within the mining lease, the 100 m exclusion from the South Coast Highway.

Geotechnical Constraints

Overall slopes were calculated by Snowden Optiro based on the guidance provided by Mining One and the previous pit design. The table below shows the overall slopes used for the pit optimisation.

Material type	West Zone (°)	Central Zone (°)	East Zone (°)
Pallinup and POX	26	26	26
Fresh – north wall	50	50	53
Fresh – south wall	51	49	53
Fresh – south-east wall	NA	NA	49
Fault zone – north wall	50	50	50
Fault zone – south wall	45	45	45

Table 4 – Geotechnical Parameters for Optimisation




Dilution and Mining Recovery

Blocks were mixed by reblocking and coded as dilution in the mining model where they were included in the ore inventory and also coded as ore loss were excluded as ore feed in the pit optimisation. No additional dilution or mining recovery were applied to the mining model that used ore loss of 2% and dilution 8%.

Process Recovery

All ore would incur the same plant efficiency of 94.1%. This assumed that partially oxidised ore would be limited to 10% in the ore feed.

***Optimisation Mining, Process and Other Operating Costs* Inputs**

The table below summarises the mining costs.

Item	Category	Units	Value
Load and haul	Pallinup/POX - Waste	$/bcm	-0.04583 x Bench + 10.43888
	Pallinup/POX - Ore	$/bcm	-0.05707 x Bench + 12.53565
	Fresh - Waste	$/bcm	-0.02676 x Bench + 8.67073
	Fresh - Ore	$/bcm	-0.02404 x Bench + 9.51927
	Waste with dry density ≥3 t/bcm	$/bcm	Additional 2.02
Secondary equipment	All	$/bcm	0.34
Drill and blast	Pallinup (only 5% blasted)	$/bcm	0.99
	Oxide	$/bcm	1.59
	Fresh	$/bcm	3.11

Table 5 –Mining cost inputs for pit optimisation

Note: Optimisation cost inputs provided by Minero available at the time of pit optimisation may be superseded and different to final project financial metrics in this announcement. Load and haul costs are dependent on bench (metres above or below top of ore or waste).

Optimisation Ore Cost inputs

Ore costs incorporating administration and selling costs are presented below with mining cost developed by Minero Consulting whilst the process and other costs were developed with Hatch through the 2023 feasibility work with updates completed by Grange.




Item	Units	Value	Source
Crusher feed	$/t ore	0.22	Minero Consulting
Mining staff and on-costs	$/t ore	1.28	Minero Consulting
Agglomerated tails load, haul & compaction	$/t ore	0.55	Minero Consulting
Agglomerated tails conveying	$/t ore	0.08	Grange
Processing cost	$/t ore	7.93	Grange
Annual supporting infrastructure	$M/a	5.19	Grange
Plant wide costs	$M/a	4.99	Grange
Annual lab cost	$M/a	7.03	Grange
Annual plant labour	$M/a	17.26	Grange
Total	**$/t ore**	**13.47**	

Table 6 – Ore processing cost inputs for pit optimisation

Note: Optimisation cost inputs available at the time of pit optimisation may be superseded and different to final project financial metrics in this announcement

Port costs of $9.93 (applied as a selling cost) were similarly developed with Hatch through the 2023 feasibility work with updates completed Grange.

Revenue Assumptions

Revenue assumptions were taken from long-term macroeconomic forecasts (in real terms) provided by market experts and are listed in the table below.

Item	Units	Value
Product price (69.5% product)	$US/dt conc.	112
Exchange rate	US$/A$	0.70
State royalty (applied as a selling cost)	%	5
Net product price	$/dmtu	2.185

Table 7 – Revenue assumptions for pit optimisation

Note: Financial assumptions available at the time of pit optimisation data may be superseded and different to final project financial metrics in this announcement

A 10% discount rate was used for pit optimisations.

For the purposes of the optimisation, it was assumed that all the material will be sold at a transfer price as concentrate FOB at Albany.




Cut-off

As the difference between the ore and waste mining cost varied depending on the bench, the cut-off also varied slightly. A marginal cut-off grade of 8% DTR was identified during pit optimisation however the blocks between 8% and 10% DTR were observed to be discontinuous and prone to additional dilution. To simplify this and to conform with the Mineral Resource cut-off, the cut-off for the final optimisation and Ore Reserve was elevated to a DTR of 10%.

PIT OPTIMISATION RESULTS

The figure shows the base case physicals by the apparent price. The revenue factor 1 (apparent price of A$160/dt conc.) is highlighted. Physicals steadily increase as the apparent price increases. The DTR grade increase from its minimum is due to the increasing DTR with depth.

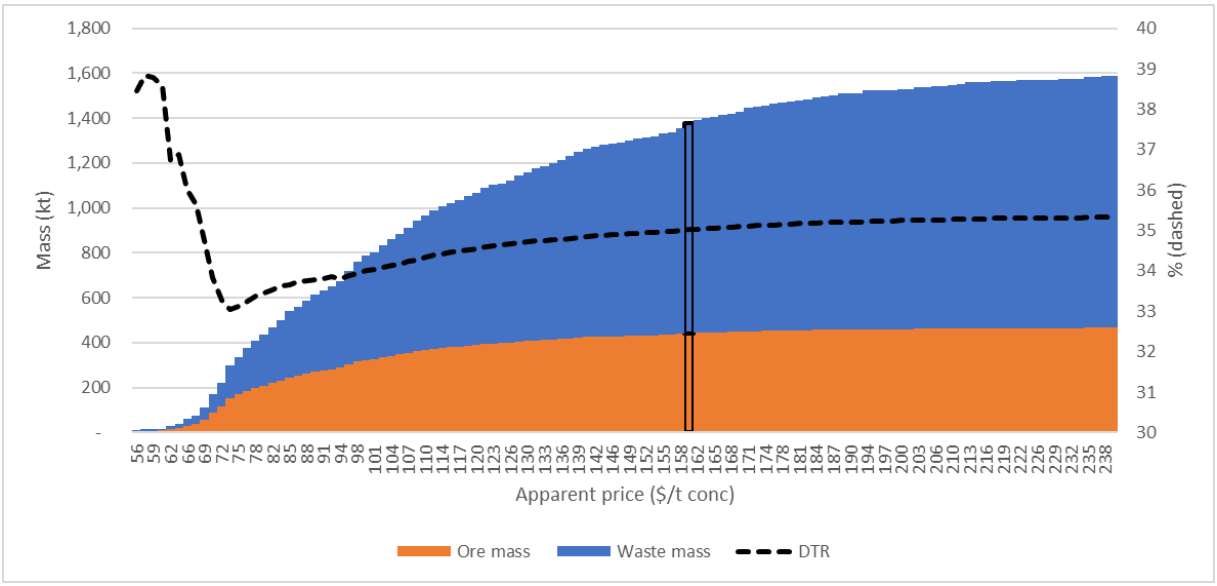


Figure 4: Pit Optimisation Results




The table shows the revenue factor 1 shell output.

Parameter	Units	Value
Revenue factor		1.0
Total mass	Mdt	1,379
Waste mass	Mdt	936
Strip ratio	wst:ore	2.12
Ore mass	Mdt	442
DTR	%	35.0
Concentrate mass	Mdt	146
Concentrate Fe	%	69.6
Revenue - selling	$ B	20.6
Total cost	$ B	11.4
Undiscounted cash flow	$ B	9.2
Unit cash flow	$/dt conc.	63
Indicative present value	$ B	2.9
Life	Yrs	29

Table 8 – Pit optimisation outputs for revenue factor 1 pit shell

Note: Financial assumptions available at the time of pit optimisation may be superseded and different to final project financial metrics in this announcement

Figure 5 shows the pit shells coloured red to blue (56 to A$160/dt conc.) and light to dark grey (162 to A$240/dt conc.) overlain with the topography contours. The south-east end of the pit shells are constrained by the 100 m offset from the lease boundary.

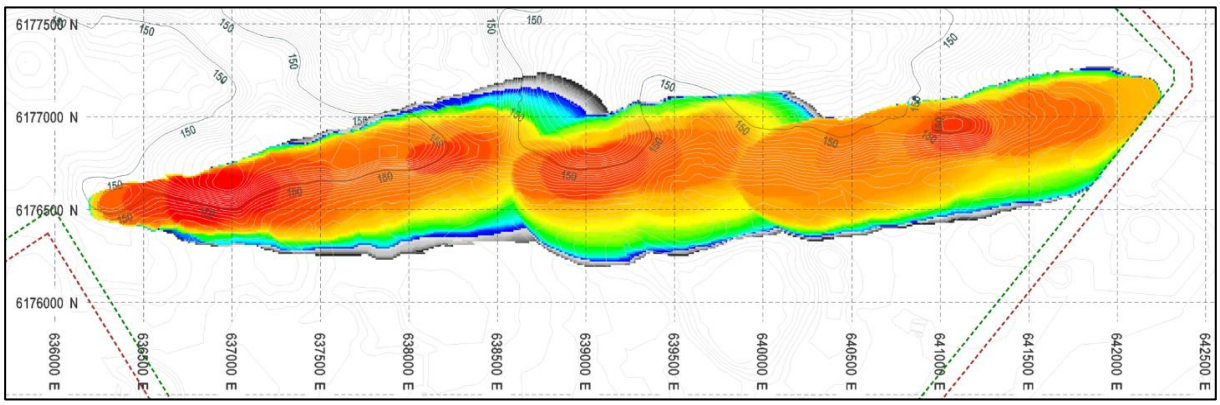


Figure 5: Pit Optimisation Grade Shells

PIT DESIGN

The optimisation process described above, and its output shells were used to inform the ultimate design. The ultimate design used the 0.96 revenue factor shell as a basis. Each of the three zones essentially has its own ramp systems with the staged designs developing the ramps with access to dumps as required.

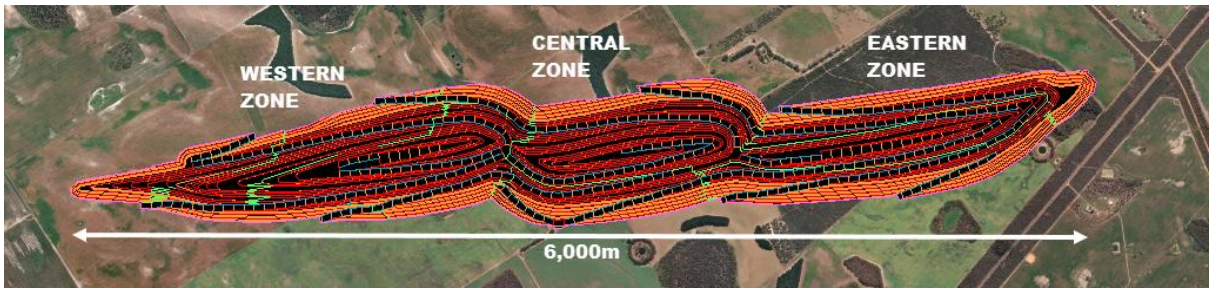


Figure 6: Pit Design

Stage designs

There are three stages per zone with the intended mining sequence shown in Figure 7. Multiple stages will be mined concurrently to maintain ore supply and balance mining requirements.

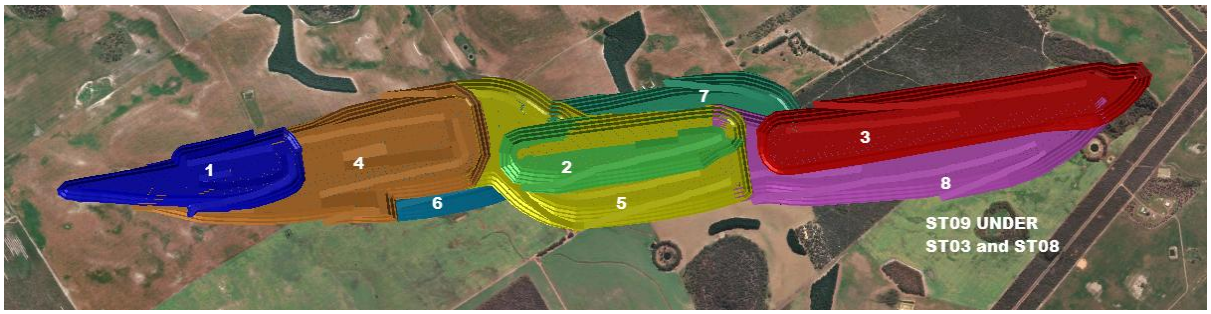


Figure 7: Pit design showing stage sequence




MINING INVENTORY

The mining inventory by stage is shown below in Table 9. The values below are inclusive of ore loss (1%) and dilution (9%). There are slight discrepancies in totals due to rounding differences between stages and total designs.

Stage	Zone	Surface area (ha)	Volume (Mbcm)	Ore (Mdt)	Waste (Mdt)	Total (Mdt)	Strip ratio (wst:ore)	Pit bottom (mRL)	Maximum depth (m)
1	West1	38.6	22.6	28.9	31.6	60.5	1.1	0	159
2	Central1	47.2	31.2	36.3	46.7	83.0	1.3	-24	183
3	East1	74.1	56.7	76.1	82.8	158.8	1.1	-24	174
4	West2	69.4	86.4	85.0	153.6	238.7	1.8	-96	255
5	Central2	48.7	65.0	22.2	142.4	164.6	6.4	-120	270
6	West3	6.6	56.2	44.5	117.4	161.9	2.6	-228	387
7	East2	43.7	58.5	12.4	134.2	146.6	10.8	-24	174
8	Central3	18.7	62.1	67.8	115.0	182.8	1.7	-252	410
9	East3	0.0	25.0	38.7	39.1	77.8	1.0	-192	342
Total		**347.0**	**463.7**	**412.0**	**862.7**	**1,274.7**	**2.1**	**-252**	**410**

Table 9 – Mining Inventory




Table 10 summarises the ore by Mineral Resource category. A minor amount of unclassified material is included as dilution.

Parameter	Units	Measured	Indicated	Total
Mass	Mdt	389.7	22.3	412.0
DTR	%	35.0	29.3	34.7
Concentrate mass	Mdt	128.3	6.1	134.4
Concentrate Fe	%	69.6	69.5	69.6
Concentrate Al_2O_3	%	1.3	1.1	1.3
Concentrate SiO_2	%	1.2	1.1	1.2
Concentrate P	%	0.002	0.009	0.002
Concentrate S	%	0.5	0.2	0.5
Concentrate LOI	%	-2.9	-1.47	-2.6
Concentrate CaO	%	0.2	0.1	0.2
Concentrate K_2O	%	0.01	0.01	0.01
Concentrate MgO	%	0.2	0.1	0.2
Concentrate Mn	%	0.04	0.05	0.04
Concentrate Na_2O	%	0.04	0.05	0.04
Concentrate TiO_2	%	0.4	0.3	0.4
Concentrate V	%	0.02	0.08	0.02

Table 10 – Summary of ore by Mineral Resource classification

The conversion from Resource to design is shown below in Table 11.

Category	Units	Resource	Pit design	Difference	% converted
Measured	Mdt	497.8	389.7	-108.1	78
Indicated	Mdt	131.3	22.3	-109.0	17
Inferred	Mdt	1,331.5	-	-1,331.5	0
Total	**Mdt**	**1,960.6**	**412.0**	**-1,548.6**	**21**

Table 11 – Conversion of Mineral Resource to Ore Reserve

Resources outside the pit design are either part of the eastern half of the Mineral Resource which has not yet been considered for development, or outside the design developed from the optimal economic pit optimisation shell based on the limits of the western half of the Mineral Resource.

WASTE ROCK DISPOSAL

One of the main changes from the 2023 FS is the change in the requirements for the waste rock dump. PAF material can be co-disposed within the dump. There is no requirement to store AT within the dump which also removes the need for shear pillars of fresh waste inside the dump. A maximum 180mRL for top of WRD was used.

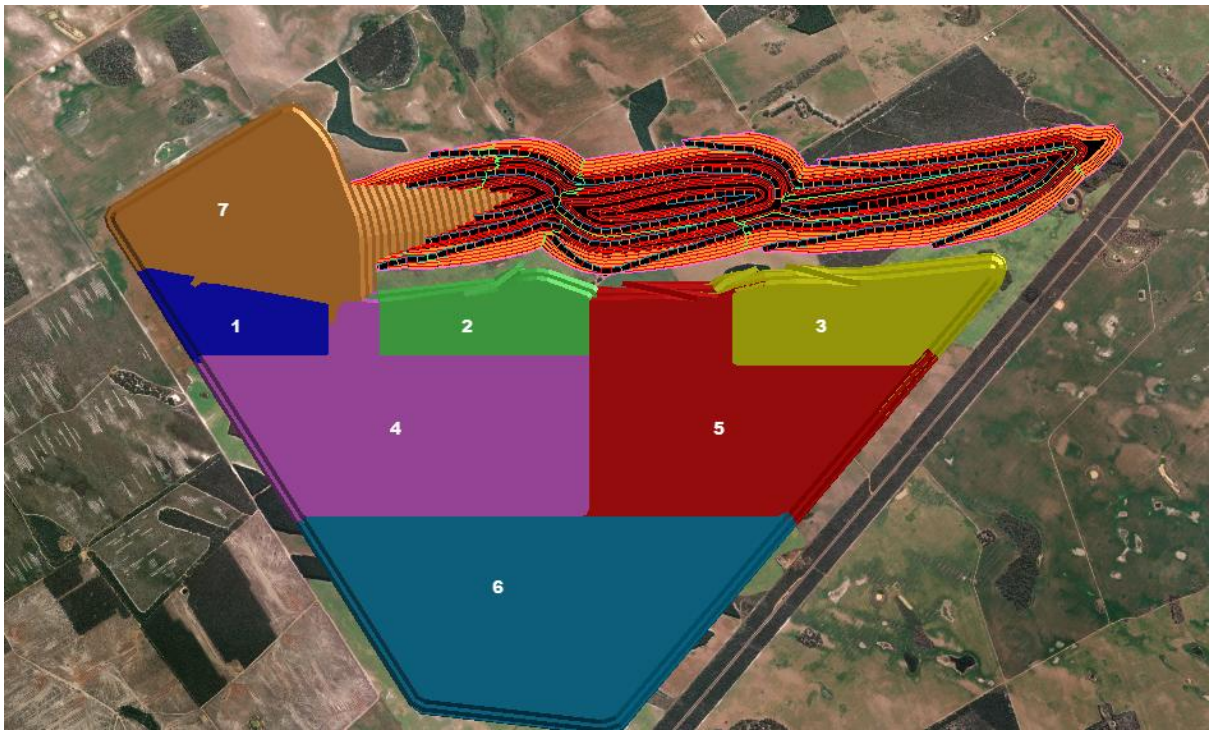


Figure 8: Waste rock storage facility design in relation to mining stage

MINING PRODUCTION SCHEDULE

Figure 8 shows the movement from the stages and an approximation of the loading units required for that movement (loading rates differ between weathering types resulting in variable annual movement).

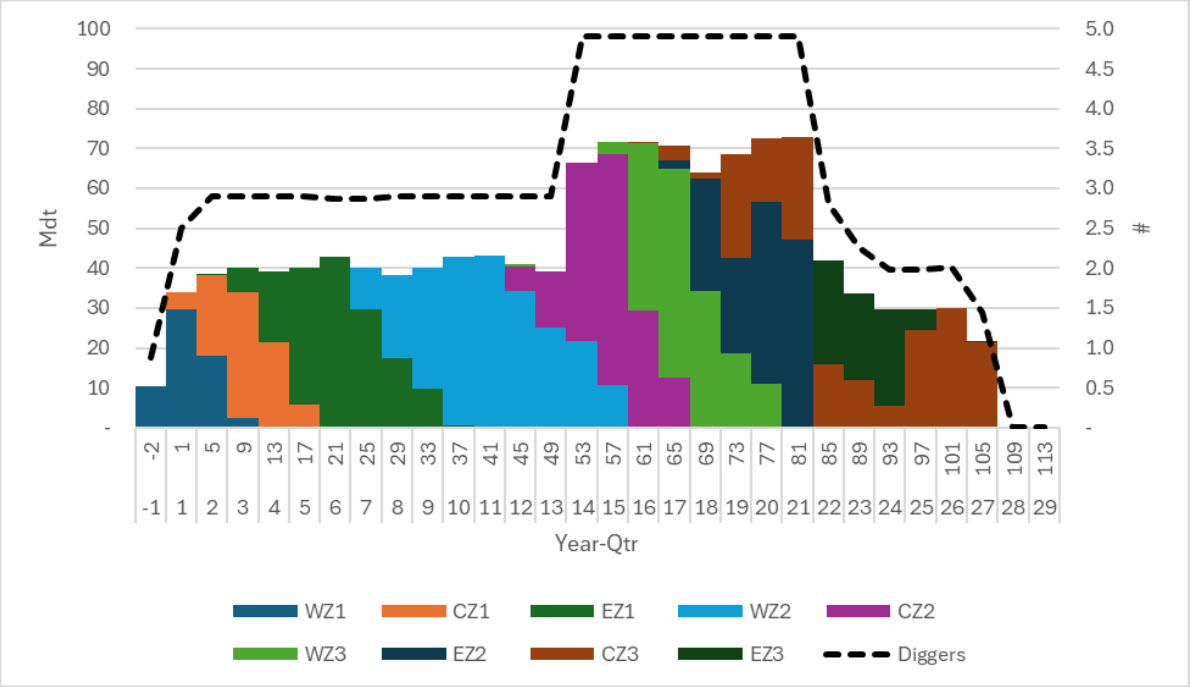


Figure 9: Mining Production Schedule

Figure 9 shows the split between ore and waste.

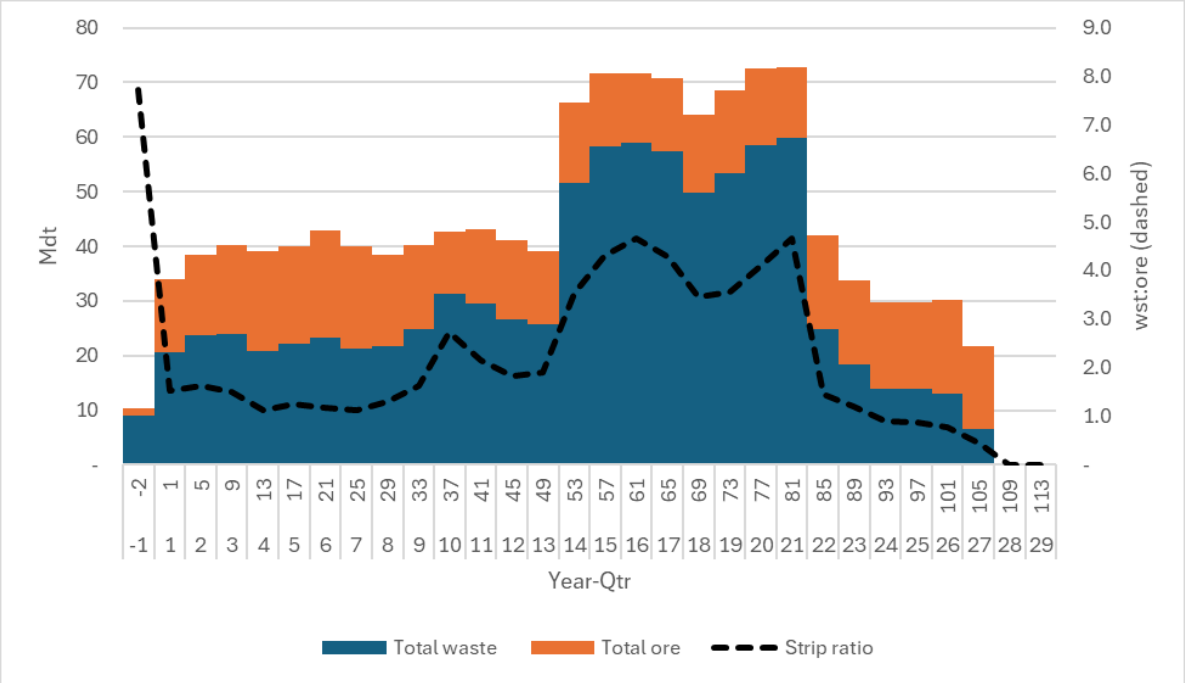


Figure 10: Mining Schedule by Ore/Waste tonnes

PROCESSING SCHEDULE

Figure 10 shows the annual ore feed by grade bin. Years of larger proportions of low grade in the feed tend to correspond to changeovers from one stage to the next.

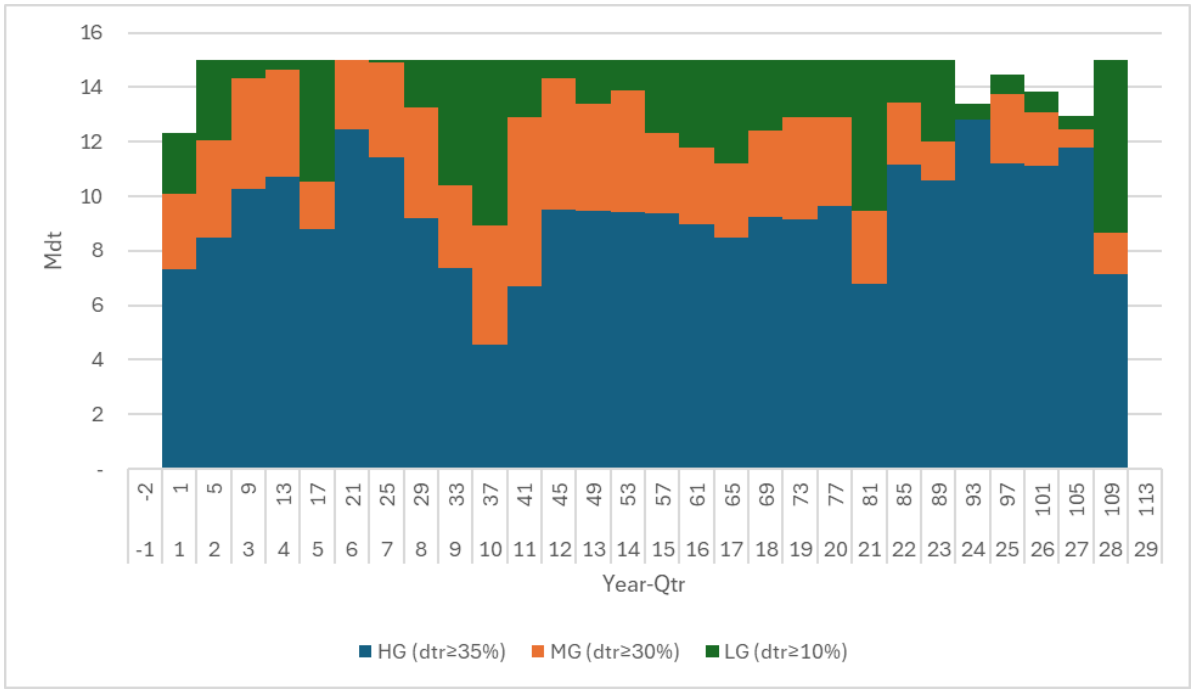


Figure 11: Processing Schedule

CONCENTRATE SALES

In total 134Mt of concentrate is sold from the project after accounting for magnetic recovery, flotation and plant losses. Final concentrate is marketed and priced at the following specification shown in table 12 in line with the metallurgical test work.

Fe %	Al_2O_3 %	SiO_2 %	P %	S %	LOI %	CaO %	K_2O %	MgO %	Mn %	Na_2O %	TiO_2 %	V %
70	1.4	0.9	0.002	0.06	-3.1	0.06	0.01	0.12	0.03	0.003	0.4	0.018

Table 12 – Concentrate sales quantity and quality

For concentrate sales, Sojitz Corporation has a retained right that allows the purchase of up to 30% of production at benchmark prices with consideration of product quality and value in use at the point of sale. Shagang Group has a right to purchase up to 56% of production at benchmark prices with consideration of product quality and value in use at the point of sale. Both parties have expressed a preliminary interest in purchasing product and have maintained their rights.




JORC CODE 2012 TABLE 1 - SOUTHDOWN PROJECT
SECTION 1 - SAMPLING TECHNIQUES AND DATA

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representativity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine*	• The deposit was sampled using diamond drill holes (DD) on a nominal 100m x 50m grid spacing. A total of 401 DD holes were drilled for 102,000 m. Holes were generally angled at -60° towards grid north to optimally intersect the mineralised zones. • Diamond core was used to obtain the best possible sample quality for lithology, geotechnical, grade and density information. • Diamond core was a combination of HQ and NQ sizes, some triple tube. Sample intervals were controlled based on geological contacts and generally between 1 and 3 meters in length. • All core samples were continuous through mineralised zones to capture all intervals, and half cored by diamond sawing by following the orientation line to ensure consistent sampling. • Samples were dried, crushed, split and pulverised to nominally 98% passing 75µm for Davis Tube Recovery (DTR) determination. • The DTR method was established for the Southdown deposit in 2005 by Promet, reviewed in 2009 by Golder, and used for all samples used in the resource estimation. • All samples are analysed for DTR, with Total Fe, SiO2, Al2O3, S, TiO2, Na2O, K2O, CaO, MgO, Mn, P, V and LOI analysed from the Davis Tube concentrate.




Criteria	JORC Code explanation	Commentary
	nodules) may warrant disclosure of detailed information.	
Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• All samples used in the resource estimation were sourced from diamond drill core of either HQ or NQ size, with Reverse Circulation (RC) precollars or cored from surface. • Some core was drilled using triple tube techniques however the excellent core recoveries have found that standard tube methods are suitable
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• Core recoveries were recorded in the drillhole database. Core recoveries are generally high in the mineralised zones at Southdown (>98%) and there are no significant core recovery issues. • Drilling penetration rates were controlled to maximise recovery in ore zones. • No relationship between sample recovery and grade is known at Southdown.
Logging	• *Whether core and chip samples have been geologically and geo-technically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.*	• Core samples have had detailed geological and structural logs completed. Basic geotechnical logging was undertaken routinely with detailed geotechnical logging on a selected series of oriented holes. • Some early drill holes used RC/open hole percussion techniques for precollaring. Only basic lithological logging was recorded for these portions. • Logging is a combination of qualitative and quantitative methods, recording details for lithology, alteration, mineralisation, shearing, weathering, and structure/basic geotechnical. All drill core was photographed wet and dry. • All drill core was fully logged.




Criteria	JORC Code explanation	Commentary
	• *The total length and percentage of the relevant intersections logged.*	
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representativity of samples.* • *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• As standard practice core was half core sampled, except for core sampled for metallurgical testing that was full core sampled. • No non-core samples have been used for resource estimation purposes. • Core was cut using a diamond impregnated saw blade on site at the Southdown core farm. The ore is moderately foliated, and cutting is generally perpendicular to the foliation. Standard procedure is to cut along the orientation line. If a line was not present a black line was drawn on to provide a consistent reference for cutting. • The sample preparation at the lab for diamond core follows industry best practice in sample preparation using the DTR method for the Southdown deposit, involving oven drying at 110 degrees for 12 hours, then coarse crushed to minus 2mm on a Boyds crusher then split to ~3kg, crushed again to 90% passing 1.7mm and split again with a 150g sub-sample taken for pulverising to 98% passing 75 microns. • Standard core cutting and sample handling procedures are followed to minimise possible contamination between samples. This is a minimal risk owing to the quantum of grades (ie tens of percent). • No quality control samples were collected at this stage. • Handheld magnetic susceptibility readings are taken for every metre of drill core. There is a strong correlation between DTR and magnetic susceptibility enabling the calibration of magnetic susceptibility to DTR to serve as a general check on DTR values and sample integrity. • Sample preparation techniques are industry standard for magnetite ores. • The sample sizes are considered to be appropriate based on the style of mineralization, the thickness and consistency of the intersections and assay range for the primary analysis (% recoverable magnetite concentrate).
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers,*	• The primary analytical technique is Davis Tube Recovery (DTR) on a 10g sample, followed by Total Fe, SiO_2, Al_2O_3, S, TiO_2, Na_2O, K_2O, CaO, MgO, Mn, P and V via XRF with LOI on the Davis Tube Concentrate (DTC). All techniques are considered total. DTR is the most appropriate assay technique for determination of magnetite recovery. • Magnetic susceptibility instruments are used to provide indications of grade on the drill core to assist with




Criteria	JORC Code explanation	Commentary
	handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc. • *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	sample selection. • These do not form part of the formal resource or reserve estimate at any time. • Certified reference materials are inserted at a rate of 1 in 50. Coarse and preparation duplicates are undertaken at a rate of 1 in 50, each with lab repeats undertaken at a rate of 1 in 20. Sizing checks on the grinding are performed at a rate of 1 in 10. • Data analysis has been performed, and the data demonstrates sufficient accuracy and precision for use in Mineral Resource estimation for deposits of this type.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• Significant intersections are verified by alternative company personnel. • No twinned holes have been drilled. • Primary data is captured directly to standard template acQuire database log sheets using laptops with standard logging codes and data entry control. The data is verified by the geologist and then loaded into the central (project-wide) database. All procedures are maintained in the Core Handling Manual. • During the Southdown Feasibility study (2011-12) a significant bias was identified in XRF analyses from samples analysed during 2005-2006. The major impact was significantly higher SiO2 values from the DTR Concentrate, with lesser impacts on other elements. • It is believed that shorter wash times in the DTR method at that time caused this bias. • An extensive program of re-analysing 10% of samples from the period defined the bias enabling statistical algorithms developed by SGS Mineral Services to be applied to that data to correct the bias. • This correction has been thoroughly reviewed internally, and by external consultants including Golder (who developed the initial resource models and methodology) and Optiro (who undertook the peer review of the resource and reserve models for the Feasibility study).
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource*	• All drill collars are surveyed by contract surveyors using high resolution RTK GPS with an expected accuracy of +/- 100mm in easting, northing and elevation. For downhole surveys, the majority of holes are surveyed using a north seeking gyro with stations every 5-10m downhole with an expected accuracy of +/-1 degree in azimuth and +/-0.1 degree in inclination. Where gyro surveys are unable to be conducted single-shot




Criteria	JORC Code explanation	Commentary
	estimation. • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	Eastman dips at 30m spacing downhole are utilised. Hole azimuths for these are assumed to be straight (as compass data is not useable due to the magnetic nature of the mineralisation). Analysis of gyro data indicates this is a reasonable assumption with little deviation observed. • The grid system used is MGA GDA94 Zone 50. • The topographic surface in the vicinity of the deposit has been developed using an airborne LIDAR survey conducted in 2010 which produced 0.5m contours.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	• The nominal drill hole spacing is 100m (between section) and 50-100m (on section). • Data spacing and distribution are analysed in semi-variograms and provide geo-statistical ranges for use in resource categorisation. The sample spacing is appropriate to provide a defensible resource classification to 2012 JORC Code standard. • The mineralised domains have demonstrated sufficient continuity in both geological and grade continuity to support the definition of Mineral Resource and Reserves, and the classifications applied under the 2012 JORC Code. • No compositing is undertaken, and all data used is length weighted.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• The majority of drill holes are oriented to achieve intersection angles as close to perpendicular to the mineralization as is practicable. • No orientation-based sampling bias has been identified in the data at this point.
Sample security	• *The measures taken to ensure sample security.*	• All samples are logged and bagged by site geological staff and sent to contracted laboratories. • All samples are tracked in the database from cutting to return from the laboratory.




Criteria	JORC Code explanation	Commentary
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• During the Southdown Feasibility study (2011-12) a significant bias was identified in XRF analyses from samples analysed during 2005-2006. The major impact was significantly higher SiO2 values from the DTR Concentrate, with lesser impacts on other elements. • It is believed that shorter wash times in the DTR method at that time caused this bias. • An extensive programme of re-analysing 10% of samples from the period defined the bias enabled statistical algorithms developed by SGS Mineral Services to be applied to that data to correct the bias. • This correction has been thoroughly reviewed internally, and by external consultants, including Golder (who developed the initial resource models and methodology) and Optiro (who undertook the peer review of the resource and reserve models for the feasibility study). • The Resource model was formally peer reviewed by Golder Associates and Optiro.




SECTION 2 - REPORTING OF EXPLORATION RESULTS

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• All mining tenure is held by Grange Resources Ltd (100%). • Mining Lease M70/1309 is held over the western half of the identified Mineral Resource. Land tenure is predominantly freehold farming land with some road reserves managed by Main Roads WA and the City of Albany. This lease expires in Nov 2033. • Retention Licence R70/61 was converted from Exploration License E70/2512 surrounded the immediate area of the mine lease and extends eastward to cover the eastern half of the identified Mineral Resource as well as the eastern extension of the magnetic anomaly. Land tenure is predominantly freehold farming land with some road reserves managed by Main Roads WA and the City of Albany. This license was granted in March 2020 and currently requires renewal every 3 years, with current expiry in March 2026. • General Purpose Lease G70/217 is situated on the southern margin of the Mine Lease completing coverage of the proposed Project area. Land tenure is entirely freehold farming land. The Lease expires in August 2029. • L70/185 and 186 are miscellaneous licences for water exploration located south and north of the mine lease respectively. These licences expire in February 2038. • There are no native title issues relating to the current mining tenure. Extensive consultation with local Traditional Owner groups has been undertaken to appropriately manage several heritage sites within the tenements. Section 18 permits to disturb have been approved and most are partially excavated already. • All mining tenements are managed to be maintained in good stead. There are no known impediments to retaining current or future tenement requirements.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Regional-scale aeromagnetic geophysical surveying by the Australian Bureau of Mineral Resources (BMR) identified the magnetic anomaly in 1983. • Initial exploration was commenced by the Southdown Mining Syndicate and CRA Exploration between 1984 and 1986. In 1987 Portman Mining Ltd completed 40 drill holes to prove up the western 2km of the deposit and undertook scout drilling along the eastern 13km of strike of the anomaly. • No work was undertaken between 1988 and 2003, when Grange Resources Ltd purchased the western



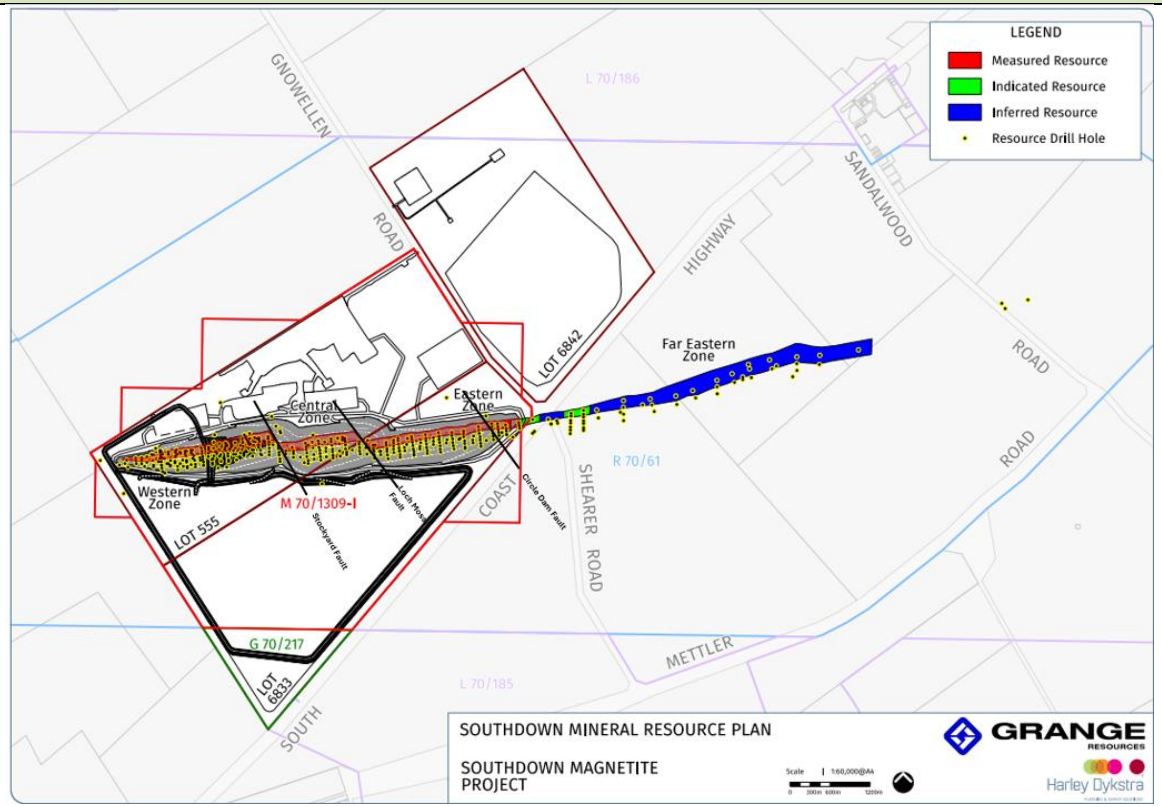

Criteria	JORC Code explanation	Commentary
		portion of the property. • Rio Tinto drilled 23 diamond holes on the eastern portion in 2005-2006 before Grange purchased the exploration license in 2007.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The Southdown Project lies within the Albany-Fraser Orogen, a high-grade metamorphic belt formed as part of the larger Albany-Fraser-Wilkes Orogen during the Mesoproterozoic as a result of the convergence of the Western Australian and Mawson Cratons. • The host rocks are highly deformed granulite facies orthogneiss of the Dalyup Gneiss from the Biranup Zone of the Kepa Kurl Booya Province. • The Southdown Magnetite Deposit comprises an east-west striking zone of Proterozoic age quartz-magnetite gneiss and granulite hosted by a quartz-biotite dominant metasedimentary gneiss and migmatite assemblage. Aeromagnetic data and drilling confirm that the magnetite mineralisation has a strike length of approximately 12 km and dips at 60-65 degrees to the south. A low intensity magnetic anomaly extends a further 7 km to the east for a total length of 19 km. • The deposit occupies the core of a gently east plunging, overturned tight isoclinal syncline with a steeply south dipping axial surface. The deposit is offset by moderately northeast dipping dextral reverse faults and subsidiary steeply southeast dipping sinistral faults. • The magnetite mineralisation is poorly exposed but forms a low east-west trending ridge; this is more prominent in the western half of the deposit but largely buried beneath 20-80 m of Pallinup FM sands/silts. The magnetite mineralisation outcrops in only a few locations within the western portion of the deposit.
Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* ○ *easting and northing of the drill hole collar* ○ *elevation or RL (Reduced Level – elevation above sea level in*	• The Southdown deposit has been extensively drilled, with a comprehensive database of 401 diamond drill holes which inform the Resource Model for 102 Km of drilling. • No additional drill hole information has been obtained since the last update to the Mineral Resource in February 2014. • A list of key drill hole intercepts can be found in the February 2014 ASX release and has not been included here.



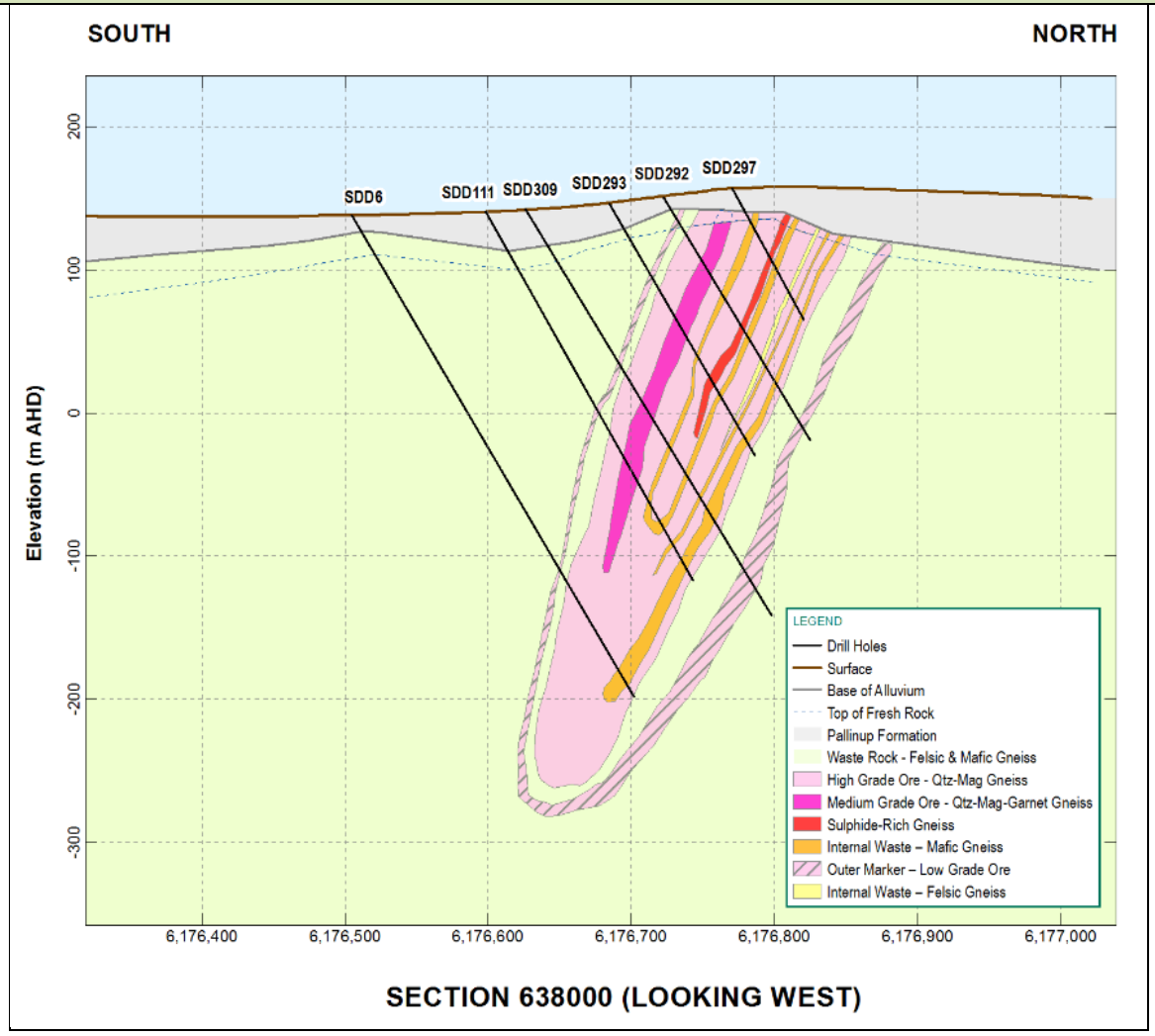

Criteria	JORC Code explanation	Commentary
	metres) of the drill hole collar ○ *dip and azimuth of the hole* ○ *down hole length and interception depth* ○ *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• Average interval grades were determined by averaging all samples weighted by sample length. • Intervals are selected using a 10% DTR cut-off. • Internal intervals below 10% DTR have been included unless they are >5m in length • There is no cutting of high-grade results. • As magnetite is a bulk commodity, no high/low grade portions of intervals are reported, the entire orebody width is reported in each intercept. • No metal equivalent values have been reported




Criteria	JORC Code explanation	Commentary
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	• The mineralisation generally dips at 60-65 degrees to the south. Drill holes are generally oriented to the north at 60 degrees. • All intervals have been reported as down hole intervals in the February 2014 ASX release which has not been included here.

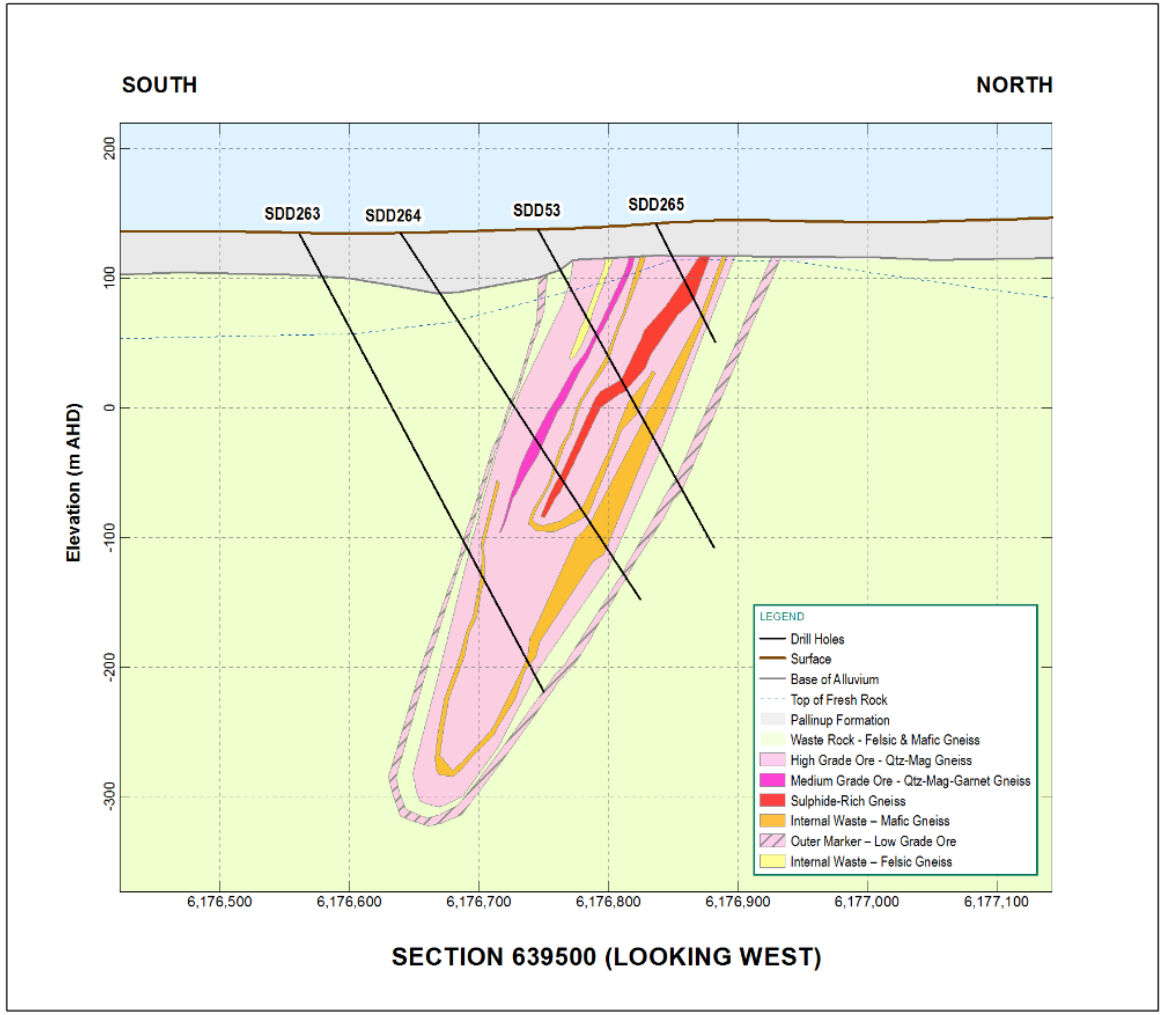
Criteria	JORC Code explanation	Commentary
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	 Southdown locality plan showing Mineral Resource with planned infrastructure

GRANGE RESOURCES

Criteria	JORC Code explanation	Commentary
		

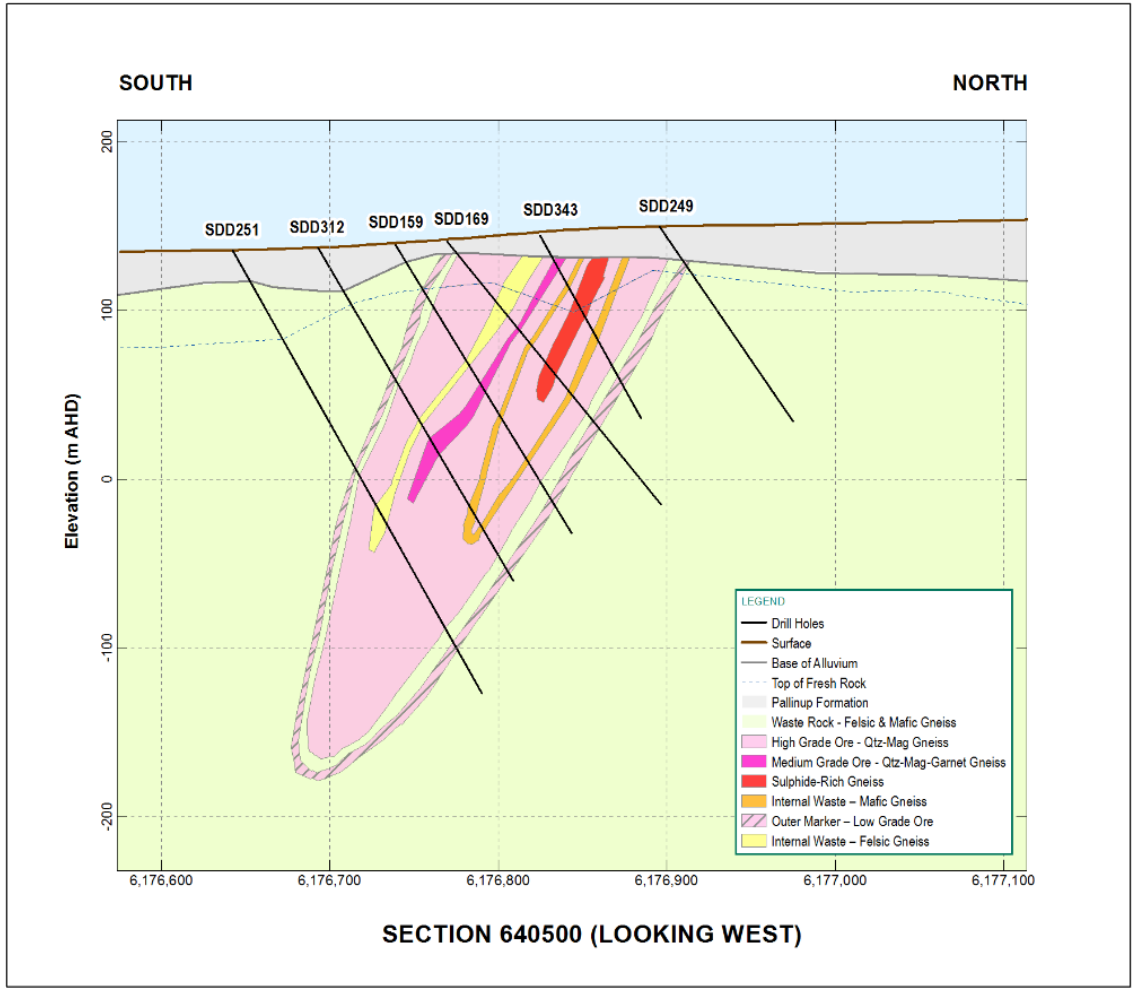
Typical Cross Section for the Western Zone 638,000mE

GRANGE RESOURCES

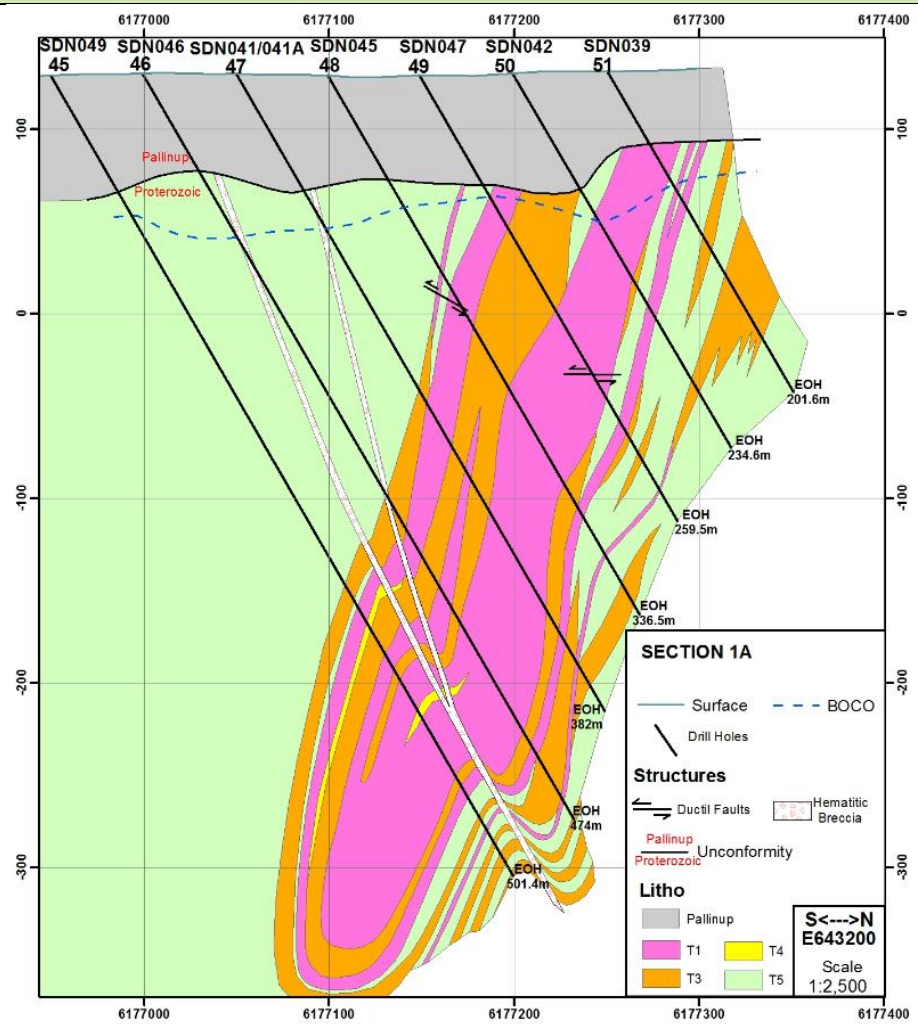
Criteria	JORC Code explanation	Commentary
		

Typical Cross Section for Central Zone 639,500mE

GRANGE RESOURCES

Criteria	JORC Code explanation	Commentary
		

Typical Cross Section for Eastern Zone 640,500mE

Criteria	JORC Code explanation	Commentary
		

Typical Cross Section for Far Eastern Zone 643,200mE




Criteria	JORC Code explanation	Commentary
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• Drilling results have been previously reported.
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• Extensive work has been undertaken on the deposit since 2005. This has included: ○ Extensive airborne and ground geophysical surveys and interpretations, ○ Detailed geotechnical logging and interpretation of wall stability and infrastructure foundations, ○ Metallurgical and petrologic studies, including 3 bulk samples for pilot plant testwork using drill core (22t, 27t and 41 t each), ○ Geochemical testwork for ARD potential, ○ Exhaustive mining, processing, groundwater, environmental, heritage and social studies.
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• The western portion of the deposit (West, Central and East Zones) is essentially ready to move into the detailed engineering stage prior to construction. • Further resource definition drilling is required for the eastern portion (Far East Zone) to upgrade the Inferred resources. There is potential to define some additional resource further east; however, the intensity of the magnetic anomaly is gradually decreasing. • As the deposit is hosted in a synclinal structure, there is no potential for significant extensions to the depth. • The diagrams above indicate the location of areas referred to in the point above.




SECTION 3 - ESTIMATION AND REPORTING OF MINERAL RESOURCES

Criteria	JORC Code explanation	Commentary

Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.*
	• *Data validation procedures used.*
		• In May 2011 an acQuire database was implemented at Southdown, significantly strengthening the validation and controls on data entry and import.
		• Historic data was rigorously validated to ensure it was at a similar standard on migration to the new database
		• Visual validation in 3D is utilised by the plotting of sections with block grades, drill hole assays and geology intervals displayed.
		• The database has strict security levels which limits access for various purposes to reduce the risk of accidental changes to the data.
		• Validation of the database occurs at distinct stages:
		  ○ Data entry – data is entered into acQuire data entry forms, controlled by lookup lists and ranges of acceptable values
		  ○ On entry to the database – data is cross-checked visually
		  ○ Before extracting composites – a set of queries are run, checking for data continuity, abnormal values and overlapping ranges.
		• At all stages spot checks are made on specific areas against raw data or core where available, to check for accuracy and/or correlation. Where applicable, data is plotted out on section or graphically for visual checking.

Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• The Competent Person has worked on the Project since 2009 and had responsibility for the execution of all studies and drilling programmes. • The Competent Person has undertaken frequent visits to the site and worked closely with consultants in compiling the resource estimate.




Criteria	JORC Code explanation	Commentary
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.* • *The factors affecting continuity both of grade and geology.*	• Successive drill programmes have consistently intersected the geological model as expected, providing a high degree of confidence in the geological interpretation. • There is some degree of uncertainty relating to the depth of the synclinal structure in the Far East Zone as it has very limited drill testing. It is, however, supported by detailed structural measurements taken from drill core and 3D inversion modelling of ground magnetic data. • The geological wireframes were developed using interpretations on 100m spaced vertical sections, perpendicular to the strike. The work was carried out in Geovia Surpac. • Sections were cut showing drill hole traces with lithology and DTR information, as well as traces of modelled faults, overlying sediments and oxidation surfaces. • Interpretations were completed for each of the main rock types present within the mineralized horizons. • Sectional interpretations were wireframed in 3D, taking particular care around the offsetting faults. • The robustness of the geological model has indicated that alternative models are unlikely. Alternatives will be considered during future drilling of the Far Eastern Zone to ensure the appropriate interpretation is made. • Geology, lithology and structure are used to guide and control the interpretation and wireframing of ore lenses in preparation for resource estimation. • In particular, wireframes are based on lithology, DTR, mineralogy (sulphides and garnet), and fault boundaries. • The location within a synclinal structure controls the depth extent, with units easily traceable through the limbs and into the hinge zone. At the meter scale local variations occur around parasitic folding but this is not expected to have a material effect on the Mineral Resource. • Strike extent is highly continuous over the 11km defined thus far, with the exception of offsets by three moderately northeast dipping dextral reverse faults which have 50-100m lateral displacements.
Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the*	• The Southdown mineralisation is divided into 4 zones by faults offsetting the stratigraphy; mineralisation would otherwise be continuous over the full strike extent. • Being hosted in a synformal structure, the depth extent is reasonably well defined by the fold hinge.




<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td></td><td>Mineral Resource.</td><td>
<table>
<tr><th>Zone</th><th>Strike Extent</th><th>Width Extent</th><th>Depth Extent</th></tr>
<tr><td>Western Zone</td><td>2,200</td><td>100</td><td>480</td></tr>
<tr><td>Central Zone</td><td>1,200</td><td>100</td><td>450</td></tr>
<tr><td>Eastern Zone</td><td>2,000</td><td>100</td><td>520</td></tr>
<tr><td>Far Eastern Zone</td><td>5,700</td><td>100</td><td>570</td></tr>
</table>
</td></tr>
<tr><td>Estimation and modeling techniques</td><td>

The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.
The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.
The assumptions made regarding recovery of by-products.
Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).

</td><td>

The variographic studies and resource estimation were undertaken by BMGS Perth using Geovia Surpac software.
The resource estimation was performed using Ordinary Kriging (OK).
No top cuts have been applied due to the limited influence of outliers.
Sample data was generally of 3 metre downhole lengths; however, in the minor rock type domains there are many narrower intervals. To ensure that all sample data was incorporated in the estimation, no samples within the ore zones were omitted and samples were weighted by length.
Elemental compositions of the DTR concentrate were also weighted by the corresponding DTR value for that sample.
Accumulated attributes (values after weightings were applied) were subjected to variographic analysis to develop modelling parameters.
Search parameters used for each pass are tabled below.

<table>
<tr><th colspan="9">Southdown Search Parameters - All Attributes</th></tr>
<tr><th>Pass</th><th>Bearing (Z)</th><th>Plunge (X)</th><th>Dip (Y)</th><th>Major Axis (m)</th><th>Major/ Semi-major Ratio</th><th>Major/ Minor Ratio</th><th>Min Samples</th><th>Max Samples</th></tr>
<tr><td>1</td><td>80</td><td>0</td><td>-80</td><td>200</td><td>1</td><td>10</td><td>4</td><td>32</td></tr>
<tr><td>2</td><td>80</td><td>0</td><td>-80</td><td>400</td><td>1</td><td>10</td><td>4</td><td>32</td></tr>
<tr><td>3</td><td>80</td><td>0</td><td>-80</td><td>600</td><td>1</td><td>10</td><td>2</td><td>32</td></tr>
</table>

The block model was constructed using a 20 mE by 20 mN by 12 mRL parent block size with sub-celling to 10 mE by 10 mN by 6 mRL.
New model estimates are compared against previous model estimates using swath plots and visual

</td></tr>
</table>




Criteria	JORC Code explanation	Commentary
	• *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* • *Any assumptions behind modelling of selective mining units.* • *Any assumptions about correlation between variables.* • *Description of how the geological interpretation was used to control the resource estimates.* • *Discussion of basis for using or not using grade cutting or capping.* • *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	inspection of the model around new drill hole data in section. • This deposit is yet to be developed and does not have any production data for reconciliation. • No by-product recoveries have been considered. • Concentrate grades and deleterious elements (impurities) all have variography completed where samples were available and are estimated using ordinary kriging during the resource estimate. • Analysis has been undertaken by BMGS Perth to determine the appropriate block size for the drill hole spacing. The optimum kriging efficiency was determined to be 20mNx20mEx12mZ using the West Zone as a test area. • Sample density is generally 100m between sections and 50-100m down dip. • No selective mining unit had been determined at the time of estimation • There is a strong correlation between DTR and density which is described below in the Bulk Density section. There is also a strong correlation between Total Fe in concentrate and DTR as almost all Fe is associated with the magnetite. No correlations were assumed in the estimation process. • Drill hole sample data was flagged as ore in the database within the domain wireframes interpreted for each zone and rock type. Composites extracted from the database for each domain are therefore controlled by the geological interpretation. • No top cuts have been applied to the current model due to the limited influence of outliers. • New model estimates are compared against previous model estimates by swath plots and visual inspection of the model around new drill hole data in section. • This deposit is yet to be developed and does not have any production data to reconcile against.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• Tonnages are estimated on a dry basis. • Limited moisture determinations have been made in the past which indicate negligible moisture within the highly competent drill core.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• The cut-off grade of 10% DTR is based on a natural break in the grade-tonnage curve and is supported by economic analysis undertaken during the Feasibility study.




Criteria	JORC Code explanation	Commentary
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	• The selective mining unit determined during the Feasibility study is 10 mE x 10 mN x 12 mRL, assuming standard truck and shovel mining methods. • No mining factors (i.e. dilution, ore loss, recoverable resources at selective mining block size) have been applied. • Significant internal dilution bands are wireframed and modelled during estimation. • Analysis of sub-grade mineralised samples (<10% DTR) has provided average DTR and concentrate grades which have been applied to blocks external to the mineralised units. This will be used to account for external dilution at the reserve calculation stage.
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where*	• DTR has been incorporated into the model as a measure of metallurgical recovery in the magnetic separation process. This is based on the performance of DTR at Grange Resources' Savage River mine, where it has been employed as a proven measure of delineating ore and waste, and in modelling the anticipated recoveries through the magnetic separation process for over 55 years. • No further metallurgical recovery factors have been applied to the resource model.




Criteria	JORC Code explanation	Commentary
	this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	
Environmental factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*	• Waste rock: extensive waste rock geochemistry studies have been undertaken to develop an ARD management plan. Potentially acid forming waste will be identified using field tests and disposed of in encapsulated dumps as part of the environmental permit conditions. • Tailings from magnetic separation stages are agglomerated from dry grits and wet tails components and conveyed to a dedicated dry stack storage facility. The Tailings management plan is part of the environmental permit conditions. • Sulphide minerals recovered by flotation will be stored in a dedicated, lined storage facility on site.
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry,*	• All samples used in the estimation had density determinations carried out using the water displacement method. The full sample was used in each determination. • Standard practice is for every ore sample to have a density determination carried out using the full sample of half core.




Criteria	JORC Code explanation	Commentary
	the frequency of the measurements, the nature, size and representativeness of the samples. • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• Density for country rock has been assigned the average value for unmineralized waste rock samples. • Samples were not dried prior to determinations, however due to the highly competent nature of the drill core and extended period of natural drying waiting for processing, the samples are assumed to be dry. Random measurements consistently showed immaterial moisture values. • The ore zones at Southdown are very competent and void space is not considered significant to make allowance for in the density determination method. • The calliper method was used for all waste rocks between 2005 and 2011 to generate a large dataset of waste densities. These values were not used in the resource estimation.
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.* • *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* • *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• Mineral Resources have been classified on the basis of confidence in geological and grade continuity using the drilling density, geological model, modelled grade continuity and conditional bias. • Partially oxidised mineralisation had been previously classified as Inferred Resources due to uncertainty about the impact of clay on metallurgical recovery. For this statement, after a review by Grange process personnel at Grange's Tasmanian operation, this material has been reclassified as Indicated where grade and continuity criteria are met. This is based on experience at Savage River and supported by the DTR results for the samples, which indicate the expected magnetite recovery by definition. • The Competent Person has taken consideration of the relative confidence in tonnage/grade information and the reliability of input data, as well as the confidence in the geological interpretations, in allocating classification categories. • The classification categories applied reflect the Competent Person's views on the deposit.




Criteria	JORC Code explanation	Commentary
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• Optiro undertook a peer review of the Mineral Resource and Ore Reserve as part of the 2012 Feasibility study. They found "the resource model to be a robust estimate of the Southdown Mineral Resource". Optiro raised several issues but acknowledged they would be of minor concern, apart from considering the factoring of historic assays in the classification stage. This is discussed below. • Golder also reviewed the Resource Model for the 2012 Feasibility study, having completed the previous resource models and largely defining the methodology used in the current model. • During the 2022 prefeasibility study and 2023 feasibility study, Snowden Optiro and Mine Planning Services reviewed the resource model and identified the need for the updates undertaken in this study.
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource 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 resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic*	• The Competent Person considers the Mineral Resource estimate to have a high degree of confidence for the western portion of the deposit (excluding the Far East Zone). • Many phases of drilling have tested the geological interpretation and previous resource models and consistently found them to be accurate. • Drill holes targeting the base of the deposit in the keel of the syncline have repeatedly intersected the interpreted units as expected, thus supporting the extension of measured resources to the base of the keel. • The factoring of 2005/2006 DTC XRF results introduces a level of risk in estimating the impurities in the final concentrate product. Grange and the Competent Person have assessed this risk and determined that it is not sufficient to downgrade the resource classification for the following reasons: ○ There is a broad spread of post 2006 infill drilling throughout the areas of 2005/2006 drill holes providing support to the estimation. ○ The historical issues affected only SiO2 in a significant manner; other elements had relatively minor adjustments. ○ Volume/Tonnage of ore was not affected, DTR was not affected. ○ Robust testwork reported by SGS provides confidence that the approach is valid. ○ QAQC on the duplicate samples from the 2005/2006 results demonstrated the current Davis Tube method is valid, and correlated with QAQC for the 2011/12 analytical results, thus validating the majority of the database. • The Far East Zone has demonstrated a broad continuity; however, variation in geometry along its strike requires additional drilling to delineate where changes occur. An Inferred classification is deemed




Criteria	JORC Code explanation	Commentary
	evaluation. Documentation should include assumptions made and the procedures used. • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	appropriate for this area. • The resource classification as applied by the Competent Person is believed to be relevant to estimates at the scale of the SMU, i.e. local mining. • This project is yet to proceed to development stage and does not have any production data for reconciliation.




SECTION 4 - ESTIMATION AND REPORTING OF ORE RESERVES

Criteria	*JORC Guidelines*	Commentary
Mineral Resource for conversion to Ore Reserves	*Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.* *Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.*	The resource model was developed by BM Geological Services and updated to comply with JORC Code in 2012 and the Mineral Resources were reported to the Australian Securities Exchange (ASX) on 28 February 2014 and reported at a 10% Fe Davis Tube recovery (DTR) cut-off in the 2022 pre-Feasibility study (PFS) released in March 2022. The current resource model was adjusted and reported in Geovia software by Cadre Mining and Geology Limited in April 2024 and is the subject of the December 2024 Mineral Resource estimate. The new model is reported with the following changes from the 2014 reporting: • The inclusion of oxide material as ore • Re-calculation of waste density values to lessen the effect of high value outliers in raw density composites. The "2403sdn_resource1211_reblocked _planning.mdl" model is a re-blocked resource model for mine planning and supplied by Grange Resources Limited (Grange). The Mineral Resource was reported inclusive of Ore Reserves. Independent reporting to validate model was achieved by Snowden Optiro.
Site visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* *If no site visits have been undertaken indicate why this is the case.*	Site visits were completed by the following Competent Persons: **Competent Persons** | **Items** | **Date of site visit** Frank Blanchfield | Mining | June 2024 No metallurgy site visit was undertaken as there is no plant or infrastructure to inspect at site. Dean David attended the pilot plant testwork at both Loesche and SGA laboratory in Germany in 2022 and the conventional-milling pilot plant testwork performed at ALS (Perth) in 2011 to observe and provide guidance in the process.
Study status	*The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.*	The Southdown Magnetite Project is currently at feasibility study (FS) level with the completion of this 2024 FS update.




Criteria	*JORC Guidelines*	Commentary
	The Code requires that a study to at least Prefeasibility 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.	
Cut-off parameters	*The basis of the cut-off grade(s) or quality parameters applied.*	A 10% DTR cut-off was applied to the diluted model for the Ore Reserve estimate. A marginal cut-off of approximately 8% was identified and the small number of valuable blocks and increased dilution recovering these led to the elevated cut-off grade of 10% DTR
Mining factors and assumptions	*The method and assumptions used as reported in the Prefeasibility 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).* *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.* *The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control and pre-production drilling.* *The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).* *The mining dilution factors used.* *The mining recovery factors used.* *Any minimum mining widths used.*	Snowden Optiro completed a mining study for the FS in 2023 and this was updated using the internal resource model reported here as December 2024 as a basis for the conversion of the Mineral Resource into an Ore Reserve. Other design aspects for the mining factors are: • No requirement for co-disposal of the potentially acid forming (PAF) waste rock in encapsulated cells or the agglomerated tails, as this can be incorporated in the mine waste rock dump with no specific PAF management • Treatment of oxide with the allowance of no more than 5% POX (Partially Oxidised) feed was achieved. • Creation of a mining model with ore from the resource model blocks combined in the X and Y direction to model 8% ore dilution and 2% ore loss on a tonnes basis for the entire resource • Current mining costs for owner mining • A mining bench height of 12 m for all materials, with ore mined in 6 m flitches • Separate storage of the agglomerated tails waste. The DFS considers a single concentrate product for offtake, subject to marketing specifications. An evaluation using pit optimisation to produce an economic mining shell using just the revenue from the Fe concentrate product operating, selling and royalty costs and metallurgical recovery. This was used for a detailed stage pit design and production scheduling, that was in turn used to convert the Mineral Resource to an Ore Reserve. Mine equipment requirements were determined by Minero Consultants who are expert in mine cost modelling, who provided owner mining fleet costing from a current Caterpillar Inc. budget pricing quotation, using the Snowden Optiro mine production schedule as a basis.




<table>
<tr><th>Criteria</th><th>JORC Guidelines</th><th>Commentary</th></tr>
<tr><td></td><td>The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.

The infrastructure requirements of the selected mining methods.</td><td>Conventional open pit truck and excavator mining will be applied using 365-tonne excavators and 194-tonne haul trucks supplied by the original equipment manufacturer (OEM). Drilling will be done with 229 mm holes in the 12 m waste benches and down to 165 mm holes for trim shots in fresh material. There will be significant tonnages in the upper benches of Pallinup Formation that will be free-dig waste. Blasting powder factors will increase to 1.0 kg/m^3 for the fresh ore. Grade control will be done using blasthole sampling.

Overall slopes were calculated by Snowden Optiro based on the guidance provided by Mining One and the previous pit design.
<table>
<tr><th>Material type</th><th>Western Zone (°)</th><th>Central Zone (°)</th><th>Eastern Zone (°)</th></tr>
<tr><td>Pallinup and POX</td><td>26</td><td>26</td><td>26</td></tr>
<tr><td>Fresh – north wall</td><td>50</td><td>50</td><td>53</td></tr>
<tr><td>Fresh – south wall</td><td>51</td><td>49</td><td>53</td></tr>
<tr><td>Fresh – southeast wall</td><td>NA</td><td>NA</td><td>49</td></tr>
<tr><td>Fault zone – north wall</td><td>50</td><td>50</td><td>50</td></tr>
<tr><td>Fault zone – south wall</td><td>45</td><td>45</td><td>45</td></tr>
</table>
The minimum mining width is 40 m.

No in-pit Inferred Mineral Resources were used to quantify Ore Reserves.

Standard mining infrastructure will be supplied by Grange, including workshops, mobile plant laydown, offices and infrastructure.</td></tr>
<tr><td>Metallurgical factors and assumptions</td><td>The metallurgical process proposed and the appropriateness of that process to the style of factors or mineralisation.

Whether the metallurgical process is well-tested technology or novel in nature.

The nature, amount and representativeness of metallurgical testwork undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.</td><td>Historical testwork
ProMet, in a working relationship with Metso, conducted testwork and studies over the period 2005 to 2009, which culminated in the development of a HPGR and ball milling-based flowsheet. A review by Wood demonstrated that alternative approaches, including the AG and Ball mill approach used commonly in the industry and at Savage River, deserved consideration.

Extensive testing of representative samples of the Southdown deposit underpins the process design, product yield, product quality and the revenue generation predicted in the FS.</td></tr>
</table>




Criteria	*JORC Guidelines*	Commentary
	Any assumptions or allowances made for deleterious elements. *The existence of any bulk sample or pilot-scale testwork and the degree to which such samples are considered representative of the orebody as a whole.* *For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?*	A bulk sample for the 2010 pilot metallurgical testwork was collected from seven 150 mm diameter diamond drillholes and nine PQ (83 mm diameter) diamond drillholes distributed across the Western and Central zones of the Southdown orebody. Based on mine planning in 2010–2011 the bulk sample represented ores to be mined in the first five years of the project. The bulk sample was resistant to degradation and was used in conventional milling and vertical roller mill pilot plants up until 2022. With a reduction in plant production from 10 Mt/a to 5 Mt/a the sample representativity now extends to the first 10 years of the project. A total of 66 variability samples were collected from spatially diverse locations in the Western, Central and Eastern zones of Southdown that make up the Ore Reserve areas of the deposit. The initial mining area (the Western Zone) contributed 34 samples, the Central Zone 20 samples, and the Eastern Zone 12 samples. All samples were tested for comminution properties and analysed by DTR to determine grade. Extensive testing of magnetic separation stages, further grinding stages and pyrrhotite flotation was performed on variability samples, composites of variability samples and the bulk products generated by pilot plant comminution testing. Ore classed as POX was previously excluded from reserve calculations but has been included in the 2024 Ore Reserve. No targeted metallurgical testwork has been performed on POX samples but all have been tested for DTR in the geological modelling work. The DTR measurements (yield and magnetics grade) for oxidised samples such as POX are equally valid as DTR measurements on fresh (unoxidised) samples. Both the ProMet HPGR circuit and the Wood AG/Ball mill circuit required a large amount of generally unavailable fresh water, with similar amounts required as fresh process water or as CCD wash water to remove chlorides from the concentrate after processing in seawater. The vast majority of these large fresh-water demands could only be met by desalination of seawater. To prioritise a reduction in desalinated water consumption, in 2018 Wood was asked to recommend a promising dry grinding pathway. At the same time, Grange reduced its target production of magnetite concentrate from 10 Mt/a to 5 Mt/a, to reduce power and water demand. Wood evaluated fine HPGR processing (as being installed at Iron Bridge by FMG) and VRM, which was under investigation by Wood for another client. Wood's recommendation was the VRM pathway coupled with dry magnetic separation. **Design and flowsheet** Processing aspects of the flowsheet include: Vertical roller mill grinding circuit




Criteria	*JORC Guidelines*	Commentary
		Vertical roller milling (VRM) is novel to magnetite processing but is a technology that is, in its modern form, over 100 years old. It is attractive to Southdown because it is highly energy efficient compared to conventional milling and it is performed dry which halves the water consumption of the project. With thousands of installations worldwide the principles are well developed and, in recent years, VRM has been installed in several hard and abrasive applications. In Australia, VRM technology is used in several cement plants while in mining it was selected for the West Musgrave nickel-copper project in central Australia. The hard rock mining VRM applications have been almost exclusively installed by the chosen VRM vendor, Loesche. Loesche has a mature testing regime to determine plant capabilities and wear performance. Loesche also constructed a dedicated test facility to allow coarse non-magnetic tailings to be rejected from the internal classifier grit stream, an essential aspect for magnetite process plant design. In the proposed Southdown flowsheet, each VRM will grind nearly 1,000 t/h of 85 mm feed to 85 µm P80, performing the roles of both AG milling and Ball milling in the conventional circuit or HPGR and ball mill in the HPGR circuit. <u>Dry rougher magnetic separation</u> Separating a mineral stream using dry magnetic separation is not novel, but its coupling with VRM grinding is. The -1 mm +75 µm grit stream (dry VRM classifier oversize) is normally returned direct to the VRM grinding table for further grinding. To allow dry magnetic separation it is taken outside the VRM and treated using a high strength drum magnet. The non-magnetic stream (up to 40% of the new VRM feed mass) is rejectable tailings while the magnetics is returned to the VRM for additional grinding. This separation system confirmed possible at bench-scale and definitively tested at pilot-scale in the Loesche continuous pilot plant. <u>Rougher sulphide flotation, sulphide thickening and disposal</u> Magnetic iron sulphide (pyrrhotite) exists in problematic quantities in the Southdown magnetite concentrate and without removal the sulphur assay of the magnetite product would make it unattractive to the majority of customers. Being a sulphide mineral, pyrrhotite can be removed by well-established and simple sulphide flotation. Variable results during the test program demonstrated that delays in flotation testwork after the flotation feed material has been ground to the correct size can make pyrrhotite removal a complex and uncertain matter. However, flotation testwork on freshly VRM milled magnetite concentrate demonstrated that in a continuous plant situation pyrrhotite flotation will be a selective and rapid process. It will be effective enough to produce concentrates with sulphur levels low enough to satisfy all customers. Sulphide minerals recovered by flotation will be thickened to recover water (and any residual reagents) and the thickener underflow solids (sulphide tailings) will be stored in a dedicated, lined and permanent storage facility on site.




Criteria	*JORC Guidelines*	Commentary
		Concentrate screening, thickening and temporary storage Site concentrate handling utilises proven technology such as fine grinding in IsaMills and thickening prior to pumping. However, limited space at Albany Port has necessitated site storage of concentrate in a dam-style arrangement. When concentrate is demanded at the port to load a ship the plant can deliver it directly after it is produced, or it can supply stockpiled concentrate through water jet reclamation. To protect the pumps and pipeline and to control pipeline feed slurry properties, it will be necessary to screen and thicken all reclaimed concentrate. Concentrate receival and filtering at Albany Port Concentrate will arrive in Albany via a 110 km pipeline which will also need to manage intermittent water pumping. Percent solids detection on the slurry arriving at the port will allow it to be directed immediately to the filters or to a thickening and water reclaim system which will then deliver slurry to the filters. The system has been designed such that the thickener size is small because it only receives off-specification slurry and a small amount of dirty water. Clean water from the pipeline will be directed to the filtrate tank for pumping back to the Southdown site. Tailings management Tailings is generated both dry and as thickener underflow. Dry tailings accounts for much more than 50% of the total tailings. Rather than dispose of the wet tailings to a dam or to filter it and make it a dry stream, the dry and wet tails streams will be combined in a rotary drum mixer (or agglomerator) to form a conveyable and stackable combined dry tailing. Although some risks exist with such a scheme, it is possible to mitigate against incorrect mixture ratios by mixer feed buffer storage and by having minor emergency (and evaporation) dam storage for excess thickener underflow. If successful, dry intermediate magnetic separation (on the 85 µm VRM product) would increase the proportion of dry tailings to above 90% of all tailings and this will remove all wet/dry tails mixing ratio risk. The moisture of the mixed tailings will then be controlled by adding water. Sulphide minerals recovered by flotation will be stored in a dedicated, lined storage facility on site. **Deleterious elements** All deleterious elements (specifically SiO_2, Al_2O_3, TiO_2, sulphur and phosphorous) are below the levels that will cause any concern to customers. The oxides are removed by magnetic separation and the sulphur by flotation. The phosphorous was already very low in the feed and then most of it was rejected to the non-magnetics. **Oxide ore performance**




Criteria	*JORC Guidelines*	Commentary
		As with all parts of the resource, the oxide ores (POX) have been tested by Davis Tube (DTR) and demonstrated their recovery levels and their ability to generate concentrate grade magnetite. Note that POX will not lose equivalent DTR mass in the plant to pyrrhotite flotation as oxidation of the ore will have eliminated the pyrrhotite. **Recoveries through the plant** Recovery (also called efficiency) is a comparison between the magnetics yield by DTR and the magnetite yield by the plant. The majority of the almost 6% magnetics recovery loss (94% efficiency) in the plant is currently due to the conservative assumption that about 3% of the 6% will be lost with the pyrrhotite flotation concentrate (sulphide tailings). The sulphide tailings is a mix of pyrrhotite and magnetite, both of which are captured in the DTR test yield. The pyrrhotite loss level is inevitable and desirable. The magnetite loss level is variable and is a function of the selectivity of the flotation separation and the use (or otherwise) of cleaners to scavenge magnetite from the floated pyrrhotite. The remaining losses (3%) have been assumed to occur in magnetic separation and is due to fine magnetite locked within silicates and magnetic separation inefficiency. Note that while DTR testing recovers liberated magnetite from a pulverised -75 µm, the rougher and intermediate magnetic separation stages in the plant occur at coarser sizes. **Process design risk summary** The design incudes novel and unusual components such as VRM grinding, dry magnetic separation of grits and dry tailings disposal without filtration. While dry magnetic separation is commonly practiced, this would be the first use of VRM coupled with dry magnetic separation in magnetite. The dry tailings disposal has been configured to take advantage of the current tailings generation processes and for water use minimisation. The disposal process can be further de-risked by conversion of intermediate magnetic separation from wet to dry, but this also introduces dry magnetic separation at an unusually fine size (85 µm F_{80}). **Additional Southdown testwork notes** DTR is carried out on all drill core samples assayed and used for generation of the resource estimate. A total of 14,666 DTR tests have been completed and inform the Resource and Reserve. DTR is in effect a small mimic of a pilot plant that is used for determining the magnetic mass recovery from a small amount of sample ground to a specific size. DTR is the most important test for a magnetite deposit and, combined with x-ray fluorescence (XRF) of the resulting concentrate, generates the weight recovery/magnetic iron, or proportion of the deposit which is magnetite and the likely grade of concentrate at a given grind size. DTR protocol




Criteria	*JORC Guidelines*	Commentary
		The magnetite sampling protocol was designed around a specific metallurgical flowsheet. For Southdown, the following protocol was used for DTR: • Pulverising: – Crush the sample to 100% below 3.35 mm – Separate a sample of approximately 150 g for pulverising – Pulverise the sample for 150 seconds in a ring pulveriser – Wet screen the sample at 75 µm and dry the products – Record the oversize weights – Re-pulverise the oversize for 4 seconds for every 5 g of sample oversize – Repeat the screening (dry) until less than 5 g is above 75 µm – Sample the pulverised product to give a 20 g sample for DTR work – The pulverising procedure will give a nominal P_{80} sizing of 38 µm. • Davis Tube analysis: – Stroke frequency 60 per minute – Stroke length 38 mm – Magnetic field strength 3000 gauss – Tube angle 45° – Water flow rate 540 mL per minute – Washing time 15 minutes. The DT magnetic concentrate sample is released from the glass collection tube then analysed by XRF methods to determine its composition. Head assays of the ore have not been routinely undertaken. 40 tonnes of bulk metallurgical sample was collected in 2010 for the purpose of pilot plant testing of an autogenous milling flowsheet as described in the 2012 FS. 13 tonnes of this material was not used and kept in storage on site for use with the VRM pilot plant testwork in 2021–2023. The 40-tonne sample was collected from five 6” core drillholes and six PQ sized core drillholes from the Western Zone and Central Zone to test the first five years of the mine plan as it was in 2010. In addition, 33 UCS samples and 12 x 50 kg variability samples were taken from the Central Zone to complete coverage from previous sampling of the Western Zone and Eastern Zone to check for variability and ensure the bulk sample was representative.




Criteria	*JORC Guidelines*	Commentary

Before undertaking VRM pilot plant testwork the eleven year old bulk sample was tested to confirm there was no degradation from storage. The ore was then selected, crushed and homogenised then sent as two batches of around 6 tonnes each to the Loesche test facility in Germany. The first sample was used in open circuit to test amenability and optimise the target grind size. The second sample was used in a specially designed closed circuit incorporating grit extraction (grit is internal VRM classifier oversize ranging from 1 mm to 75 µm), dry magnetic separation of the grits, rejection of non-magnetic grits and return of magnetic grits to the VRM for further grinding. Product and tail samples were then sent to the SGA lab in Germany to test the remainder of the flowsheet (intermediate magnetic separation, flotation, fine grinding and final magnetic separation). Subsamples of streams were sent to other labs to confirm results where necessary and characterise product and tails streams.

Plant recovery and specification conformance

The plant efficiency was determined from the metallurgical testwork and design and simulation.

94.1% plant efficiency (recovery of magnetic material as determined by DTR) was achieved and applied, i.e. 1,000 tonnes of ore with a DTR grade of 35% would produce 329 tonnes of iron ore concentrate with 21 tonnes of magnetic iron ore lost to tails streams. A significant part of the 5.9% of lost magnetics is not magnetite but the magnetic iron sulphide pyrrhotite (nominally FeS).

The final concentrate does not contain any deleterious elements that would attract a financial penalty.

The prime contaminant of sulphur in the ore is removed during processing by flotation. Flotation reduces the estimated final sulphur concentration in the product from 0.5% to 0.06%.

The final saleable product is an iron ore concentrate suitable for direct reduction ironmaking (DRI). The final product from testing achieved the following average specification.

Fe (%)	Al_2O_3 (%)	SiO_2 (%)	TiO_2 (%)	P (%)	S (%)	LOI (%)	CaO (%)	MgO (%)
70	1.4	0.9	0.4	0.002	0.06	-3.1	0.06	0.12

The final testing product quality exceeds the Resource and Reserve DTR concentrate qualities for silica, sulphur, phosphorus and carbonates.

The Resource and Reserve are reported with the DTR mass percent across the project life and the elemental concentrations are reported for the DTR concentrate. However, it must be remembered that DTR analysis does not include a sulphur removal step and may be at a different grind P_{80} compared to the pilot testwork.




Criteria	*JORC Guidelines*	Commentary
Environmental	*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.*	**Environmental studies approval and permitting** Environmental studies have been undertaken to assess the potential impact of the project on the various aspects of the environment. These include flora, fauna and vegetation surveys, hydrogeological investigations, air quality modelling, and waste characterisation. All material commonwealth and state primary approvals for the FS 2012 have been secured and will continue to be maintained in good standing, including tailings storage and waste rock dumps, the Cape Riche desalinated water supply option, and the Berth 7 land reclamation and channel dredging option at the Port of Albany. These are summarised in the following table.

Project Area	Act/ Regulations	Government Authority	Approval	Date Approved
Port - Berth 7	EPBC Act 1999	Commonwealth	EPBC 2006/2540	11/06/10 extensions of term approved 16/11/15, 20/10/2020
Port - Berth 7	Environmental Protection (Sea Dumping) Act 1982	Commonwealth	SD2020/3395	10/03/2021
Port - Berth 7	S38, EP Act 1986	WA OEPA	MS846	18/11/2010
			MS1004 (extn of term)	1/05/2015
			MS1193 (extn of term)	21/07/2022
Port – Berth 5, Transhipping	EPBC Act 1999	Commonwealth		
Port – Berth 5, Transhipping	S38, EP Act 1986	WA OEPA		
Mine site, Desalination Plant, Slurry Pipeline, Landside Port and associated Infrastructure	EPBC Act 1999	Commonwealth	2011/6053	30/06/2020
Mine site, Slurry Pipeline, Landside Port and associated Infrastructure	S38, EP Act 1986	WA OEPA	MS816	29/11/2009
			MS987 (extn of term)	24/10/2014
			MS1145 (extn of term)	23/07/2020
MS816 Revision for mine layout, borefields and berth 5 landside facilities	S45C, EP Act 1986	WA OEPA		
2011/6053 Replacement	EPBC Act 1999	Commonwealth		
Desalination Plant	S38, EP Act 1986	WA OEPA	MS904	18/07/2012
			MS1061 (extn of term)	27/09/2017
			MS1227 (extn of term)	1/07/2024
Transmission Line	EPBC Act 1999	Commonwealth	EPBC 2011/6066	16/10/2012
Transmission Line	S38, EP Act 1986	WA OEPA	EPA referral "Not Assessed"	5/09/2011




Criteria	*JORC Guidelines*	Commentary
		While the 2024 FS has been designed within the constraints of the current approvals as far as is possible, some aspects will require new or amended approvals at State and Commonwealth levels. The key changes relate to reduced footprint of the mine site, minor changes to the pipeline footprint determined from the recent studies, the inclusion of borefields as a potential water supply, approval for project facilities to be constructed and operated at Albany Port Berth 5, and transhipping operations in King George Sound. To address these new aspects, a Revised Proposal for MS 816 was lodged in January 2023, and a referral lodged in April 2023 for the transhipping operation by Southern Ports Authority. The revised proposal for MS 816 was developed to include: • Revised mine plan and associated infrastructure layout changes including boundary changes resulting in a Revised Proposal Development Envelope (Mine Site) and associated indicative disturbance footprint • Modification of the intersection of Gnowellen Road and South Coast Highway, sealing of Gnowellen Road and new access points from Gnowellen Road to link with the indicative disturbance footprint • Modified ore processing at mine site • Minor re-alignment of the section of the slurry/return water pipelines connecting to the mine site within a defined development envelope • Addition of a proposed slurry and return water pipelines alternative option at Chester Pass Road within a defined development envelope • Addition of a new slurry emergency storage area, pump station and connecting pipelines within a defined development envelope • Addition of new groundwater supply borefields (Manypeaks and Wellstead South) and associated infrastructure within defined development envelopes • Addition of two options for pipelines along Shearer Road to connect the Wellstead South borefield to the mine site within a defined development envelope • Addition of a new pipeline connecting the Manypeaks borefield to the mine site to be included within existing Approved Proposal slurry and return water pipelines corridor • Amending the water requirement limit currently allocated for the project from 4 GL/a to 12 GL/a to align with the 12 GL/a allowed for in the MS904 approval for the seawater desalination plant and all potential project water supply options • Amending Condition 6-4 (Declared Rare Flora and Protection of Vegetation) • Amending Condition 8-1 of MS 816 (Acid waste rock management)




Criteria	*JORC Guidelines*	Commentary
		• Deleting Condition 8B (Use of recycled water) and replacement with allowance to include multiple water sources including recycled water • Adding ore dewatering, storage and ship loading facilities at Albany Port Berth 5 within a defined Development Envelope to facilitate transhipping from Berth 5 • Administrative change for replacement of figure showing Berth 7 approved footprint to be consistent with that approved under MS 846 • Amending the Approved Proposal's indicative disturbance footprint to encompass all individual footprint elements contained in MS 816 for the mine, slurry pipeline and port elements and additions outlined above • Amending the area (ha) of mine site remnant vegetation clearing to include all Approved and Revised Proposal elements. *Note: The Revised Proposal has a lesser area (3 ha) of native vegetation clearing than the Approved Proposal (Combined Extent). As the 2024 FS progressed, it became apparent that further changes were required to be incorporated into the project description. Grange is in the process of withdrawing the Revised Proposal and recommending to SPA the withdrawal of the related transhipping referral. These will be resubmitted once the range of development options have been assessed in conjunction with a new investment partner, and the project definition finalised. <u>Secondary environmental approvals</u> Key secondary environmental approval requirements that Grange is responsible for obtaining, based on the current project design, are summarised here: • Part V Works approval to construct and licence to operate under Part V of the EP Act • Mining Proposal and Mine Closure Plan under the *Mining Act 1978* • Permits under *Biodiversity Conservation Act 2016*. The schedule for primary and secondary environmental approvals and other project approvals is dependent on securing an investment partner, confirming the project description, completing relevant Environmental Impact Assessments and resubmitting the revised proposal. Secondary approvals will be commenced once sufficient detailed design is completed and are expected to be granted soon after the revised proposal for MS 816 is granted. **Land tenure**




Criteria	*JORC Guidelines*	Commentary
		The following section describes the status and schedule for land tenure for the Southdown Magnetite Project. Land tenure has been a key subject since project inception in 2005, as the development of the mine relies on ancillary infrastructure across a significant extent of real estate. Land required for the project has been identified, and a substantial amount of work has been undertaken to: • Purchase the land for the mine, concentrator and infrastructure • Endeavour to secure options to purchase land adjacent the mine site for potential future use • Develop legal agreements to obtain access to potential borefield properties • Register Easement Deeds for the slurry and return water pipeline. Land tenure matters that remain to be concluded are as follows: • Secure remaining land areas for the slurry pipeline including return water pipeline deviations from existing alignment (specifically access to recycled water treatment plant if required) • Negotiate a lease agreement with the Southern Ports Authority to use Port of Albany land • Secure access to WaterCorp Gunn Road location for potential water and pipeline support facilities • Secure access to proposed borefield properties • Secure land areas to satisfy environmental compliance. **Outstanding environmental compliance** • Ensuring that two houses within the existing mine site noise and dust zone, are not occupied during the life of the mine. • Securing land to replace (offset) areas of habitat which will either be lost or altered as a result of the mine development. • Purchasing of land areas both adjacent to the mine site and over the future orebody to establish additional environmental buffers for the township of Wellstead. • Securing the area of land containing the future orebody (i.e. for operation beyond the current planned life of mine – LOM). • Formalising transmission line land access (by a third-party provider).




<table>
<tr><th>Criteria</th><th>JORC Guidelines</th><th>Commentary</th></tr>
<tr><td>Infrastructure</td><td>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.</td><td>Infrastructure items are well advanced, the following items were costed as part of the 2024 FS.
Roads
Road access to the mine and concentrator from Albany is via the South Coast Highway. This is a sealed, single carriageway highway which connects Albany and Esperance.
Power supply
The mine, concentrator and associated infrastructure have an installed load of 96.8 MW, a maximum demand of 74.7 MW and a running load of 67.2 MW at a power factor of 0.90. The Port facilities have an installed load of 9.7 MW, a maximum demand of 6.2 MW and a running load of 5.6 MW at a power factor of 0.90.
<table>
<tr><th>Site</th><th>Installed</th><th>Running Load</th><th>Load Factor (%)</th><th>Utilisation (%)</th><th>Maximum Demand</th><th>Energy</th></tr>
<tr><th>Units</th><th>MW</th><th>MW</th><th></th><th></th><th>MW</th><th>GWh/y</th></tr>
<tr><td>Wellstead</td><td>96.8</td><td>67.2</td><td>90</td><td>94.4</td><td>74.7</td><td>597.6</td></tr>
<tr><td>Albany</td><td>9.7</td><td>5.6</td><td>90</td><td>72.7</td><td>6.2</td><td>49.6</td></tr>
<tr><td>Total</td><td>106.5</td><td>72.8</td><td>90</td><td>93.5</td><td>80.9</td><td>647.2</td></tr>
</table>
A third-party provider will build, own and operate a new renewable power supply with diesel backup as required. The option of a new transmission line to connect to the grid and associated works from the Western Power (WP) Kojonup Substation to Southdown (at Wellstead) will be considered.
Buildings
The ancillary buildings comprise of a series of modular transportable type construction buildings including the main gate house, control room, crib and ablutions building, administration building, and medical and mine rescue centre.
Camp
Accommodation for construction and permanent personnel is provided on the mine site on Lot 6842.
Sewerage
A single dedicated Sewerage Treatment Plant has been proposed for the mine site to service both the accommodation village and process plant/NPI/mining areas.
Access control and security
An access control and security system for the project is included.</td></tr>
</table>




Criteria	*JORC Guidelines*	Commentary
		Tailings storage Sulphide minerals recovered by flotation will be stored in a dedicated, lined storage facility on site. All other tails will be converted to an agglomerated tail (wet tail and dry grits combined). These will be transported by overland conveyor (and under Gnowellen road) to a dedicated AT storage facility. **Water** The continued use of dry grinding in the process plant maintains the makeup water requirement at 5 GL/yr. All water infrastructure considered: • Mine dewatering • Surface water • Borefields • Groundwater Treatment Plant • Water ponds and construction water • Water quality requirements were identified in the 2024 FS. **Port site process facilities description** The port site facilities consist of the following key areas: • Concentrate receiving • Concentrate filtration • Product conveying and stacking • Stockpile • Reclaiming, conveying and ship loading. The proposed pipeline transportation system for concentrate and return water includes: • Mine site facility, which includes: – Agitated slurry storage tanks – Charge pump system – Mine site pump station for concentrate slurry with positive displacement piston diaphragm pumps – PIG facility. • Pipeline system, which includes: – Concentrate slurry pipeline (350 mm nominal diameter, 110.3 km)




Criteria	*JORC Guidelines*	Commentary
		– Return water pipeline (70 km of API 5L X 65 Steel Pipe, 450 mm diameter and 40 km of 560 mm OD high-density polyethylene) – One intermediate pressure monitoring station monitors both the pipelines operation located at the raw water pump station – Port side valve station – PIG facility • Terminal return water system, which includes: – Return water storage tank – Return water pump station with multistage centrifugal pumps – PIG facility. • Concentrate Pipeline SCADA (Supervisory Control and Data Acquisition) System and instrumentation, including a Pipeline Advisor TM and Leak Detection System. • Fibre Optic Telecommunication System Concentrate Pipeline SCADA. The concentrate slurry pipeline and the return water pipeline are designed to have adequate pipe wall thicknesses to withstand the hydraulic gradient, as well as the static head when the lines are shutdown. **Port and marine** This project includes an export facility for 5 Mt/a of magnetite concentrate at the Albany Port, located on Lot 60 and Lot 61 Princess Royal Drive, subject to commercial arrangements with SPA. It incorporates the addition of a new No. 5 Berth, a filtration plant, a concentrate stockpile shed and a shipping dispatch facility. Product export will use a self-propelled, self-unloading transhipping shuttle vessel from Berth 5 to ocean going vessels at anchorages in King George Sound.
Costs	*The derivation of, or assumptions made, regarding projected capital costs in the study.* *The methodology used to estimate operating costs.* *Allowances made for the content of deleterious elements.*	The operating and capital cost data for this study has come from the following sources: Mining costs from Minero using 2024 quotations as a basis, on an operating ownership lease estimate, with costs all expressed as operating costs. Capital, processing costs and port costs as complied by Hatch in 2022 and 2023. Hatch costs operating and capital cost estimates were compiled based on 2023 industry quotation cost estimates and escalated for 2024 pricing including crush, mill, magnetic separation, removal of sulphides by flotation and infrastructure. **Operating costs (real 2024)**




Criteria	*JORC Guidelines*	Commentary

The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products.

The source of exchange rates used in the study.

Derivation of transportation charges.

The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.

The allowances made or royalties payable, both government and private.

Opex	Total project cost (A$ million)	A$ million per annum	A$/t concentrate	% Total
Mining costs	5,643	201.5	42.0	44%
Concentrator	3,436	122.7	25.6	27%
Port	206	7.4	1.5	2%
Transhipment	1,212	43.2	9.0	9%
Overheads	1,287	45.9	9.6	10%
Total ex-Albany	**11,784**	**421**	**87.7**	--
Royalties	1,208	43	9.0	9%
Mining Rehabilitation Fund	9	0.3	0.1	0%
Total	**13,001**	**464**	**96.7**	**100%**

Provision has been made for 5% state royalties on revenues from sales of concentrate.

The total capital cost estimate is shown below.

Capital costs

Description	Total cost (A$M)
Mine	30
Concentrator	935
Pipeline	307
Filtration and storage (Port of Albany)	153
Facilities and services	154
Albany	70
Miscellaneous, allowances and provisional sums	243
Subtotal	**1,891**
EPCM cost	197
Owners cost	39
Contingency	212
Total project	**2,339**




Criteria	*JORC Guidelines*	Commentary
Revenue factors	*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.* *The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.*	The forecast iron ore price for the Southdown Project was supplied by market experts. The project has received expert advice including supply demand and price advice from CRUGroup, Fastmarkets and MySteel for the Southdown concentrate. The price forecast for the Southdown product is built on a value in use model starting from the 65% Fe fines CFR price to Chinese ports. To the 65% price is added an iron premium for units of iron above 65% and a premium for magnetite concentrate. The price is built up from supply and demand fundamentals. The average price per tonne of concentrate produced over the LOM is A$175/t.
Market assessment	*The demand, supply and stock situation for the particular commodity, consumption trends assessment and factors likely to affect supply and demand into the future.* *A customer and competitor analysis along with the identification of likely market windows for the product.* *Price and volume forecasts and the basis for these forecasts.* *For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.*	The product has a very high iron grade at 70% Fe, with very low impurities which does not attract penalties. The demand for high grade iron ore is increasing as a means for steel companies to reduce carbon emissions. The high grade of the product makes it highly attractive for direct reduction steel making. Currently, iron ore products with an iron content greater than 66%, into which Southdown falls, make up only 3% of the global seaborne iron ore supply suitable for direct reduction. It is forecast that in order for the steel industry to decarbonise by 2050, 50–60% of primary steel making needs to be sourced by direct reduction and electric arc processes. Sojitz Corporation has a retained right that allows the purchase of up to 30% of production at benchmark prices with consideration of product quality and value in use at the point of sale. Shagang Group has a right to purchase up to 56% of production at benchmark prices with consideration of product quality and value in use at the point of sale. Based on Grange's experience in iron ore marketing for Savage River, it is currently expected that these two entities typically exercise their rights and the remaining 14% would be sold on the spot market or under short-term contracts.
Economic	*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.* *NPV ranges and sensitivity to variations in the significant assumptions and inputs.*	Grange developed a project cash flow model for the 34-year project. The inputs for the cashflow model were sourced from a feasibility study completed over 2022–2023 with updates made in 2024. The cost data has been obtained from a range of sources including direct quotation, engineering estimates, benchmarks and market data. Escalation in line with producer price indexes from the ABS has been used to ensure input estimates are based on a 2024 real basis. The following key financial inputs were applied: • 2.5% inflation in line with mid RBA target




Criteria	*JORC Guidelines*	Commentary
		• 10% discount rate in line with WACC advice for the project with an internal rate of return (IRR) target of 12% • 0.70 A$:US$ exchange rate • Fuel price of A$0.80/L delivered to site inclusive of rebates • A$0.13/kWh price for electricity base on Power Purchase Agreement (PPA) discussions. Mining technical services (e.g. geologists, engineers, surveyors): • Technical services are included within salaried mining costs, and salaried processing costs. Average cost per year is A$15.9 million (real). • Costs were built up based on an organisation structure, number of positions and annualised salaries. Grade control: • Grade control is planned to be conducted using blast hole sampling for production control. This is based on the orebody grade continuity confidence level in the resource and Savage River experience. No additional reverse circulation infill drilling is expected to be required or included in the financial model. Closure costs (including dismantling and removal of mining infrastructure): • A$552 million in nominal costs are allocated for rehabilitation over a three-year period at the end of the project • In addition, $9.2 million is contributed into the WA rehabilitation fund during the project • The Southdown Mineral Resources continues further to the east and future extension might be possible prior to closure. Flight and accommodation costs: • The project assumes the majority of the workforce will be employed on drive-in/drive-out basis with accommodation and messing only being provided to those on shift • Labour supply in the local area was assessed and this is deemed practical with the exception of some specialised or technical roles • Accommodation costs of $2.4 million per annum are included in the financial model and economic assessment.




Criteria	*JORC Guidelines*	Commentary

Financial modelling was completed by Grange. Snowden Optiro is reliant on the metal price projections advised by Grange. Snowden Optiro is not expert in the forecasting of metal prices, and other than to draw attention to the sensitivity of the project to these projections, is not able to comment on the risk that these projections will change over time. However, it is noted Grange has taken into consideration data from the leading industry bodies for the magnetite market including MySteel, Cru, Platts and Fastmarkets.

The production targets are based on 100% Probable Ore Reserves. The key parameters and financial outcomes for the FS are set out below:

Summary of key parameters from FS Update financial model	
LOM production	28 years
Life of project (incl. construction and rehabilitation)	34 years
LOM ore mined	412 Mt
LOM waste mined	863 Mt
LOM strip ratio (waste t : ore t)	2.1
Average plant feed rate	14.7 Mt/a
Average total iron in concentrate	70% Fe
Average total DTR recovery (overall)	94% Fe
Average concentrate production (LOM)	4.8 Mt/a
Average realised product price (FOB real 2024)	A$175/t product (all)
Foreign exchange rate (A$/US$)	0.7
Construction capital cost (including 10% contingency)	A$2,339 million
Pre production Operating costs	A$56 million
Average LOM all-in operating cost	A$117/t product
LOM free cashflow (nominal)	A$10,148 million
Payback period from construction	8.3 years
Net present value (NPV) (10% discount rate, pre-tax)	A$1,659 million
IRR (pre-tax)	18.1%




<table>
<tr><th>Criteria</th><th>JORC Guidelines</th><th>Commentary</th></tr>
<tr><td></td><td></td><td>
The valuation was completed with a nominal discount rate of 10%. Producing a value of $A1,659million. The overall valuation for the project is shown at alternative larger and smaller discount rates below.
<table>
<tr><th></th><th>6%</th><th>8%</th><th>10%</th><th>12%</th><th>14%</th></tr>
<tr><td>Discount rate</td><td>A$3,997 M</td><td>A$2,599 M</td><td>A$1,659 M</td><td>A$1,013M</td><td>A$560M</td></tr>
</table>
A sensitivity analysis on the pre-tax NPV is provided below. The project is most sensitive to the iron ore price and the exchange rate. The project is about equally sensitive to initial construction capital cost and ongoing operational cost.
<table>
<tr><th>Variable</th><th>-20%</th><th>-10%</th><th>0%</th><th>10%</th><th>20%</th></tr>
<tr><td>Iron ore price</td><td>A$214M</td><td>A$936M</td><td>A$1,659M</td><td>A$2,381M</td><td>A$3,104M</td></tr>
<tr><td>Exchange rate</td><td>A$3,479M</td><td>A$2,468M</td><td>A$1,659M</td><td>A$997M</td><td>A$445M</td></tr>
<tr><td>Construction cost</td><td>A$2,390M</td><td>A$2,024M</td><td>A$1,659M</td><td>A$1,293M</td><td>A$928M</td></tr>
<tr><td>Opex</td><td>A$2,388M</td><td>A$2,023M</td><td>A$1,659M</td><td>A$1,294M</td><td>A$929M</td></tr>
</table>
</td></tr>
<tr><td>Social</td><td>The status of agreements with key stakeholders and matters leading to social licence to operate.</td><td>
Community relations
The Stakeholder and Community Engagement Strategy (the Engagement Strategy) outlines the process for engaging with stakeholders and the community about the change in scope to the proposed Southdown Magnetite Project (the Project) as part of the environmental approvals process and other project changes.
Since 2005, the Project has been engaging with stakeholders potentially affected or interested in the Project and will continue to do so throughout the life of the Project. The focus of the engagement strategy is to identify and build strong relationships with key stakeholders and community members interested in, or affected by, the Project. This has been achieved by maintaining regular contact with stakeholders and the community, keeping open lines of communication, such as having a dedicated project office in Albany, and attending various local and regional forums.
Stakeholder identification
The stakeholder and community members with the highest level of interest in the Project have been identified as:
• City of Albany, Shire of Jerramungup and other surrounding regional communities
• Community members in the immediate surrounds of the proposed mine site and other project components (slurry and return water pipeline, bore fields, powerline, etc.)
</td></tr>
</table>




Criteria	*JORC Guidelines*	Commentary
		• The population within the local shires who may benefit from economic development opportunities and/or be impacted by the construction and operations of the Project • Traditional Owner groups with an interest in native title and cultural heritage • Environmental and other special interest groups with an interest in the environmental impacts of the Project • Regulators and other state government agencies • Shareholders interested in maintaining the reputation of the organisation • Local and regional media. **Engagement activities** The key activities for engaging with stakeholders and the community have involved: • Project office in Albany – a dedicated Community Liaison Manager is located within the Grange Albany project office for the duration of the Project to allow stakeholders and community members to find out more about the Project, ask questions or discuss any issues or concerns. • Landowner meetings and communications – keep landowners informed of the Project, provide opportunities for asking questions or discussing any issues or concerns and negotiate land access and agreements for project infrastructure. • Southern Ports meetings – Regular meetings held to coordinate design activities, maintain existing approvals and support the engagement for the Project. • Stakeholder meetings – meetings with key government agencies to obtain input to the project design, mine closure and environmental approvals. • Great Southern Development Commission Working Group meetings – the Great Southern Development Commission hosts the Southdown Working Group (SDWG), a group of government agencies and other key stakeholders interested in the Project. The SDWG seeks to facilitate the exchange of information to allow for expedient development of the several project interface and regulatory issues. • Community and special interest group meetings – meet with local community and special interest groups to discuss environmental aspects of the Project and mine closure. • Information sessions – three drop-in information sessions were held within the local communities most impacted by the project (Wellstead, Manypeaks, Albany) to provide an update on the Project and an opportunity for asking questions or discussing any concerns or opportunities.




Criteria	*JORC Guidelines*	Commentary
		• Community events and technical forums – participate in technical and community events to discuss the Project and provide people with an opportunity to ask questions or discuss any issues, concerns and opportunities. • Communications – provide information about the Project via multiple channels including the corporate website, information sheets, BBQ cards, and local media including Wellstead Whisper. **Native Title and heritage** Continue Traditional Owner engagement regarding heritage – engage with Wagyl Kaip and Southern Noongar Corporation (WKSN) and local Traditional Owners to manage impacts on Aboriginal heritage throughout the project lifecycle. An updated Heritage Agreement is currently being developed by the Wagyl Kaip and Southern Noongar Corporation and will replace the previous agreements in place and will cover the Southdown tenements associated with the Southdown Project. Heritage surveys have been completed on all areas of the project footprint. Some artifact sites have been identified and Section 18 Permits to Disturb granted. Some sites have already been partially excavated. **Consultation** Consultation with key local stakeholders including neighbouring farm owners, indigenous groups, government agencies will evolve as the project develops.
Classification	*The basis for the classification of the Ore Reserves into varying confidence categories.* *Whether the result appropriately reflects the Competent Person's view of the deposit.* *The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).*	In-pit Measured and Indicated Mineral Resources were used as the basis of Probable Ore Reserve, estimated using the guidelines of the JORC Code (2012). No Proved Ore Reserves were estimated due to uncertainty with contracts, uncertainty about blasting effects on dilution and lack of reconciliation as the site is in pre-production. Dewatering and hydrology impacts for the AT storage facility will need updating before execution. The result of the classification reflects the Competent Person's view of the deposit. No Inferred Resources is included in the Ore Reserve estimate. Measured Resources account for 95% of the Ore Reserve with 5% being Indicated.
Other	*To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:* • *Any identified material naturally occurring risks.*	• Non-environmental approvals. The following are other significant approvals that will be progressed in the next phase, once sufficient engineering is completed: – Port Authorities Act 1999 (WA) – Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974 (WA) – Health Act (Miscellaneous Provisions) 1911 (WA) (Health Act)




Criteria	*JORC Guidelines*	Commentary
	• *The status of material legal agreements and marketing arrangements.* • *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 Prefeasibility 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.*	– Planning and Development Act 2005 (WA) – City of Albany – Local Planning Scheme No 1 (LPS) – Various Dangerous Goods permits – Various other permits required under different legislation. • Aboriginal Heritage – the Commonwealth Native Title Act 1993, Aboriginal Heritage Act 1972 (WA) is the relevant legislation which govern indigenous culture and land rights in Western Australia. Engagement with local Traditional Owner groups has been ongoing since 2005, with heritage surveys ongoing as required to assess changes to the project footprint. • Noongar Standard Heritage Agreements are in place for the Project, with an updated standard agreement under development which will be reviewed and entered into once available. • The South West Native Title Settlement has resolved all Native Title matters within the project area. • Acid rock drainage – extensive sampling has been undertaken with static and kinetic testing completed. Approximately 4% of waste rock is expected to be low-capacity potentially acid forming (PAF). This material will be co-disposed within the waste rock dump and is expected to be neutralised by the other waste rock with appropriate cover design. Further acid rock drainage testwork will be ongoing to support the development of the Acid Rock Drainage Management Plan. • Fibrous minerals – a single isolated sample of a fibrous mineral (Anthophyllite) has been identified in drill core, the only sample identified within over 100,000 m of drilling. Samples were taken for the pilot plant metallurgical testwork with trace fibres identified in some samples of the feed material. The sample was cleared by independent sampling by German customs as requiring no further management than standard dust control. No fibres were identified in the product or tails samples produced by the testwork. The presence of fibrous minerals is considered to be very minimal but will be monitored and managed through the Dust Management Plan.
Audits or reviews	*The results of any audits or reviews of Ore Reserve estimates.*	There have not been external audits or reviews of the 2024 FS. Pit optimisation, design and schedule as developed for the Southdown Feasibility Mining Study were reviewed internally by Snowden Optiro.




Criteria	*JORC Guidelines*	Commentary
Relative accuracy/ confidence	*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.* *The statement should specify whether 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.* *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.* *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.*	The capital cost estimates in this study relating to mining, processing and cost performance are underpinned by a comprehensive FS which has been assessed to a Class 3 estimate accuracy with global accuracy of +16% and -12% at the 80% confidence range for estimates completed by Hatch during 2022 and 2023. Direct mining costs are nominally ±15% accuracy. Factors that could affect the accuracy of the Ore Reserve are related to the project risks assessed as "high": • Iron ore price • Exchange rate. The Ore Reserve is supported by the current 2024 Southdown Project FS Update Report being compiled by Grange and other consultants, with work completed by Hatch, Wood plc, GHD, ATC Williams, Snowden Optiro, Mining Planning Solutions, and Minero. The Competent Person's opinion of the Ore Reserve is that the classification of Probable is reasonable, based on the FS outcomes reviewed by the Competent Persons. The project is in development and no production reconciliation available.