# DFS DELIVERS COMPELLING ECONOMICS FOR CABINDA PHOSPHATE PROJECT

**ASX: MNB | 17 OCTOBER 2022**



## HIGHLIGHTS

Cabinda Phosphate Project Definitive Feasibility Study (DFS) positions Minbos to become a high-margin producer of Beneficiated Phosphate Products (BPR) into one of the most prospective farming markets globally.

| Scenario | Spot Price Case (85%) | | | Base-Price Case (85%) | | |
|---|---|---|---|---|---|---|
| Discount Rate | NPV $USM | IRR | PAYBACK | NPV $USM | IRR | PAYBACK |
| (REAL) | (POST TAX) | (POST TAX) | | (POST TAX) | (POST TAX) | |
| 10% | 399.4 | 61% | 3.6yrs | 203.2 | 39% | 4.8yrs |

Notes: The BPR product price is derived from the price of Triple Superphosphate (origin Tunisia, FOB) of which the current price quoted by the World Bank is the August 2022 price of USD703.75/t. This derives a BPR spot price of USD 495.84/t.

## Key Economics (85% ownership)

**Project NPV**

- 100%-ownership: **Spot-Price Case Post-Tax $NPV_{10}$ of US$471 million and 66% IRR**, underpinned by Base Case assumptions.
- 85%-ownership: **Spot-Price Case Post-Tax $NPV_{10}$ of US$399 million and 61% IRR,** underpinned by Base Case assumptions (Minbos will have an 85% ownership interest in the project, with the other 15% held by local partners).
- The current market for fertilizers has potentially been altered fundamentally by the decarbonisation of global energy markets - a trend that appeared in both energy and fertilizer markets well before the Ukraine invasion.
- 85%-ownership: **Base-Case Post-Tax $NPV_{10}$ of US$203 million and 39% IRR**, underpinned by the 15-year average price for bulk Triple Super Phosphate (TSP).
- Compelling low-CAPEX/high-NPV delivers a clear pathway to project financing with CAPEX of US$48.5 million remaining and the Project only requiring further funding of US$40.0 million, after allocation of existing cash and including working capital requirements.
- Plant capacity up to 187,500tpa in a one plant scenario, expanding to two plants in supporting a 20-year project life, which will deliver project gross revenues over US$1.4B.
- Maiden Ore Reserve (JORC 2012) for the Cácata Phosphate Mine, totalling 4.72 Mt at 30.1% $P_2O_5$ of Proven and Probable Ore Reserves.
- High phosphate grade, favourable local soil conditions and no local competition should enable Minbos to produce a high-quality/low-cost beneficiated phosphate fertilizer using simple drum processing.
- The Angolan Government, Development Finance Institutions, and major food processors have committed more than US$1 billion to programs and initiatives to address a 2Mtpa shortfall in grain and oil seed production via the 3 million smallholder farmers that comprise our initial target market.
- First production expected Q4 2023, with fabrication of key major equipment from FEECO now completed.
- Key consultants to the DFS include DRA Global, Orelogy, SRK Consulting, FEECO Inc, EPC Engenharia, HCV Africa, Grupo Simples and the International Fertilizer Development Center (IFDC).

**Minbos Resources Limited**
ABN 93 141 175 493
T: +61 8 6270 4610 E: info@minbos.com W: www.minbos.com
Suite 1, 245 Churchill Avenue, Subiaco WA 6008

## Commenting on the DFS
## CEO Lindsay Reed

"Supported by a long mine life, globally important and high-margin product and a market hungry for fertilizer, the DFS demonstrates that the Cabinda Phosphate Project has robust economics, with relatively low capex requirements, putting Minbos on a pathway to near term production.

Our fertilizer strategy has been developed following more than five seasons of greenhouse and field trials and supported by a strong and sustained commitment to customer engagement which has broadened the market opportunity to nitrogen fertilizers and key micronutrients. Work carried out over the past 24 months has Minbos strongly positioned to capitalise on the fertilizer opportunities in new markets regionally, as well as new commodities and mining explosives.

Importantly, I would like to thank the Government of Angola. They have entrusted a multi-generational and nationally important asset to Minbos. Their support of our vision to combine research, innovative market systems, strategic partnerships and our fertilizer to grow the agricultural market from the bottom up has been instrumental.

The Cabinda Phosphate Project is just the start of the journey for Minbos in Angola, with the Company now making numerous investments across its Green Ammonia Project, soil carbon sequestration and other innovations in the fertilizer space.

Building a country's food production capacity from the bottom up via Minbos' plans provides major benefits to the nation, its people and its soils through better nutrition. Minbos' phosphate and nitrogen projects will substantially increase Angola's food production, and eventually lead to an exportable surplus of agricultural produce.

On behalf of the Board, I'd like to thank all our contractors and study partners who have delivered a comprehensive study in what was a challenging time, impacted by COVID and the inability to travel to Angola."

## KEY RESULTS

Production forecast to commence in Q4 2023 with open pit mining, crushing, drying and packaging. Key project outcomes including economics and mining are shown in Table 1.

| PHYSICALS | UNIT | RESULT |
|---|---|---|
| Project Life (Base-case) | Years | 20 |
| Plant Capacity (One Plant Capacity) | ktpa | 187.5 |
| Average head grade | P2O5 | 30.1% |
| Spot-case fertilizer production | ktpa | 236 |
| Base-case fertilizer production | ktpa | 236 |
| Spot-Case Fertilizer sales | ktpa | 236 |
| Base-Case Fertilizer sales | ktpa | 236 |
| **PROJECT FINANCIALS** | **UNIT** | **RESULT** |
| Spot-case NPV10 (Post-tax) | US$M | 399.4 |
| Base-case NPV10 (Post-tax) | US$M | 203.2 |
| Spot-case IRR (Post tax) | % | 61 |
| Base-case IRR (Post tax) | % | 39 |
| Spot-case post-tax payback period | years | 3.6 |
| Base-case post-tax payback period | years | 4.8 |
| Spot-case average annual EBITDA | US$M | 95 |
| Base-case average annual EBITDA | US$M | 55 |

**Table 1: Key Project Outcomes**

### Marketing

The World Bank recognises Angola as a potential agricultural powerhouse of Africa. Historically, Angola was a top 10 producer of several agricultural commodities and a leader in hemp and coffee. Its agricultural sector has been decimated over the last 50 years by a disruptive end to colonial rule, a 27-year civil war and a 20-year oil boom outcompeting other sectors for capital assets.

Angola has 35 million hectares of arable land of which only 10% is currently cultivated and most of that by smallholder farmers using little or no fertilizer. Yields in Angola are amongst the lowest in Africa despite suitable soils, temperate climate, high altitude, and high rainfall.

The Government of Angola with the support of Development Finance Institutions such as the World Bank, the African Development Bank, the IFC and major food processing groups, have already committed more than a billion dollars to programs addressing the 2 million tonne per annum shortfall in grain and oil seed production in Angola, specifically through its 3 million smallholder farmers to diversify its economy and drive food security.

The phosphate product to be produced from the Cabinda Phosphate Project (Cabinda Phosphate Rock) is a medium-low reactive rock which has been shown to work as a direct application product as a finely ground form to crops such as maize, beans and soybean grown in acid soils with a pH<5.5 that enjoy a high rainfall, consquentally The Cabinda Phosphate Rock is ideally suited to the highland areas of Angola and a perfect fit with the existing development programs.

### Financing

In July 2022, the Company announced it had completed a A$25m placement from a syndicate of investors that included an entity controlled by the Chairman of the world's largest Battery Anode Producer. The Placement funds were paired with a Non-Binding Debt Term Sheet for US $25 million.

Backed by the clear tailwinds for Angolan agriculture investment and requiring only a further funding US$40.0 million to complete construction and provide initial working capital.

The Company believes it is well positioned to fully fund the Cabinda Phosphate Project into production no later than H2 2023.

The environmental and social management planning and supporting impact assessments are aligned with applicable Angolan legislation, International Finance Corporation ('IFC') Performance Standards and the Equator Principles.

## Project Structure

Minbos holds 100% interest In the Mining Investment Contract and Mining Licence for the Cácata Phosphate Deposit. It is establishing the following three company structure for the Project:

1. Angolan mining company that will operate the Cácata Phosphate Mine, and for which the investment is governed by the Angolan Mining Code and the Mining Investment Contract with MIREMPET (Ministério dos Recursos Minerais, Petróleo e Gás or the Ministry of Mineral Resources, Petroleum and Gas).

2. Angolan fertilizer production and distribution company that will operate the Cabinda Granulation Plant, and for which the investment is governed by the Private Investment Contract with AIPEX (Agencia de Investimento Privado e Promoção das Exportações de Angola or the Agency for Private Investment and Promotion of Angolan Exports)

3. Mauritian parent company of both the Angolan companies, a wholly owned subsidiary of Minbos Resources Ltd and the Special Purpose Vehicle (SPV) for the project.

The Mauritian company, Phobos Ltd, will hold an 85% ownership of the two Angolan companies. The 15% minority interest in both companies will be held by the same three strategic Angolan shareholders. Figure 1 presents the Project Structure:

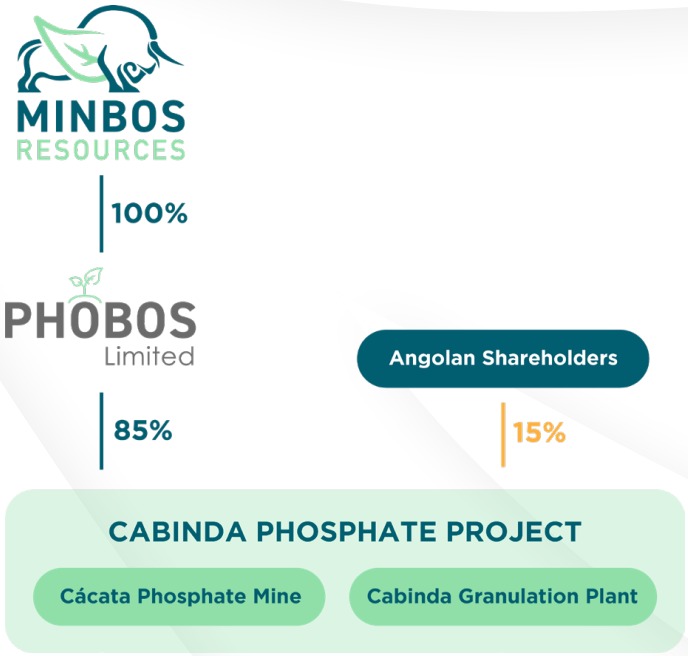



**Figure 1: Cabinda Phosphate Project, Minbos interests and structure.**

The cash flow projections used for the Discounted Cash Flow valuation are those of Phobos Ltd and therefore represent cash flows after Angolan taxes and distributions to Angolan shareholders. The NPV of the Project under 100% ownership are shown in Table 2.

**Table 2: Cash flows in 100% ownership scenario**

| Scenario | Spot Price Case (85%) | | | Base-Price Case (85%) | | |
|---|---|---|---|---|---|---|
| Discount Rate | NPV $USM | IRR | PAYBACK | NPV $USM | IRR | PAYBACK |
| (REAL) | (POST TAX) | (POST TAX) | | (POST TAX) | (POST TAX) | |
| 10% | 471.6 | 66% | 3.5yrs | 240.8 | 41% | 4.8yrs |

**Minbos Resources Limited**
ABN 93 141 175 493
T: +61 8 6270 4610 E: info@minbos.com W: www.minbos.com
Suite 1, 245 Churchill Avenue, Subiaco WA 6008

## Cácata Phosphate Deposit

The Cácata phosphate deposit and the proposed plant site are located in the Cabinda Province of Angola, which together with the Cabinda Granulation Plant, forms the Cabinda Phosphate Project.

- Cácata has a total Mineral Resource of 8.41Mt at 29.6% $P_2O_5$, including a Measured and Indicated Resource of 6.96Mt at 29.7% $P_2O_5$.
- Mineralisation at Cácata varies within the sedimentary layers from very high-grade gravels with coprolites, pellets, teeth, and bones to silty fine grained phosphorite low grade zones and is preserved in a narrow graben ~4.5km-long and 400m wide.
- The Cácata Mineral Resource Estimate was updated by SRK in 2021 to account for an updated geological interpretation.
- SRK Consulting evaluated the potential for the Cácata Project to produce a direct application phosphate fertiliser and concluded that there is sufficient evidence to support the condition of Reasonable Prospect for Eventual Economic Extraction (RPEEE) for the Cácata Project to produce a direct application phosphate fertiliser. SRK also reviewed the outputs of the updated pit optimisation exercise and established that there has been no material difference to the reported quantities and grades presented in the 2021 Mineral Resource statement, and therefore does not propose any adjustments to be necessary to accommodate this alternative product route.

## Cácata Maiden Ore Reserves

- The Cácata Phosphate Mine Maiden Ore Reserve (JORC 2012) statement totals 4.72 Mt at 30.1% $P_2O_5$ of Proven and Probable Ore Reserves (Table 3).
- Material mined consists of loosely consolidated sedimentary material and gravels, which will be “free-dig” and not require blasting.
- Mine life of 19 years with an average strip ratio of 3.2.
- The Mine Plan supporting the Ore Reserve is based on open-pit mine using a conventional truck and shovel mining methodology.
- There are Inferred Resources at Cácata along strike to the current Ore Reserve, which have the potential to be converted to the Ore Reserve through further work and thereby extend the project’s mine life.
- An open pit optimisation was completed, which formed the basis of the Cácata mine design and assumptions to Ore Reserve. Plant production assumptions for the optimisation were based on a 125 ktpa BPR (2-shifts) production rate for Year 1 to 3, a 187.5 ktpa BPR (3-shifts) production rate in Year 4 to 8 and expanding to 375 ktpa BPR from Year 9.
- A skin approach was used on the basis of accepting ore loss to minimise dilution. Given the low bench heigh (2.5m) and small excavator size (max. 100t) a global mining loss of approximately 6% was calculated with nil dilution.

| Reserve Classification | kt | $P_2O_5$% |
|---|---|---|
| Proven | 1,172.6 | 30.5 |
| Probable | 3,543.9 | 30.0 |
| **Total (Proven + Probable)** | **4,716.5** | **30.1** |
| Waste | 15,136.2 | |
| Total Material | 19,852.7 | |
| Strip Ratio | 3.2 | |

**Table 3: Cácata Phosphate Mine Ore Reserve Statement as at September 2022**

This Ore Reserve was estimated by Orelogy Consulting Pty Ltd in conjunction with mining studies for the Cabinda Phosphate Project Definitive Feasibility Study (DFS). It is derived from the updated Mineral Resource for Cácata as announced in November 2021.

Proven Ore Reserves are based on the Project's Measured Resources and Probable Ore Reserves are based on Indicated Resources.

Full details (such as inputs and modifying factors) regarding the Ore Reserves calculation are available in Chapter 9 of the DFS summary report, which is included as part of this announcement.

**Competent Person's Statement**

The Competent Person with responsibility for the Mineral Resources reported in this announcement is Mrs Kathleen Body, Pr. Sci. Nat, who is registered as a Professional Natural Scientist with the South African Council for Natural Scientific Professions ("SACNASP"). She is an Associate Resource Geologist with SRK Consulting (UK) Limited and the Director and a Principal Consultant of Red Bush Analytics. Mrs Body was a fulltime employee of Coffey Mining at the time the original Mineral Resource estimation was completed in 2013. Mrs Body has 27 years' experience in the mining industry and has sufficient experience which is relevant to the style of mineralization and type of deposit under consideration and to the activity which she is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Mineral Reserves. Kathleen Body consents to the inclusion in the announcement of the matters based on her information in the form and context in which it appears.

Information in this announcement relating to Mineral Resources is extracted from the ASX release dated 21 November 2021. Minbos Resources Limited confirms that it is not aware of any new information or data that materially affects the information included in this announcement and that all material assumptions and technical parameters underpinning the Mineral Resource continue to apply and have not materially changed. Minbos Resources Limited confirms that the form and context in which the Competent Persons' findings are presented in this announcement have not been materially modified from the original market announcement.

The scientific and technical information in this announcement that relates to Ore Reserves estimates for the Project is based on information compiled by Mr Ross Cheyne, a Principal Consultant of Orelogy Consulting Pty Ltd. Mr Cheyne is a Fellow of the Australasian Institute of Mining and Metallurgy (AusIMM). Mr Cheyne 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 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Cheyne consents to the inclusion in the announcement of the matters related to the Ore Reserve estimate in the form and context in which it appears.

**Forward Looking Statements**

Statements contained in this release, particularly those regarding possible or assumed future performance, revenue, costs, dividends, production levels or rates, prices or potential growth of Minbos Limited, are, or may be, forward looking statements. Such statements relate to future events and expectations and, as such, involve known and unknown risks and uncertainties. Actual results and developments may differ materially from those expressed or implied by these forward-looking statements depending on a variety of factors.



## Definitive Feasibility Study
## Delivers Compelling Economics for

# CABINDA PHOSPHATE PROJECT

MINBOS RESOURCES

17 October 2022

Executive Summary for
ASX Release

# EXECUTIVE SUMMARY

## 1 INTRODUCTION

Minbos Resources Limited (ASX: MNB) ('Minbos' or the 'Company') is pleased to announce the results of the Definitive Feasibility Study ('DFS') for its Cabinda Phosphate Project, which includes the Cácata Phosphate Deposit (Mining) and the Futila Fertilizer Plant (Production), both located in Cabinda, northwest Angola.

The results demonstrate that the Cabinda Phosphate Project has strong margins with a significant immediate-term sales opportunity. The DFS reflects Minbos positioning itself as one of the very few local producers of fertilizer on the west coast of middle-Africa.

## 2 TERMS OF REFERENCE

Minbos Resources Limited is a public company listed on the Australian Securities Exchange (ASX) with industrial minerals' interests in Angola. Minbos has invested significantly on phosphate exploration and feasibility studies in the Congo Basin (Angola and the Democratic Republic of Congo).

The overall objective of this DFS is to further define the Project and optimise its value. This DFS incorporates recent granulation/beneficiation test work, plant design and a staged project production scale. In addition, further work has been undertaken in the areas of geotechnical, environmental studies, detail engineering and procurement, allowing for definitive designs and cost estimates.

Key experts/consultants relied on for the DFS include:

| | |
|---|---|
| DRA - | Principal Engineer: Process plant design and costing (excluding FEECO package) including infrastructure for Granulation Plant |
| IFDC - | Fertiliser trials, granulation & beneficiation pilot testing, process design inputs, marketing studies |
| FEECO - | Major plant equipment design and supply |
| Mintek - | Material Characterisation |
| SRK - | Mineral Resource Statement (JORC 2012) |
| Orelogy/Majesso - | Pit optimisation, mine design, scheduling, Reserve Statement (JORC 2012) and contract mining cost estimates. |
| GRD Engenharia - | Geotechnical studies on Plant site |
| HCV Africa - | Environmental baseline and social studies, EISA's |
| Grupo Simples - | Environmental Impact Study (EIS) and Waste Management Plan (WMP) |
| EPC Engenharia - | Detail design, procurement, EPCM services |

Minbos has managed the site activities including recovery of additional material for testing and environmental investigations. The Technical Report is based on inputs from the various experts and consultants in their fields.

# 3 PROPERTY DESCRIPTION, LOCATION AND TENURE

The Cácata Phosphate Deposit and the proposed Plant Site are located in the Cabinda Province of Angola, an exclave separated from the rest of Angola by a 40 km section of the Democratic Republic of the Congo (DRC) (Figure 3-1).

The Cácata Phosphate Deposit is situated close to the village of Cácata, approximately 45 km north-east from Cabinda City within the Cácata Mining Licence which is approximately 74 $km^2$ in size.

The Futila Fertilizer Plant is located in the Futila Industrial Zone (Futila), approximately 12 km from Porto de Caio. and 25 km from the Port of Cabinda and is approximately 20 Ha in size. A second plant site is also currently being investigated in Zee Subantando, a suburb located along the main highway (EN201) between Cácata and Cabinda City, approximately 36 km from Cácata and 16 km from Cabinda Port.

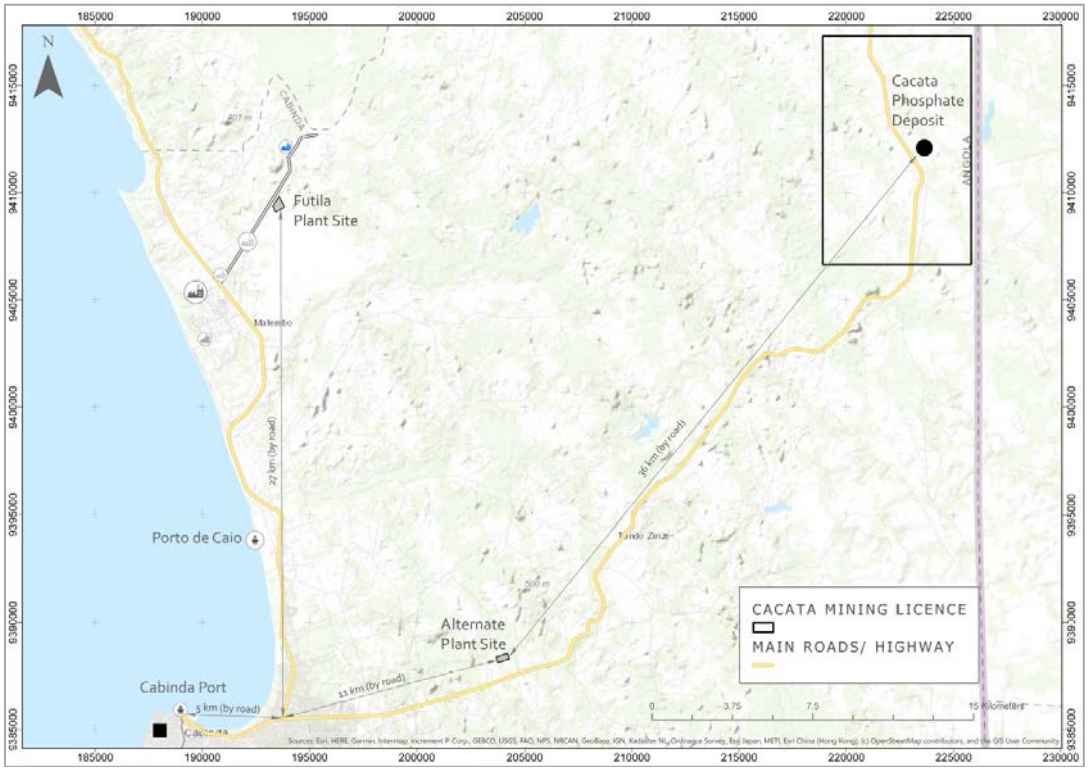
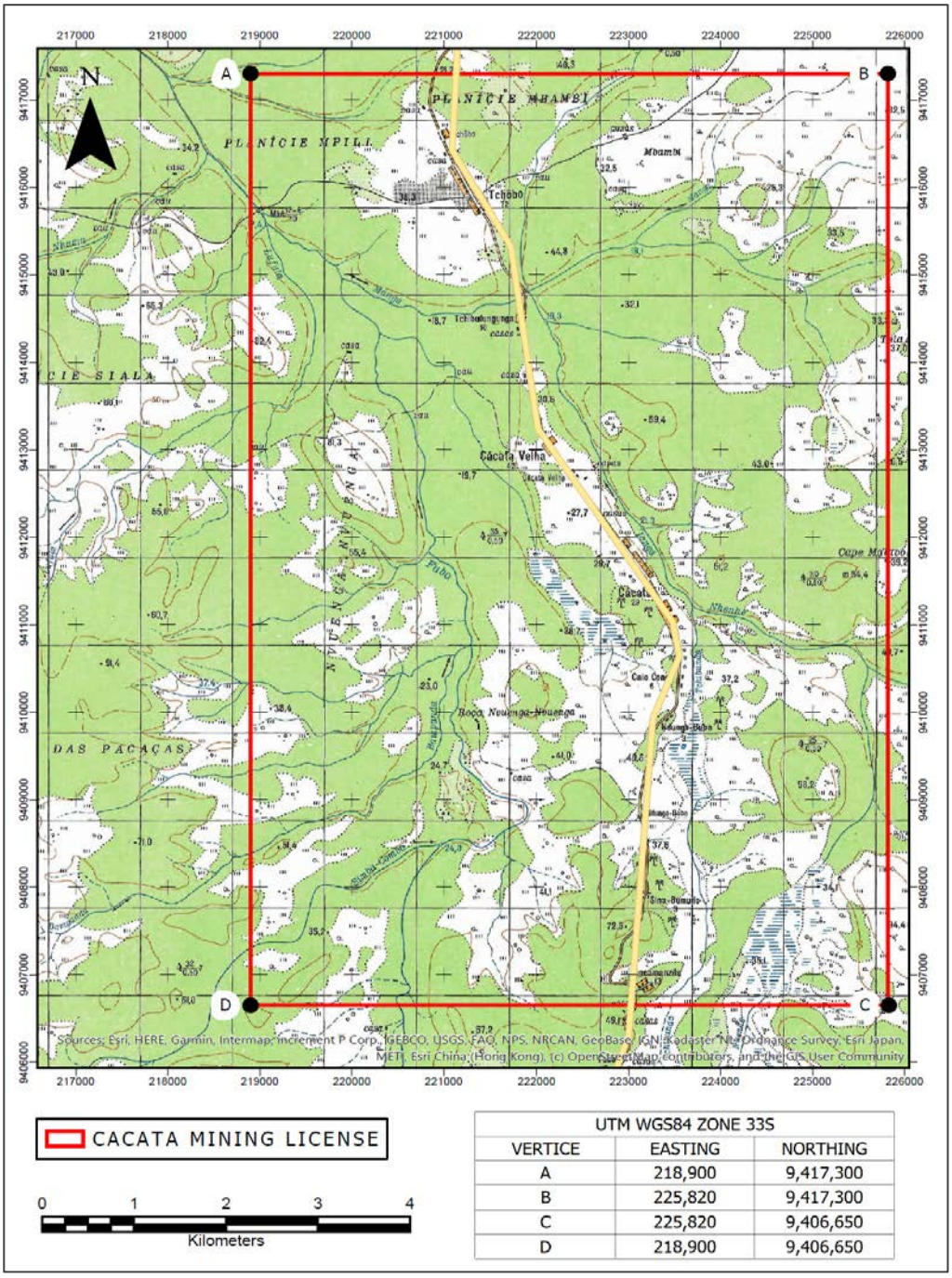



*Figure 3-1 Cabinda Phosphate Project location.*

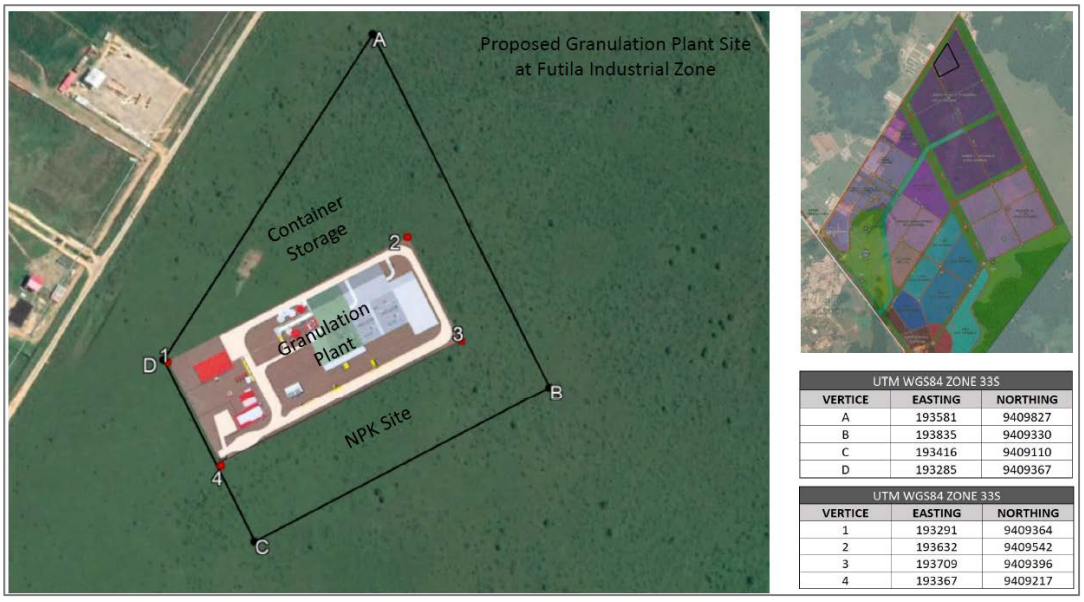
In October 2019, the Angolan Ministry of Mineral Resources and Oil (the Ministry) announced a tender for the Angolan phosphate licenses. Minbos submitted a successful bid for the Cácata Phosphate License and was awarded the Exploration License (314/03/03/T.E/ANG-MIREPET/2021) on 10 March 2021. The licence is valid for 10 years, with a renewal requirement after 5 years.




| UTM WGS84 ZONE 33S | | |
|---|---|---|
| VERTICE | EASTING | NORTHING |
| A | 218,900 | 9,417,300 |
| B | 225,820 | 9,417,300 |
| C | 225,820 | 9,406,650 |
| D | 218,900 | 9,406,650 |

*Figure 3-2 - Cácata Mining Lease Area*

The land at Futila is under an agreement between the Instituto De Desenvolvimento Industrial De Angola (IDIA), which is part of the Republic of Angola Ministry of Industry and Trade, and Soul Rock (subsidiary of Minbos). The site agreed is as per Figure 3-3 with final negotiations on the contract nearing completion.




| UTM WGS84 ZONE 33S | | |
|---|---|---|
| VERTICE | EASTING | NORTHING |
| A | 193581 | 9409827 |
| B | 193835 | 9409330 |
| C | 193416 | 9409110 |
| D | 193285 | 9409367 |

| UTM WGS84 ZONE 33S | | |
|---|---|---|
| VERTICE | EASTING | NORTHING |
| 1 | 193291 | 9409364 |
| 2 | 193632 | 9409542 |
| 3 | 193709 | 9409396 |
| 4 | 193367 | 9409217 |

*Figure 3-3 - Futila Site*

The DFS is based on the fertilizer plant being located at Futila. However, the alternative site has a number of advantages which are being investigated further. Advantages include:

- Reduce truck traffic through the city of Cabinda
- Reduce distance for ore haulage from Cácata to the plant
- Reduced distance for product delivery to the Port of Cabinda, and
- Reduced costs to hold and maintain site

## 4 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

The Cácata Phosphate Deposit and the Plant Site(s) are located in the Cabinda Province of Angola. There is no land access to Cabinda from Angola. Access to Cabinda (from Angola) is via commercial flights from Luanda the capital of Angola.

Cabinda has an International Airport, and a small port with basic facilities which can handle small ships. This port also has a small industrial area nearby. Both the Cácata Phosphate Deposit and the Plant Site are serviced by a good road network.

Due to the existing oil and gas industry, Cabinda City has all the necessary resources including medical services, supplies, fuel, electricity, and housing available. Minbos will need to supply its own infrastructure including power and water on site at Cácata, which is not currently serviced by municipal facilities. The Futila Industrial Zone has power and water and other industrial services.

The climate in the Cabinda region is tropical, with two characteristic seasons: a dry to semi-wet season from mid-May until the end of September and a rainy season from October to May. The average humidity is about 70% and the temperatures vary from 16°C to 24°C.

The Cácata Phosphate Deposit has an average elevation of 40 metres above sea level (masl). The Futila Industrial Zone has an average elevation of approximately 140 masl, and the Zee Subantando site has an average elevation of 110 masl. The vegetation at the Cácata Phosphate Deposit is dominated by forests as well as open areas that have been cleared for farming. The Futila industrial estate has been largely cleared and there is no vegetation of significance to consider.

## 5 HISTORY

A Bankable Feasibility Study (BFS) commenced on the Cácata Phosphate Deposit for Mongo Tando Limited (MTL) in 2017, which was a joint venture between Petril Ltd. (Petril) and Minbos Limited (Minbos). The 2017 study was based on an open pit mine and beneficiation plant to treat approximately 1.0 Mt/y of phosphate ore to produce 800 kt/y of phosphate concentrate. The project was put on hold, and the MTL joint venture was dissolved.

In 2019 Minbos undertook phosphate rock trials in conjunction with the International Fertilizer Development Centre ("IFDC"), in Muscle Shoals, Alabama for characterisation and agronomic trials to confirm the suitability of Cabinda Phosphate Rock for use on Angolan soils and crops.

In 2019, the Angolan Ministry of Mineral Resources and Oil (the Ministry) announced a tender for the Angolan phosphate licenses. Minbos successfully tendered for the Project based on producing a phosphate rock product suitable for use as a substitute for fertilizers, which are currently imported by the Angolan Government for distribution to wholesalers and farmers.

In 2020, a Scoping Study was completed by Minbos which evaluated the feasibility of producing Enhanced Phosphate Rock (EPR). Results from the Scoping Study demonstrated the project to be technically and financially robust.

In 2021, an updated Mineral Resource Estimate (MRE) for the Cácata Phosphate Deposit was prepared by SRK at the request of Minbos. The updated MRE was used by Orelogy as the input for the mining study component of the BFS.

In 2022, the studies were updated to allow for a Beneficiated Phosphate Rock (BPR) to be produced. This included updates to the MRE, engineering studies and the generation of the maiden Cácata Ore Reserves.

## 6 MARKETING SUMMARY

The World Bank recognises Angola as a potential agricultural powerhouse of Africa. Historically Angola which was a top 10 producer of several agricultural commodities and a leader in hemp and coffee. Its agricultural sector has been decimated over the last 50 years by a disruptive end to colonial rule, a 27-year civil war and a 20-year oil boom outcompeting other sectors for capital assets.

Angola has 35 million hectares of arable land of which only 10% is currently cultivated and most of that by smallholder farmers using little or no fertilizer. Yields in Angola are amongst the lowest in Africa despite suitable soils, temperate high altitude, and high rainfall.

The Government of Angola with the support of Development Finance Institutions such as the World Bank, the African Development Bank and the IFC is targeting agriculture and specifically its 3 million smallholder farmers to diversify its economy and drive food security.

The Cabinda Phosphate Rock is a medium-low reactive rock which has been shown to be agronomically effective as a direct application product as a finely ground form to crops such as maize, beans and soybean grown in acid soils with a pH<5.5 that enjoy a high rainfall. As such it is ideally suited to the highland areas of Angola.

Minbos in collaboration with the International Fertilizer Development Centre (IFDC) has developed suitable phosphate products and nutrient strategies suited to the Angolan market. The strategies are supported by seven greenhouse trials over four seasons and more than 20 field trials in Angola over three seasons.

The key results of the trials show:

- The co-application of Water-Soluble Phosphate (WSP) with Cabinda Phosphate Rock provides an enhancement effect to the Phosphate Rock (PR) but the effect is muted in granulated form.

- Cabinda Phosphate Rock has potential as a direct application fertilizer in acid soils with a pH<5.5.
- Ground Cabinda Phosphate rock outperformed run of mine Cabinda Phosphate rock of a higher grade in greenhouse trials in suitable soil particularly at higher application rates.
- Unground Cabinda Phosphate Rock applied by banding to beans and maize showed a 83% and a 54% yield improvement compared to the control.
- Overall the Cabinda Phosphate Rock showed Relative Agronomic Effectiveness of 90% compared to Mono-Ammonia Phosphate (MAP) across all field trials experiments from 2020-2022.
- A single application of phosphate rock provides increasing performance across three seasons.

The Company anticipates attention to product form and sizing, application methods and soil and crop selection will further optimize these results.

In line with historical recommendations from the World Bank and the IFDC, Minbos is pursuing a twostep nutrient strategy to build phosphorus capital in Angola soils using Cabinda Phosphate Rock.

First Year - Incorporate a large quantity of organic ground phosphate rock in the soil to establish a bank of P nutrient.

Subsequent Year - Band a specific quantity of Water-Soluble Phosphate and/or PR in the seeding furrows.

There are three key benefits to the two-step strategy.

1. Incorporation of BPR into the soil maximises its exposure to moisture and soil acidity which will optimise maximise its availability in the soil.
2. Reducing the quantity of WSP applied and focussing it on the seed furrow will minimise the permanent loss of P nutrient to soil retention.
3. Introduction of reduced tillage after the first year in conjunction with organic residue retention will increase the soil organic carbon and improve soil health enhancing the soils ability to buffer moisture and nutrients resulting in improved crop yields and increasing resilience to climate variability.

The IFDC, in addition to developing and testing fertilizer products, is active in developing agricultural markets by assisting governments with policy development and creating linkages between policy, farmers, best practice recommendations, nutrient and seed inputs, crop selection and markets. The IFDC has submitted an MOU to the Angolan Ministry of Agriculture outlining its proposed Angolan Farm and Fertilizer Productivity Program (AFFPP) years which will require an initial quantity of up to 120,000tpa of Cabinda Phosphate Rock increasing to over 400,000tpa.

As the beneficiated phosphate rock will be competing directly with imported WSP products, it is expected to be priced relative to those competing products in the domestic market rather than against the international benchmark phosphate rock price. This is because the benchmark PR price based on the PR being utilised as a feedstock for the manufacture of WSP products by combining the phosphate rock with:

- sulphuric acid to make Single Super Phosphate;
- phosphoric acid to make Triple Super Phosphate or;
- ammonia to make MAP and DAP.

Minbos has already signed a letter of intent with one of the largest sugar plantations in Central Africa to supply Cabinda Phosphate Rock fertilizer, subject only to successful field trials and competitive pricing based on defined reference prices for competing WSP products.

The Government of Angola and major Development Finance Institutions such as the World Bank, IFC, African Development Bank the French Development Agency as well as the major food processing groups in Angola have already committed more than a billion dollars to initiatives and programs specifically targeting the 2 million tonne per annum shortfall in grain and oil-seed production Angola needs to achieve food security in grains, oils and protein.

Food demand is driven by population. World population is expected to increase by 800 million by year 2050, but African population is set to increase by more than 1 billion while older populations in Europe and Asia shrink. Sub-Saharan Africa will provide almost all of this growth.

Angola is poised for spectacular population growth. It is one of the youngest countries in the world with 44% of its 35 million population currently under the age of 14. This demographic will drive household formation between now and 2050, propelling the Angolan population to 87 million. Remarkably, Angola which now comprises 0.5% of the world's population, will contribute 5% of the worlds population increase by 2050.

The Government and Development Finance Institutions (DFI) programs are directed at smallholder famers with the objectives of diversifying the economy away from oil and gas and alleviating poverty for the 10 million Angolans who derive their primary income from agriculture.

The nutrient and knowledge gaps in these development programs are elegantly supplemented by Cabinda Phosphate Rock products and the IFDC's AFFPP. The scale of the Cabinda Phosphate Project and the AFFPP neatly matches the programs rolled out by the major development actors in Angola.

## 7 GEOLOGY

The Phosphate deposits of Cabinda are of the Florida/Morocco sedimentary type and structurally simple, located in structures formed as part of the Atlantic rifting. The area is comprised of a series of broad, gentle folds and grabens trending southeast-northwest, sub parallel to the coast with the phosphate deposits preserved within the grabens. The folds and grabens are cut by steep transverse faults and shear zones perpendicular to main faults in places. Sedimentary cycles can be correlated between grabens based on rock chemistry and sediment characteristics in the phosphatic units.

The deposits are Maastrichtian or Eocene age and locally referred to as the Upper Phosphate Member (UPM), Pebbly Foraminiferal Clay and Limestone Unit (PFCL) and the Lower Phosphate Member (LPM).

Mineralisation at Cácata varies within the sedimentary layers from very high-grade gravels with coprolites, pellets, teeth, and bones to silty fine grained phosphorite low grade zones and is preserved in a narrow graben approximately 400m wide and 4.5km long. The phosphorite beds consist of three (3) main mineral phases, a phosphate phase of mainly apatite/francolite/crandillite, a sand phase of predominantly silica/quartz and a clay phase of primarily iron-potassium rich clay minerals. These phases are clearly seen in the assay results and show grouped distributions of $Fe_2O_3$-$Al_2O_3$, $SiO_2$ and CaO-$P_2O_5$. Except for MgO and $K_2O$, other oxides have very low grades. In the lower grade layers the distributions are more complex and dolomite is a major component of most of these sediments. Contaminants such and Cadmium, base metals and uranium are low (where analysed).

## 8 EXPLORATION

Indications of phosphates in the Cabinda district were discovered several decades ago with the identification of coprolites in the proximity of Landana in 1923. Then in 1933, phosphates were discovered in the littoral formations of the Cabinda district, and outcrops were located at Tumuna, Sassa-Zau, Malembo, Vonso, Lagao, Yanga, Mongo Tando, Cambota, Chibuete, and Chiela.

In the period from 1950 to 1951, the Mining and Geology Service investigated the Cambota, Mongo Tando and Ueca phosphate deposits. During that period, new signs of phosphates were discovered in Cácata, and in the Zaire Province of Angola at Ambrizete (N'zeto). Following the discovery of phosphate occurrences in Angola, the Companhia de Fosfatos de Angola ("COFAN") was established in 1968 to investigate the Cabinda phosphate deposits.

Exploration by COFAN was carried out in two phases, 1969 to1970 and 1972-1973, which included drilling, trenching, shaft sinking, and processing test work. The average $P_2O_5$ content of the mineralisation was estimated to be 20% $P_2O_5$ at Cácata. However, Cácata did not form part of the second phase of COFAN work and no "resource" was estimated.

During 2010 to 2011, exploration and evaluation work was undertaken under the Mongo Tando Limitada S.A. (MTL) joint venture, in which Minbos held a 50% share. The Exploration License at the time covered all the known phosphate deposits in the Cabinda Province. The Cácata Phosphate Deposit was evaluated by MTL in conjunction with five (5) other deposits. In total MTL drilled 365 holes, for approximately 20,000m, and processed approximately 2230 samples over 2 years from six (6) deposits. This included 57 aircore drill holes and 16 diamond drill holes totalling 3,047 metres at Cácata.

In 2016, a bulk sampling program was undertaken by MTL at Cácata to support the process flowsheet being considered at the time. A total of 22 tonnes was collected from the central and southern parts of the deposit, of which eight (8) tonnes was taken from an area representative of the "scrub and screen material", which was defined by having a $P_2O_5$ grade of greater than 24%, and twelve (12) tonnes was taken from an area representative of "direct shipping grade" ("DSO") material, which was defined by having $P_2O_5$ grade greater than 30%.

Ten (10) tonnes was sent to Mintek in South Africa for scrub and screen pilot plant test work, and two (2) six tonne samples were sent to the United States (US) to two different equipment suppliers for drying and sizing testwork.

Two (2) tonnes of material remained after beneficiation test work was completed. This was sent by Minbos in 2018 to the International Fertilizer Development Centre (IFDC) headquarters in Muscle Shoals Alabama for granulation test work and greenhouse trials. The 2016 bulk sample is considered representative of the Main and Submain phosphate zones.

In 2021, Minbos collected a 14-tonne bulk sample from the high-grade zone at Cácata (greater than 29% $P_2O_5$), which was shipped to the IFDC headquarters in Muscle Shoals Alabama for blend and granulation optimisation, field, and greenhouse trials (see Section 11.2).

## 9 CÁCATA MINERAL RESOURCE ESTIMATE

The Cácata Mineral Resource Estimate was updated by SRK in 2021 to account for an updated geological interpretation and addressed the revised beneficiation process and final product specifications. Please refer to ASX announcement dated 23 November 2021 for further details pertaining to the Cácata Mineral Resource update.

Grades were interpolated using Ordinary Kriging within a series of domains (reflective of the stratigraphic and chemical units) identified within the overall graben structure. The Cácata Mineral Resource statement has been classified in accordance with the guidelines of JORC 2012. Classification was based on the geological continuity of the mineralised seams, the quality and quantity of exploration data supporting the estimates and the geostatistical

confidence in the tonnage and grade estimates relative to the proposed extraction and processing methods.

The Cácata Mineral Resource is reported within an optimised pit shell, and a cut-off grade of 19% $P_2O_5$ (Table 9-1), which is based on mineral processing test work data to date and reflects a product specification grade of >29.5% $P_2O_5$. No depletion has been applied, as no mining is yet to occur at the Project.

*Table 9-1 Cabinda Phosphate Project Mineral Resource Statement, 31 October 2021*

| Class | Cut-Off Grade ($P_2O_5$%) | $P_2O_5$% | Tonnes (Mt) | Density (g/cm$^3$) | Contained $P_2O_5$% (Mt) | CAPHOS ratio |
|---|---|---|---|---|---|---|
| Measured | 19.0 | 29.9 | 2.20 | 1.83 | 0.66 | 1.48 |
| Indicated | 19.0 | 29.7 | 4.76 | 1.84 | 1.41 | 1.46 |
| **Measured and Indicated** | **19.0** | **29.7** | **6.96** | **1.84** | **2.07** | **1.47** |
| Inferred | 19.0 | 29.5 | 1.45 | 1.85 | 0.43 | 1.46 |

In reporting the Mineral Resource Statement, SRK made note of the following:

- The Mineral Resources are reported on an in-situ basis for the individual phosphate seams, where the Mineral Resources are based on a cut-off grade of greater than 19% $P_2O_5$. The cut-off grade is based on beneficiation test work data provided by Minbos and a product specification grade of greater than 29.5% $P_2O_5$.
- A pit optimisation exercise was completed using a re-blocked mining model, with an additional 5% mining loss factor incorporated.
- A product selling price of 457.7 USD/tonne for Cácata Rock has been applied, based on a MAP landed in Port Caio of USD700/t (52 $P_2O_5$ %), a blend of 25% MAP in the final product on a contained $P_2O_5$ basis, and a Relative Agronomic Effectiveness ("RAE") of 85%. This results in a Cácata Blended Product price of 383.9 USD/t.
- SRK considers there to be reasonable prospects for eventual economic extraction based on the pit optimisation exercise as well as consideration of the process flowsheet/requirements to deliver a saleable product.
- Mineral Resources have been reported on an inclusive basis, are not Ore Reserves and do not have demonstrated economic viability, nor have any mining modifying factors been applied.
- The reported Mineral Resources have an effective date of 31 October 2021. The Competent Person for the declaration of Mineral Resources is Kathleen Body ("SACNASP, Pr.Sci.Nat) number 400071/07, an associate of SRK Consulting (UK) Ltd. The Mineral Resource estimate was reviewed by a team of consultants from SRK.
- Tonnages are reported in metric units, grades in percent (%). Tonnages and grades are rounded appropriately. Rounding, as required by reporting guidelines, may result in apparent summation differences between tonnes, grade and contained metal content. Where these occur, SRK does not consider these to be material.

In July 2022, SRK were requested by Minbos to evaluate the potential for the Cácata Project to produce a direct application phosphate fertiliser and review the associated studies and data available for this potential product route, in support of satisfying Reasonable Prospects for Eventual Economic Extraction ("RPEEE") under the Mineral Resource reporting criteria.

SRK's review established that although preliminary in nature, with a degree of benchmarking required, that there is sufficient evidence to support the condition of RPEEE for the for the Cácata Project to produce a direct application phosphate fertiliser. SRK also reviewed the outputs of the updated pit optimisation exercise and established that there has been no material difference to the reported quantities and grades presented in the 2021 Mineral Resource statement, and therefore does not propose any adjustments to be necessary to accommodate this alternative product route.

## 10 MINING

Mining will be undertaken at the Cácata Phosphate Mine (CPM) using a conventional truck and shovel mining methodology.

Phosphate rock will be trucked from the pit to a Run of Mine (ROM) stockpile to the northwest of the open pits. A mixed ancillary fleet will also be used to support load & haul operations.

Waste rock is placed in an ex-pit waste rock storage facility (WRSF) located to the east of the open pits for the first 5 years of operation (nominally 2023 – 2027). Post Year 5, waste rock will be backfilled into mined areas of the open pit as in-pit backfill. There will be some periodic requirement for ex-pit waste rock storage post Year 6 (nominally 2028) due to the availability of open pit voids.

The ramp up in production of phosphate rock from the processing plant means that continuous mining operations at the CPM are not required until Year 6 of the project. Prior to this, mining will be undertaken on a campaign basis of approximately 3 to 4 months per year.

It has been assumed that the material at the CPM, being predominantly loosely consolidated sedimentary material and gravels, will be "free-dig" and will not require blasting. There may be some requirement for ripping by a bulldozer in some areas.

An open pit optimisation utilising Whittle™ software was carried out on the Cácata Phosphate Deposit utilising Measured and Indicated Mineral Resources only (in line with the JORC 2012 guidelines). The latest parameters available were used to determine the economic extent of the open pit. The parameters were supplied by Minbos for three different production rates of beneficiated phosphate rock (BPR) and an assumed ramp up in production was assumed over the first 9 years of operation. Mining and processing parameters used are summarised in Table 10-1, and BPR price and product costs used are shown in Table 10-2.

*Table 10-1 Cácata Phosphate Mine – Pit Optimisation Mining and Processing Costs*

| Description | Unit | Values | | |
|---|---|---|---|---|
| BPR Production Rates | ktpa | 125.0 | 187.5 | 375.0 |
| Period | Year | 1 – 3 | 4 – 8 | 9+ |
| **Total Mining Cost** | **USD/t mined** | **$4.20** | | |
| Mining Related Ore Costs | USD/BPR t | $9.20 | | |
| Beneficiation Costs - Variable | USD/BPR t | $18.561 | | |
| Beneficiation Costs - Fixed | | $9.384 | $6.256 | $3.128 |
| General and Administration Costs - Fixed | | 30.968 | $20.645 | $10.323 |
| **Total Processing Cost[1]** | **USD/BPR t** | **$69.47** | **$55.76** | **$42.04** |

[1] Includes 2% royalty

*Table 10-2 Cácata Phosphate Mine – Pit Optimisation BPR Price and Costs*

| Description | Unit | 125 |
|---|---|---|
| **BPR Price** | | |
| 15 year average TSP[1] US Gulf | USD/ BPR t | $412.00 |
| Costs to deliver to Angola | USD/ BPR t | $75.00 |
| Average Landed Price of TSP | USD/ BPR t | $487.00 |
| Cacata Rock $P_2O_5$% | % | 30.05% |
| TSP $P_2O_5$% | % | 46% |
| RAE of PR to TSP | % | 92% |
| **Total BPR Price** | **USD/BPR t** | **$292.69** |
| **BPR Costs** | | |
| Distribution Costs | USD/BPR t | $17.97 |
| Community and Social Costs | USD/BPR t | $2.93 |
| **Total BPR Cost** | **USD/BPR t** | **$20.89** |

Minbos provided Orelogy with a capital schedule for the project, being an initial capital requirement of USD42.1m, with a subsequent upgrade in Year 9 of USD27.1m.

Mining loss and dilution were evaluated in some detail as part of the 2020 Cácata Scoping Study. A skin approach was used on the basis of accepting ore loss to minimise dilution. Given the low bench heigh (2.5m) and small excavator size (max. 100t), a global mining loss of approximately 6% was calculated with nil dilution. This was applied globally for the DFS.

In addition, it was assumed that the stream that runs through the middle of the deposit would be left intact, and therefore an exclusion zone was applied around this feature. Details of the shell selected from this optimisation as the basis for design are presented in Table 10-3 and Table 10-4.

*Table 10-3 Cácata Phosphate Mine – Selected Pit Optimisation Shell Physicals*

| Revenue Factor | Ore | | | | Waste | Total | Strip Ratio |
|---|---|---|---|---|---|---|---|
| | Measured. | Indicated. | Measured + Indicated | | | | |
| | Mt | Mt | Mt | $P_2O_5$ % | Mt | Mt | |
| 1.04 | 1.0 | 3.7 | 4.6 | 30.2 | 16.4 | 21.0 | 3.5 |

*Table 10-4 Cácata Phosphate Mine – Selected Pit Optimisation Shell Financials*

| Financials (Undiscounted) | | | | | | Discounted Cashflows | | |
|---|---|---|---|---|---|---|---|---|
| Mining Cost | Ore Cost | Product Cost | Capital | Revenue | Cashflow | Worst Case | Best Case | Average Case |
| ($M) | ($M) | ($M) | ($M) | ($M) | ($M) | ($M) | ($M) | ($M) |
| -$88 | -$218 | -$97 | -$69 | $1,358 | $885 | $290 | $302 | $296 |

Figure 10-1 provides the overall results of the Base Case optimisation which clearly shows the robustness of the shell, with virtually no change in shell total tonnage, ore tonnage, or value from a revenue factor of 0.4.

A sensitivity analysis indicated the shell size is effectively insensitive to a +/-20% change in mining costs, processing costs or product price.

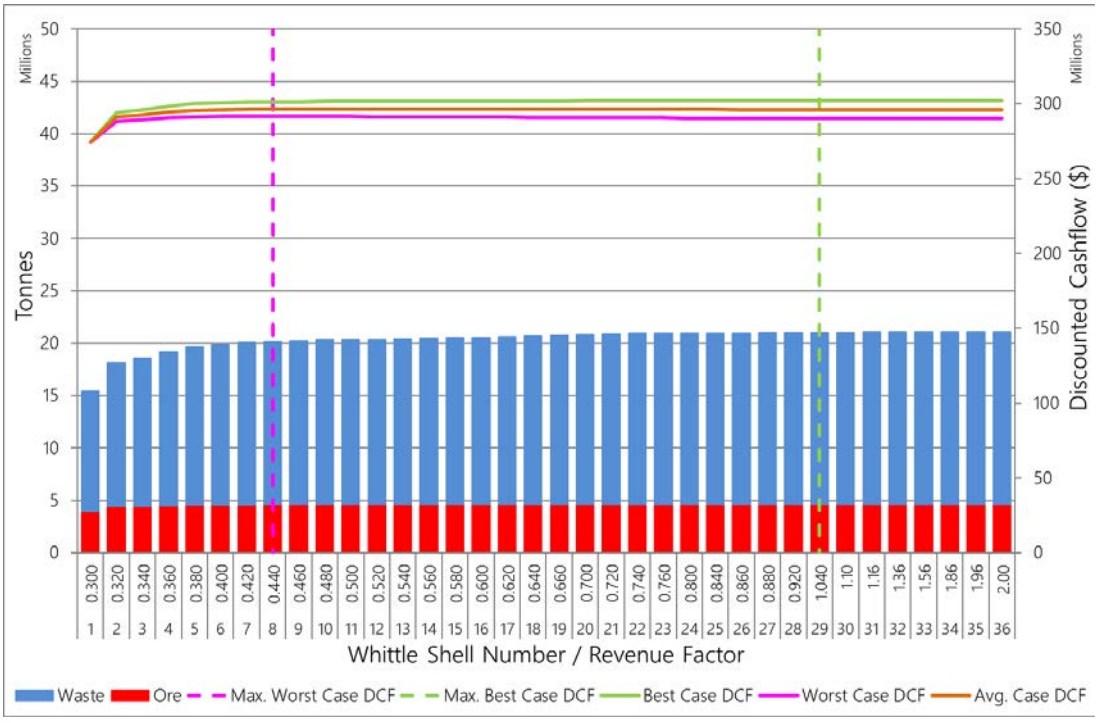



*Figure 10-1 - Cácata Phosphate Mine – Base Case Optimisation Tonnage / Value Curve*

The optimisation shell selected for pit design purposes (Figure 10-2) encroached across a second stream to the south of the mining area that is a tributary of the Nhenhe River. To mitigate this, an adjustment was made to the mine design to move the southern extent of the design approximately 100m north (Figure 10-3). The site layout plan (Figure 10-3) shows the following:

- North and South ultimate pit designs
- Ultimate Waste Rock Storage Facility design
- ROM Pad Stockpile area
- Contractors infrastructure area
- Ex-pit haul roads
- Topsoil stockpiles
- Settlement pond
- Site access road and bridge

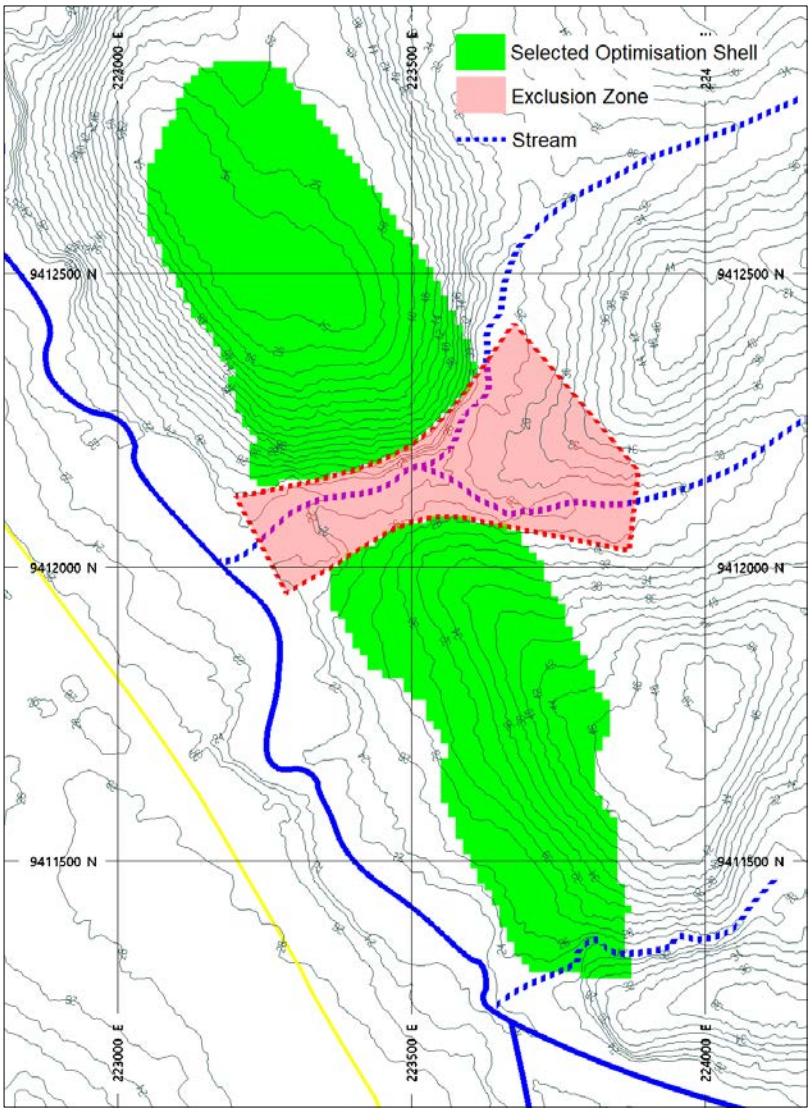



*Figure 10-2 - Cácata Phosphate Mine – Selected Optimisation Shell Location*


*Figure 10-3 Cácata Phosphate Mine – Overall Site Layout*

A life of mine (LOM) mining schedule was developed based on an assumed market capacity for the BPR product developed by Minbos. The schedule was developed quarterly for the first five (5) years of operation and then annually after that. Internal mining stages (Figure 10-4) were developed inside the ultimate pit design to facilitate a progressive mining and backfilling operation.

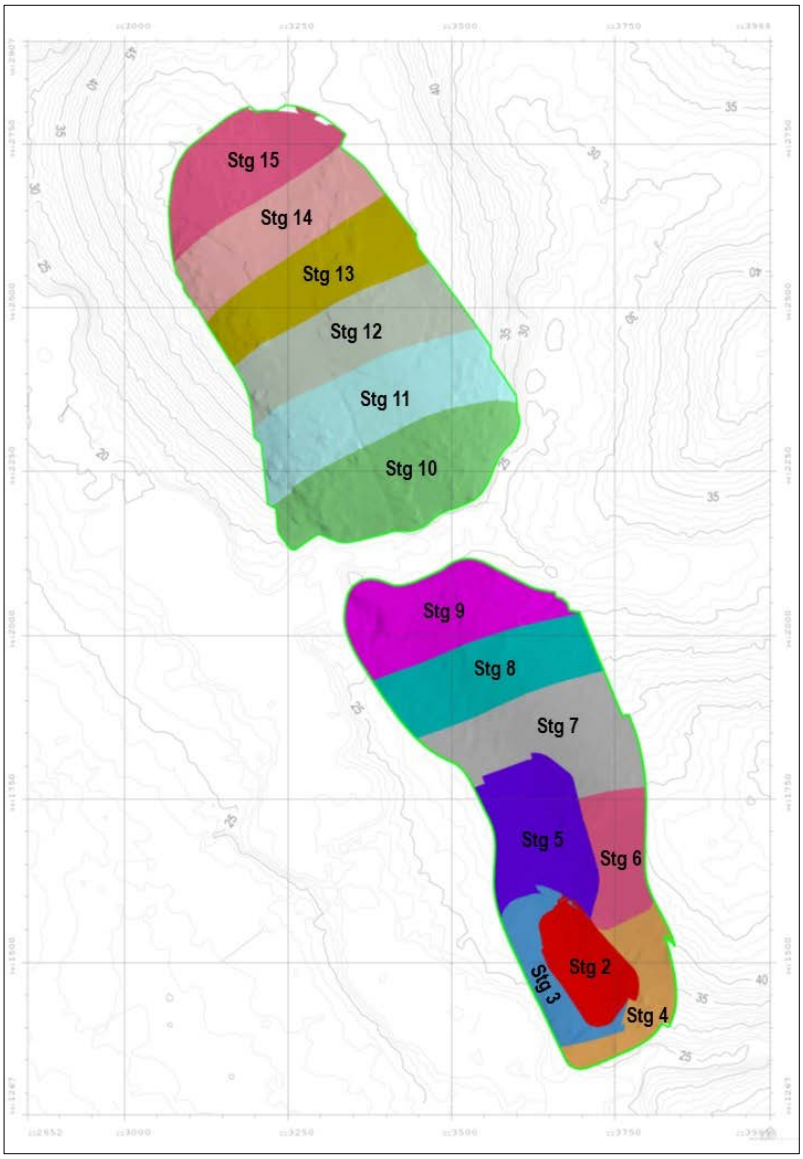



*Figure 10-4 Cácata Phosphate Mine – Mining Stage Layout*

Production levels during the first 5 years are low (Figure 10-5), therefore mining during the first five (5) years will be undertaken on a campaign basis. From Year 6, production levels become more sustainable for an on-going mining operation. It was anticipated that the intermittent basis of the initial mining may have a potentially detrimental effect on the standard of mining practices (i.e., changing personnel, short period to establish systems). Therefore, mining ore loss was increased to 10% for Stage 1 and Stage 2.

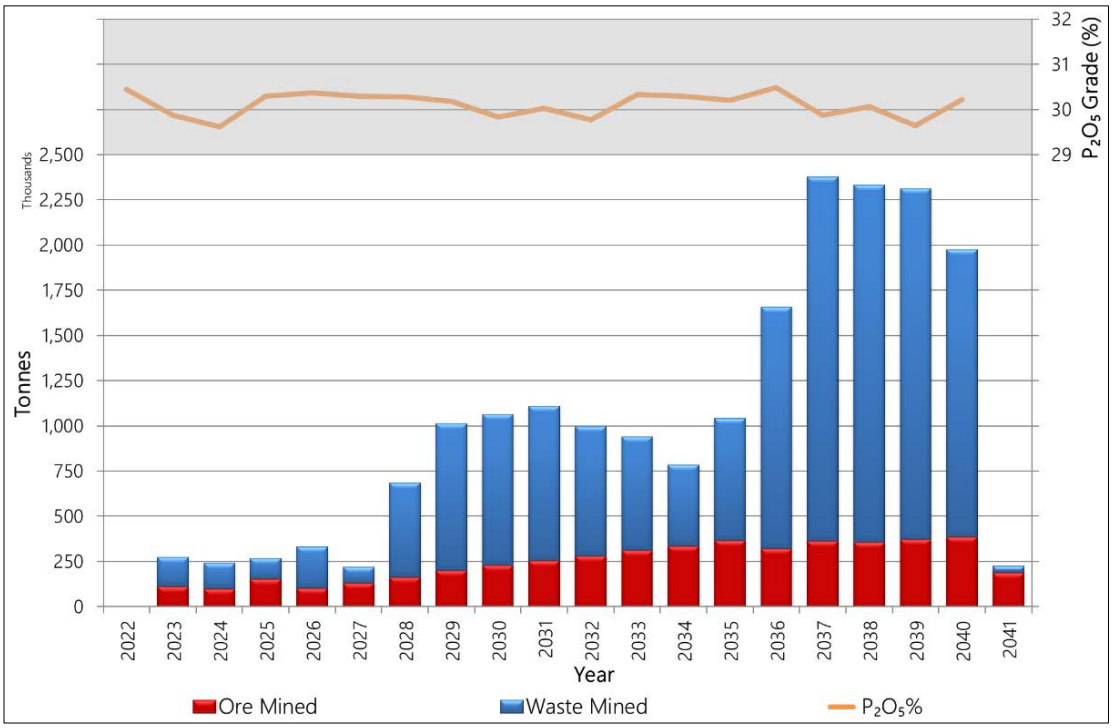



*Figure 10-5 Cácata Phosphate Mine – LOM Production Schedule Ex-pit Physicals*

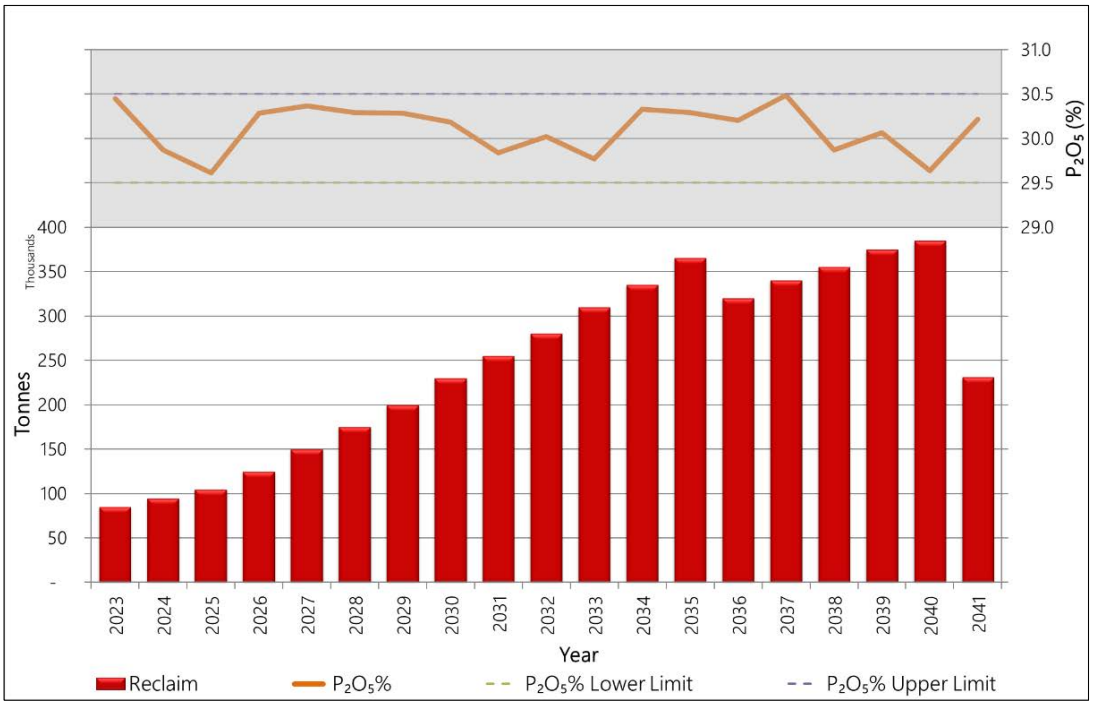



*Figure 10-6 Cácata Phosphate Mine – LOM Production Schedule Ore Haulage*

A first principal mining cost estimate was developed based on the LOM mine plan by Orelogy, with the assistance of Majesso, a Perth based specialist mining cost estimation group with considerable African experience. The key assumptions of the estimate were:

- A contractor-based operation for both the open pit mining and ore transport from site to the Cabinda Process Plant.

- Materials mined are assumed to have an average moisture content of 15%.
- Fuel cost was provided by Minbos at USD 0.27 per litre.
- A mining operation using one 10-hour shift per day, 6 days per week. The local workforce will be rostered consistent with local practice and labour laws to allow operational coverage.
- The local workforce will be sourced from the Cabinda region and will travel to and from the works each day using busses provided by the mining contractor. No site-based accommodation village is contemplated or allowed.
- Labour costs have been based on benchmark information provided by Minbos plus allowances for on-costs such as leave, social security contributions, payroll tax, medicals, etc.
- Table 10-5 lists the prime mining equipment required.
- It is assumed that the mining campaigns in 2023 to 2027 will be performed by contractors using equipment that is likely to be available within their existing fleets. From 2028, with an increase in annual volumes, larger scale mining equipment will be used. The make and model of each item nominated in Table 10-5 are notional, and other brands may be used depending on the open pit mining contractor.

*Table 10-5 Cácata Phosphate Mine – Mining Fleet Numbers*

| Make / Model | 2023 | 2024 to 2027 | 2028+ |
|---|---|---|---|
| **Mining** | | | |
| Cat 335 Excavator | 1 | 2 | |
| Cat 349 Excavator | | | 1 |
| Cat 374 Excavator | | | 1 |
| 30t Articulated Truck | 2 - 3 | 4 - 5 | |
| 40t Articulated Truck | | | 5 - 9 |
| Cat D8 Track Dozer | 1 | 1 | 1 |
| Cat 140 Grader | 1 | 1 | 1 |
| 30 kl Watercart | 1 | 1 | 1 |
| **Ore Transport** | | | |
| Cat 950 FEL | 1 | 2 | 2 |
| 30t Tip Truck | 6 | 7 - 12 | 12 - 14 |

- Allowances have been made for minor support equipment such as light vehicles, buses, service/fuel truck, IT, backup gensets, buildings and workshop, fuel tanks and diesel-powered standpipe.
- An allowance has been made for pit dewatering at a rate of approximately 5 litres per second. This level of dewatering covers both surface inflows from rainfall and groundwater ingress.
- The peak workforce for mining and ore transport totals 110 people (inclusive of allowances for absenteeism, leave cover, etc).

- Costs for equipment ownership and operation have been based on lifecycle cost estimates provided by OEM dealers and other allowances for consumables based on experience from other similar environments and operating conditions.
- Mobilisation and establishment costs will vary between contractors due to differing operational approaches and standards. In addition, the likely location from which equipment will be mobilised will be specific to where the contractor may have equipment, if purchased new, hired, etc. For this reason, the amounts for this matter are an estimate assuming transport within the region of Cabinda only.

## 10.1 Ore Reserves

From the JORC 2012 code, an Ore Reserve is the economically mineable part of a Measured and/or Indicated Mineral Resource. It includes diluting materials and allowances for losses, which may occur when the material is mined or extracted and is defined by studies at prefeasibility or feasibility level as appropriate that include application of applicable Modifying Factors. Such studies demonstrate that, at the time of reporting, extraction could reasonably be justified.

The Ore Reserve statement (Table 10-6) is based on the Measured and Indicated Mineral Resources, included within the final pit design, and after taking into account all Modifying Factors. This Ore Reserve statement is based on the latest (2021) Resource Model.

*Table 10-6 Cácata Phosphate Mine Ore Reserve Statement as at September 2022*

| Reserve Classification | kt | $P_2O_5$% |
|---|---|---|
| Proven | 1,172.6 | 30.5 |
| Probable | 3,543.9 | 30.0 |
| **Total (Proven + Probable)** | **4,716.5** | **30.1** |
| Waste | 15,136.2 | |
| Total Material | 19,852.7 | |
| Strip Ratio[1] | 3.2 | |

[1] Waste tonnes: Ore tonnes

The key inputs or modifying factors included:

- Average LOM ore loss of 6.1% (varies over time) and nil dilution
- A ramp up in phosphate rock production over time from 125 ktpa to maximum of 375 ktpa over a 9 year timeframe
- The pit designs from which the Ore Reserve is derived are based on an optimal discounted cash flow pit shell generated by Whittle™ software. The maximum best case discounted cashflow shell was selected on the basis of:
- Maximising the resource conversion
- The optimal shell was completely insensitive to cost variations and;
- There was virtually no value change between maximum worst case and maximum best case.

The optimal shell was generated based on the following modifying parameters:

- Geotechnical parameters based on a 2016 report by independent consultants Golder Associates Africa (Pty) Ltd.
- A global mining cost of USD 4.20/ total tonne mined.
- Plant processing costs of USD 69.47/t to USD 42.04/t of phosphate rock dependent on production rates, based on plant design and cost estimates by DRA Global/Minbos.
- A product transport and distribution cost of USD20.89/t BPR provided by Minbos.
- A price of 292.69/t BPR provided by Minbos.
- Total initial capital of USD 42.1M and an additional USD 27.1M in Year 9
- Discount rate of 10%

It should be highlighted that the costs and parameters utilised to derive the Ore Reserve were based on the estimates available as at April 2022. They differ from the final parameters utilised in the BFS financial analysis. The results of the financial analysis are provided in Section 16 to Section 18.

A LOM schedule and associated financial assessment of the Ore Reserve was undertaken utilising the final project costs and parameters which returned a project NPV before tax of USD 203.2M.

JORC Code 2012 Table 1 Section 4 is included as an Appendix to this announcement.

The scientific and technical information in this report that relates to Ore Reserves estimates for the Project is based on information compiled by Mr Ross Cheyne, a Principal Consultant of Orelogy Mine Consulting Pty Ltd. Mr Cheyne is a Fellow of the Australasian Institute of Mining and Metallurgy (AusIMM). Mr Cheyne 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 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Cheyne consents to the inclusion in the report of the matters related to the Ore Reserve estimate in the form and context in which it appears.

## 11 MINERAL PROCESSING AND METALLURGICAL TESTING

In August 2019, the IFDC successfully performed pilot plant tests to produce Enhanced Phosphate Rock (EPR) fertilizers utilising phosphate rock sourced from the Cácata Deposit. After reviewing the results from the trial and receiving approval from the Angolan government, Minbos made the decision to move forward with the Cabinda Phosphate Project, which comprised of a granulation plant to produce enhanced phosphate fertilizer. Because of supply chain issues that developed in the local Angolan market, and an increased market for Beneficiated Phosphate Rock (BPR), Minbos decided to repurpose the granulation plant for grinding and drying of raw phosphate rock. The processed rock (BPR) would be used locally for agronomic purposes.

This section outlines the test work carried out for both BPR and EBR products, while the DFS is based on BPR as the single primary product, Minbos retains the flexability to revert to EPR or another fertiliser product in future should market conditions change.

### 11.1 Granulation Test Work for EPR

Granulation test work was completed by the IFDC in 2020 on Cácata phosphate rock material remaining from the 2016 bulk sampling and test work program at their granulation pilot plant in Muscle Shoals, Alabama. The focus of the test work was to evaluate the technical feasibility of producing granular phosphate-based fertiliser using a combined Cácata phosphate rock and MAP product.

The IFDC small-scale granulation pilot plant was configured as closely as possible to simulate the production of granular fertilizers in a commercial plant. The configuration of the pilot plant is shown in Figure 11-1.

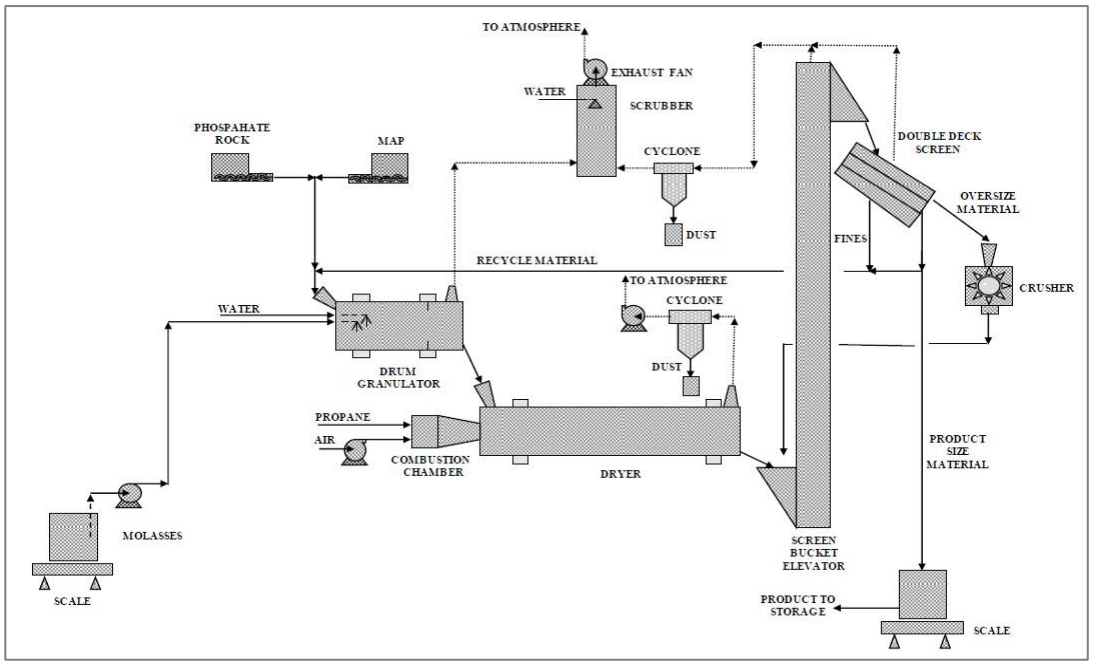



*Figure 11-1 Pilot Plant Configuration*

The following conclusions and recommendations can be made based on the results of the granulation tests completed during the pilot plant.

- Cácata phosphate rock is suitable for producing an Enhanced Phosphate Rock product.
- The specifications tested performed well using molasses as a binding agent.
- The material discharging from the dryer requires a temperature of at least 95 °C to properly dry the product to ensure good quality.
- The critical relative humidity of the products was high, between 80 and 90%, which will be advantageous in a humid climate. However, if the Granulation plant is in a location where the relative humidity is higher than 80%, the products should be bagged in bags with a plastic liner.

## 11.2 BPR Test work

In 2021, a 14-tonne bulk sample was recovered from the Cácata Phosphate Deposit (Figure 11-2). Minbos considers the sample to be representative of Run of Mine material that will be processed by the plant. The sample was dispatched to IFDC where 2 - 4 tonnes of the sample was used in a pilot trial evaluating the flow characteristics of a Beneficiated Phosphate Rock (BFR), which is essentially phosphate rock crushed and dried before packaging.

*Figure 11-2 Bulk Sample being collected from the Cacata Phosphate Deposit.*

Moisture levels of 6-10% were observed in the sample, with an initial moisture of 6% used as the basis of the design. The rock was ground to a size matching the size produced by the Stedman Company (see section 11.3), which provided a particle size distribution report documenting the grind.

Testing was done to verify that the rock, with a moisture content of 6-10%, could be dried to a targeted final moisture of 3% using a rotary drum dryer and low air velocity to avoid high levels of dust entrainment. Processing rates of up to 100 kilograms per hour (kg/h) of rock were achieved. IFDC later dried additional rock in its medium-scale pilot plant, achieving rates of up to 350 kg/h. The configuration of the pilot plant was as per Figure 11-3.

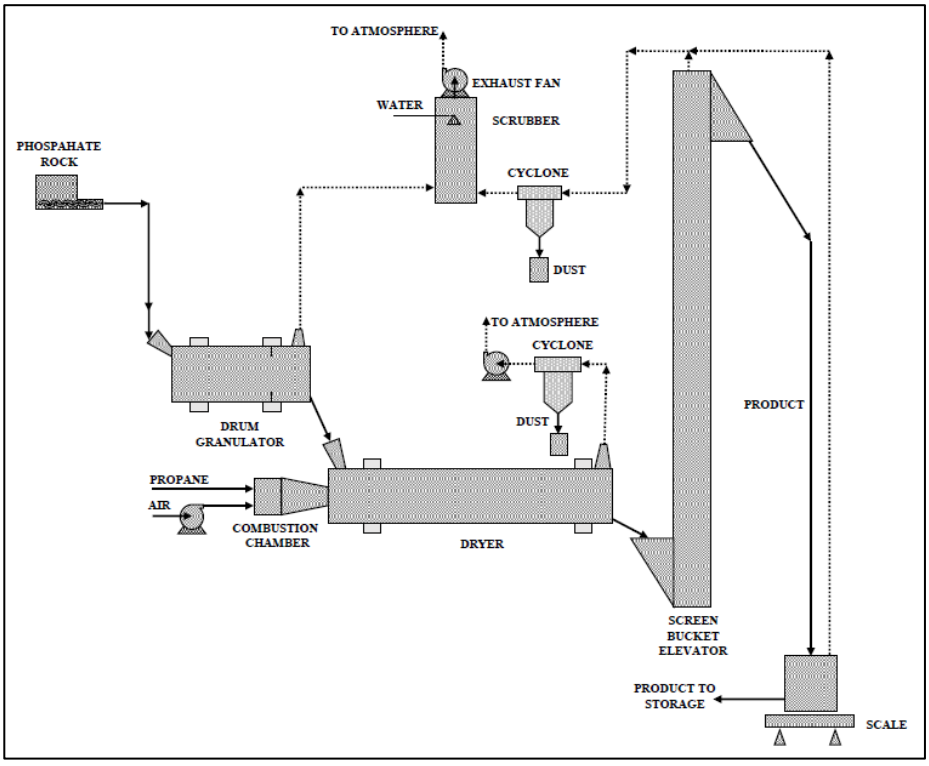



*Figure 11-3 Pilot Plant Configuration for BPR*

The following conclusions and recommendations can be made based on the results of the BPR tests completed using the pilot plant:

- A BPR product can be successfully produced with some modifications to the original granulation plant
- The granulator will only be used to convey the rock to the dryer, and as such the retaining ring on the discharge should be removed. Alternatively, the granulator could be bypassed altogether.
- Air velocity through the dust collection system should be kept very low to minimize entrainment of dust particles of the ground rock whilst maintaining a negative velocity by utilising variable speed drives on the fans and dampers
- Due to the low air velocity and airflow, and the large amount of moisture being removed, the outlet air temperature needs to remain higher. This is in order to keep the relative humidity low and prevent the material from absorbing moisture back from the air. The IFDC recommends maintaining the outlet air temperature at a minimum of 80°C. This would results in the dryer baghouse experiencing these higher temperatures. Therefore bags in the baghouse and the dryer fan should be rated for these higher temperatures.
- Given the reduced heat loads of the plant in BPR configuration in comparison to the granulated EPR layout, a smaller burner will be required as it will be outside the turn-down capacity of the original burner.
- The IFDC recommends discharging the rock from the dryer weigh belt conveyor to ground bypassing the rest of the granulation plant equipment. This will help reduce handling of the material and minimize associated dust formation and entrainment.

## 11.3 Materials Handling

Materials Handling test work was completed on a sample of Cácata phosphate rock by Solids Handling Technologies Inc in the USA. The aim of the test work was to determine the flow properties of Cácata phosphate rock, which would be used in the design of the granulation plant.

The sample as received was screened at 1.41 mm, with the material finer than this size fraction used for flow testing. The moisture content of the sample was determined to be 4.0%. The saturation moisture content of the -1.41 mm material was determined to be 25.4% For testing purposes, a sample was adjusted to a moisture level of 6.0 % and 12.0% to represent the expected and worst-case moisture content. The following tests were completed:

- Cohesive property tests
- Wall friction tests
- Static angle of repose
- Compressibility test

From the tests completed, preliminary design parameters for bin and hoppers were determined.

Milling test work was completed on a sample of Cácata Phosphate Rock by Stedman Machine Corporation in the USA. The aim of the test work was to determine the suitability of Cage and Hammer mills for the phosphate rock crushing/milling duty. For duties where the material to be milled/crushed is sticky, hammermills may not be suitable due to build-up of material inside the machine and hence a cage mill was chosen.

Both machine types were tested at nominally 3 %, 7% and 8.5% moisture to represent the expected phosphate rock moisture content range. Stedman concluded that the cage mill was the most suitable machine type for the duty.

Stedman carried out further testing on the cage mill to determine the optimal speed of the mill to produce the BPR. The aim was to produce a product of minimal size whilst also minimising the amount of dust generated – see sizing curves in Figure 11-4. The optimum speed chosen was 750rpm.

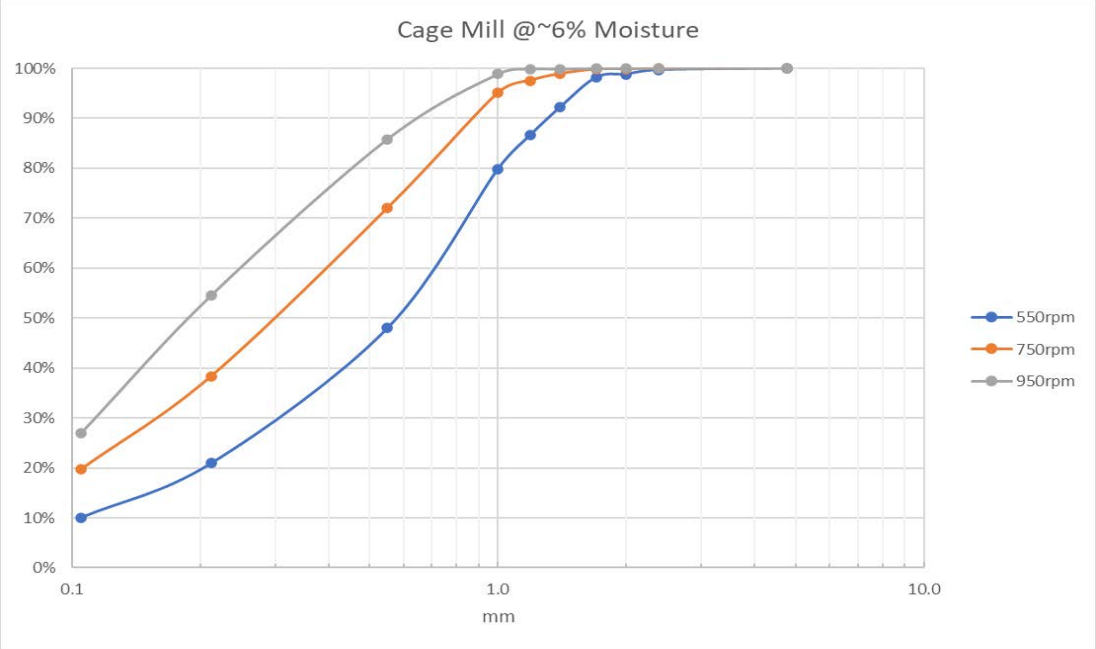



*Figure 11-4 - Cage Mill particle size distribution by mill speed.*

## 12 PROCESSING

The Cabinda phosphate plant and associated service facilities will process phosphate rock from the Cacata Phosphate Mine to produce a phosphate based fertiliser product.

The plant was initially designed to produce an Enhanced Phosphate Rock product (EPR) by granulating phosphate rock with Monoammonium Phosphate (MAP) utilising molasses as a binder. The key elements of the plant consisted of:

- Phosphate rock delivery system
- Phosphate rock storage
- MAP delivery system
- MAP storage
- Granulation plant (only crushing, drying, dust collection required for BPR)
- Product storage and bagging
- Molasses unloading, storage and transfer system

With the re-purposing of the plant to produce a Beneficiated Phosphate Rock (BPR), the process become a lot simpler with the MAP and Molasses system not required. In addition, a number of the elements in the granulation plant such as the granulator, cooler, screens and associated equipment, will also not be required.

Provision has been made in the plant layout for a future micronutrient unloading system, to allow micronutrients to be added the EPR.

The plant has initially been designed to comprise a single train, with allowance for up to two additional trains to be constructed and brought on in future years, if and when required.

The Project life is currently 20 years based on the defined Ore Reserve. The DFS production schedule envisages a ramp-up to full production of the facility over seven years, at which time a second train will be installed.

The preliminary production schedule for BPR, based on a throughput of 25tph can be summarised in Table 12-1:

*Table 12-1 Annual production schedule of BPR (ktpa)*

| Year | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13+ |
| 10 | 98 | 98 | 110 | 131 | 156 | 181 | 203 | 241 | 261 | 288 | 316 | ~350 |

## 12.1 Process Plant Description

**Phosphate Rock Unloading and Storage**

Trucks will tip their load of phosphate rock into the phosphate rock delivery bin, from where the material will be transferred to the phosphate rock delivery conveyor by the phosphate rock delivery feeder. The delivery conveyor will transfer the phosphate rock onto the phosphate rock stockpiles via the tripper system.

**MAP Storage and Unloading**

MAP will not be required for production of the BPR. Under production of EPR, MAP will be delivered to site under production of EPR in 1 tonne bulk bag. MAP will be stored in a MAP storage shed. Bags will be collected and unloaded into the MAP hopper by a bag breaker.

**Plant Feed System**

Phosphate rock will be reclaimed from the storage stockpiles by FEL and transferred to the phosphate rock hopper. Phosphate rock will be withdrawn from the hopper by belt feeder and delivered to the phosphate rock crusher. The phosphate rock crusher will be an open circuit cage mill, which will reduce the crush the phosphate rock to <1.4 mm. Crushed phosphate rock will be stored in a surge bin ahead of the plant. Fugitive dust generated by the phosphate rock crusher will be collected by the fugitive dust collector ducting.

Under an EPR scenario, MAP will be withdrawn from the storage hopper and transferred to the MAP crusher by belt feeder. The MAP crusher will be an open circuit chain mill, which will crush the MAP to $P_{100}$ 1.4 mm. Crushed MAP will be stored in a surge bin ahead of the granulation plant. Fugitive dust generated by the MAP crusher will be collected by the fugitive dust collector.

**Plant**

***Beneficiated Phosphate Rock (BPR)***

Ground phosphate rock discharges into the ground phosphate rock screw conveyor before discharging into the ground phosphate rock bucket elevator, which elevates and discharges the rock into the ground phosphate rock hopper. From the ground phosphate rock hopper, the material falls by gravity onto the ground phosphate rock weigh belt, where the ground phosphate rock is weighed and metered into the raw materials screw conveyor.

The raw materials screw conveyor discharges into the boot of the granulator elevator. The granulator elevator transfers the rock, together with the recycled dust from the dust abatement

systems, into the granulator, which is a rotary drum-type. The recycled dust material consists of dust from the underflow streams of the baghouses and cyclone.

The granulator will not be functional and is used to convey the ground phosphate rock to the dryer. Exhaust drawn from the granulator by the granulator fan is treated in the granulator cyclone, a cyclone type dust collection system located in the granulator exhaust duct, which separates the fines entrained in the exhaust. The granulator cyclone underflow fines discharge by gravity into the recycle screw conveyor. From the granulator cyclone, the air is exhausted to the atmosphere through the granulator cyclone stack.

The ground phosphate rock leaves the granulator and discharges by gravity into the dryer, which is a rotary drum-type. The dryer is operated with a co-current airflow heated by a butane gas fired combustion chamber and burner, which is located at the inlet or material feed end of the dryer. The dryer has two fans located upstream that deliver ambient air for combustion and one for dilution or drying, respectively.

An alternative, being considered in the detail engineering design is conveying the material from the phosphate rock crusher directly to the dryer bypassing the granulator and associated conveyors. This will simplify the circuit and allow for a higher throughput.

Exhaust drawn from the dryer by the dryer fan is treated in the dryer baghouse, a baghouse type dust collection system located in the dryer exhaust duct, which separates the fines entrained in the exhaust. The dryer baghouse underflow fines discharge by gravity into the dryer baghouse screw conveyor, which discharges into the recycle screw conveyor. The recycle screw conveyor discharges into the granulator elevator. From the dryer baghouse, the air is exhausted by the dryer fan to the atmosphere through the dryer stack.

The dryer discharges material by gravity onto the dryer discharge weigh belt conveyor, which will be set to transfer the ground, dried phosphate rock to grade before it is moved or conveyed to the product storage warehouse.

The plant is equipped with a fugitive dust collection system. This system consists of a network of pickup ducts connected to a baghouse type dust collector known as the fugitive dust baghouse. Dust from the fugitive dust baghouse is discharged into a recycle screw conveyor where it is returned to the dryer. From the fugitive dust baghouse, the air is exhausted by a fugitive dust fan to the atmosphere through the fugitive dust stack. Subject to marketing, the alternative may be to not recycle the dust but separate it as by-product which will also increase the grade of the BPR.

***Enhanced Phosphate Rock (EPR)***

Crushed phosphate rock and MAP will be withdrawn from the crushed phosphate rock and crushed MAP surge bins by variable speed belt feeders. The belt feeders will be fitted with weightometers for metallurgical accounting purposes. The speed of the feeders can be adjusted to vary the ratio of phosphate rock to MAP as required. The belt feeders will discharge onto a common conveyor which will transfer the phosphate rock and MAP to the granulating drum via a bucket elevator. The plant recycle streams will also report to the bucket elevator for return to the granulating drum.

Raw water and molasses will be added to the feed end of the granulating drum to facilitate granulation. Raw water addition will be controlled to achieve a nominal granulation moisture, expected to be 8 % based on the IFDC test work. Molasses addition will be added by a positive displacement pump, the speed of which will be adjusted to achieve nominally a product molasses concentration of 7% w/w.

The granulated product will discharge directly from the discharge of the granulating drum to a rotary dryer. The rotary dryer will use butane as the fuel source, and will reduce the moisture content of the granulated product to less than 1% w/w.

The dried, granulated product will be transferred to the product screening area by a bucket elevator. The product will be screened over two double deck screens operating in parallel. The top deck will have 4 mm apertures, the oversize from the top deck of each screen will discharge directly to an oversize crusher. The crusher will operate in open circuit and the discharge from each crusher will be collected by the main plant recycle screen conveyor. The bottom deck will have 2 mm apertures, the oversize from this deck, nominally 100% - 4 mm + 2 mm will be the product stream from the plant. The undersize stream from the bottom deck will be collected by the main plant recycle conveyor for return to the granulating drum. The -4 mm + 2 mm product stream from each screen will pass through a product splitter diverter. The product splitter will divert a portion of the stream to product and the balance will be directed to the main plant recycle conveyor. The diverter will be key to the operation of the plant and may divert all of the -4 mm + 2 mm produce steam to recycle if required. The diverter will be adjusted to control the recycle rate of the plant, which will be nominally 3.

The portion of the -4 mm + 2 mm stream diverted to product will be cooled in a rotary cooling drum. The discharge from the cooler will be transferred to a polishing screen to remove any fines from the final product stream. Screen undersize from the polishing screen will be returned to the granulating drum feed by a recycle screw conveyor. The oversize from the screen will be transferred to the product bagging area by a belt conveyor. The belt conveyor will have a weightometer which will be used for metallurgical accounting purposes.

The dryer and cooler will have dedicated baghouse type dust collectors. The discharge from each dust collector will be returned to the granulating drum feed bucket elevator by recycle screw conveyors. Filtered air from the dryer and cooler dust collectors will be disposed of to atmosphere via stacks that discharge the cleaned air above the roof of the granulation plant. The exhaust gases from the granulating drum will be cleaned by a cyclone, with the cleaned air discharged to atmosphere by a stack. The dust from the cyclone will be returned to the granulating drum feed via a screw conveyor.

Dust will be collected from the various transfer points in the plant and directed to the fugitive dust baghouse for cleaning.

**Product Bagging**

Product will be withdrawn from the product bin through a chute that will feed the bagging station. The bagging station operation will be semi-automatic, with an amount of operator input required. The bagging station is designed to fill up to 30t/hour in either bulk or 50 kg bags, with some operator input required. The filled, sealed bag will then be conveyed to an elevated position to allow ergonomic manual movement of the bag onto a pallet.

In general, plant and equipment included in the design have been specified to the standard of design required by the relevant Australian or accepted international standards.

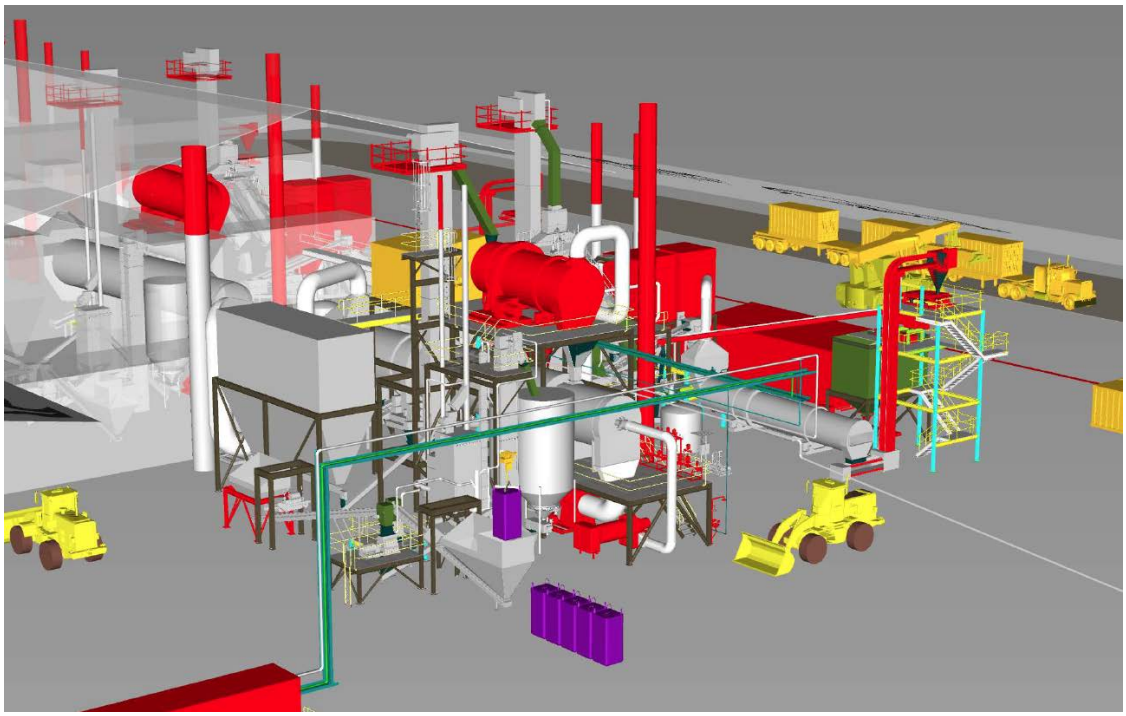


*Figure 12-1 Oblique view of the Processing Plant*

## 13 PROJECT INFRASTRUCTURE

Mined phosphate rock will be transported from the Cácata Mine to the plant at Futila by the EN201 main road using 30 tonne trucks. The trucks will use existing roads other than a new section of road from the mine to the existing main road. The new section of road will be an un-sealed gravel road, the existing main road between the mine and the plant is asphalt paved.

It is envisaged that transport of phosphate rock from the mine to the Port will be undertaken by contractors, possibly the same contractor undertaking the mining. At a 50 kt/y Beneficiated Phosphate Rock production rate, there will be approximately five to seven round trip truck movements per day expected during daylight hours.

Raw water supply for the plant will be supplied from a bore which will be drilled on site.

Potable water for the plant will be supplied by treating the raw water from the bore.

The nominal power demand for the plant is approximately 941 kW when granulating EPR and lower when producing BPR. The power supply for the plant will be supplied from the nearby 30 kV power lines, reticulated deriving with an aerial line of approximately 150 meters, until reaching a primary cabin composed of a switch gear with a circuit breaker appropriate to supply a load of 2 MVA.

HV power will be supplemented by power generated on site by diesel fuelled gensets for periods when HV power is unavailable. Power will be generated at 400V by two 750 kVA generators, operating in sync, supplying power to the process plant.

In addition to the mine site access and haulage roads, on-site access roads will be provided within the plant complex to provide easy access between the various facilities. In general road design will incorporate 8 m width and 30 m turning radii on intersections to cater for heavy construction and operations traffic. The design includes sealed car parking areas at the administration and workshops areas.

A Membrane Bio Reactor (MBR) wastewater treatment plant of 10 kL/day capacity has been allowed for. The wastewater treatment plant will process waste from the processing plant ablutions and the effluent stream from the potable water plant. The plant will process sewage and other plant wastewater streams to a suitable quality (High Exposure Risk Level, also known as class A), so that it will have the ability to discharge to the environment.

Diesel is primarily used for backup power generation; dedicated pumps deliver diesel to the 1,250 litre tank on each genset as required. The facility will include drive over concrete bunded slabs and refuelling arms for the phosphate rock transport vehicles.

The processing plant has been purchased with the capacity to use either butane or diesel as the fuel source. The plant dryer will be fed from these two self-bunded - double walled 28,750 litre tanks. Diesel will be offloaded from the delivery tankers by a dedicated pump, dedicated duty/standby pumps will deliver diesel to the dryer on a continuous basis.

Sufficient space in the layout has been allowed for an additional tank to meet future butane storage requirements. Butane will be offloaded from delivery tankers by a dedicated pump. Butane is solely used as fuel for the Granulation plant dryer. Liquid butane will be vapourised to gaseous form and delivered to the dryer by a dedicated butane line. Alternatively, a Build Own Operate (BOO) model is being considered where an external third party will supply, maintain and operate the butane storage

Plant and instrument air will be supplied by two rotary screw air compressors in a duty/standby arrangement. Air will be compressed to nominally 10 bar and dried using a separate refrigerated type dryer. Dried air will be stored in a 1.24 $m^3$ air receiver and distributed throughout the plant by a piping network.

An on-site laboratory is planned to provide to provide assay services for both the plant metallurgical control samples and a small amount of mine grade control samples and the plant metallurgical control samples. The laboratory will include separate areas for sample preparation, sample, spares and reagents storage and office, laboratory and instrument rooms. A BOO model is also being considered for the laboratory.

A plant site layout has been developed (Figure 13-1) which includes:

- Phosphate rock delivery system
- Phosphate rock storage
- Space for a future micronutrient unloading system
- MAP storage
- Granulation/Beneficiation plant
- Product storage and bagging
- Future Molasses unloading, storage and transfer system
- Diesel unloading, storage and transfer system
- Butane unloading, storage and transfer system
- Power generation and distribution system
- Raw water storage and distribution system
- Plant wastewater treatment system
- Plant air generation, storage, and distribution system
- Administration building
- Workshop and warehouse building

- Laboratory
- Container storage area
- Laydown area

*Figure 13-1 3D model showing site layout*

## 14 LOGISTICS AND SHIPPING

The import of raw materials, as well as the export of final product, will be via the Cabinda Port, which is currently being upgraded. The construction of Porto de Caio (PdC) (Figure 14-1), located in Cabinda Province, is underway and is expected to be completed in 2025. Once complete, it is anticipated all Company imports and exports will eventually be routed via the PdC facility.

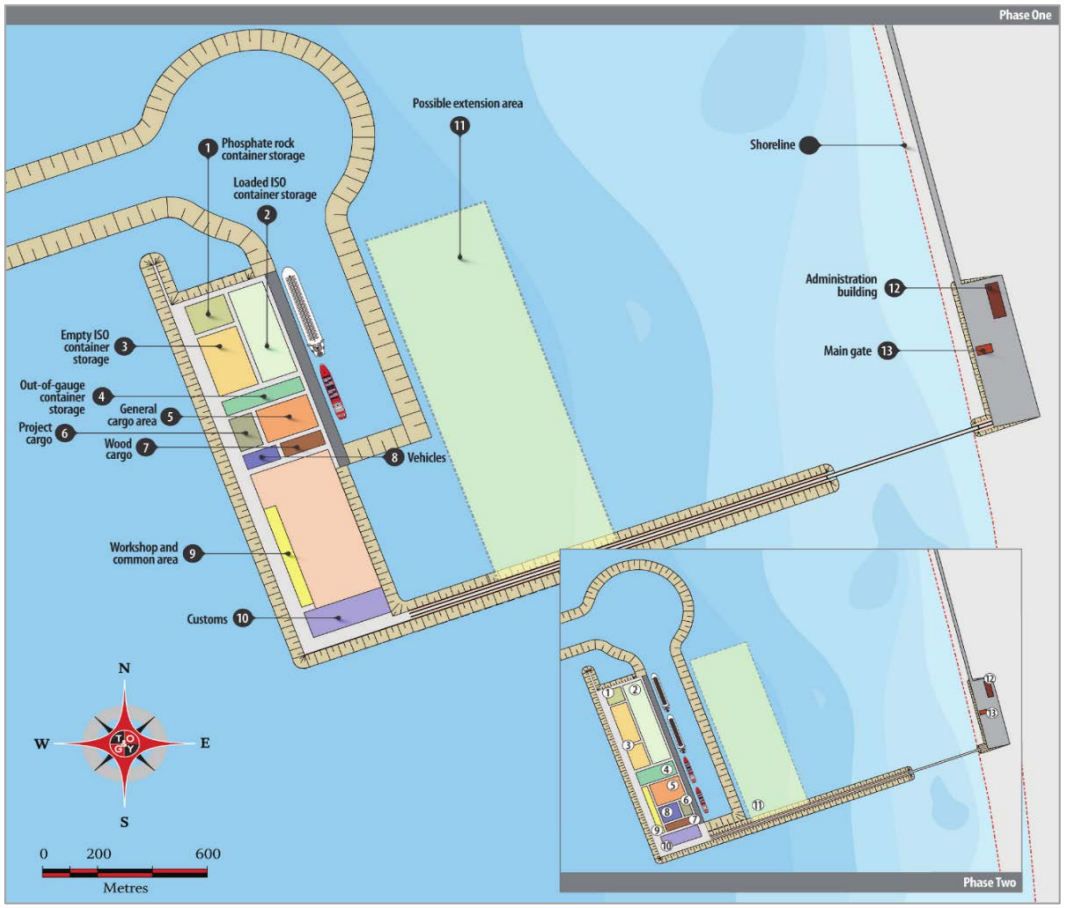



*Figure 14-1 Porto de Caio Phase 1 and 2*

## 15 ENVIRONMENTAL STUDIES, SOCIAL OR COMMUNITY IMPACT

Environmental and social baseline studies at Cácata and Futila were initially carried out in 2011/12 by Prime Resources. Given the lag time from development, further studies including wet and dry season surveys, were carried out by HCV Africa in 2021/22 addressing:

- Air quality and GHG
- Hydrogeology
- Hydrology
- Noise & Vibration
- Soils and land Capability
- Aquatic ecology
- Fauna (terrestrial: herpetofauna and avifauna and mammals)
- Botany
- Herpetology

- Socio-economics and Cultural heritage
- Traffic, and
- Waste Management

The following environmental assessment legal and administrative documents in force in Angola, were used to guide the preparation of the Environmental Impact Study (EIS) and Waste Management Plan (WMP) for submission to local authorities.

- Constitution of the Republic of Angola (Constituição da República de Angola, 2010 – in particular articles 21, 39 and 89);
- General Environmental Law (Law No. 5/98, of 19th June);
- Presidential Decree on Environmental Impact Assessment and Environmental Licensing Procedure (Presidential Decree No. 117/20, of 22nd April);
- Join Executive Decree No. 130/09 of 29th November, about environmental licensing taxes;
- Executive Decree No. 87/12 on regulation for public consultations for projects subject to EIS;
- Executive Decree on the Terms of Reference for the Elaboration of EIS (Executive Decree No. 92/12, of 1st March); and
- Regulation on Waste Management (Presidential Decree No. 190/12, of 24th August).

An Environmental, Impact and Social Assessment (EISA) plan was developed for each site and is being submitted to the government to for the application of a Construction Licence and Operational licence. The studies confirmed that with good management practices and design the project can be developed with minimal impacts.

The different phases of the Project will have an impact on the environment. Actions that involve altering the Cácata site include cutting and clearing vegetation, the removal of topsoil, the generation of stockpiles, ground conditioning and excavation, paving, the construction of entrance routes and construction of perimeter fencing. Material will be removed by excavation, loaded, and transported to the processing plant. Mine waste material will be stored both on surface waste dumps and back filled into completed pits.

The different phases of the Project involve an ongoing impact on air quality and noise in the area local to the Plant, primarily through the generation of dust.

The main impacts on the soil will result from the removal and stockpiling thereof, a necessary action in order to engage in this activity.

The development of the mining project involves removing the vegetation present in the area which will mean the temporary loss of habitats which will be progressively restituted, to the extent possible, through the environmental restoration of the area affected.

The Project involves a series of socio-economic benefits for local and regional development via the creation of direct and indirect jobs, and the generation of revenue via licenses, fees and taxes which will be maintained in different ways throughout all phases of the Project. A number of social programs are currently being investigated and implemented around education, health, and employment. A Relocation Assistance Program (RAP) is required and is underway for farming property in the mining area

The investments made for the Project and the hiring of personnel for the completion of the different phases thereof will produce benefits for the regional economy as well as create direct and indirect jobs. This is one of the main factors for the social acceptability of the Project.

# 16 CAPITAL COST ESTIMATE

## 16.1 Initial Capital Cost Summary

The initial capital cost estimate for the Processing Plant is presented in August 2022 United States Dollars (USD) to a DFS level accuracy of ±15-20%. The estimate has been divided into direct costs and indirect costs by area (Table 16-1).

As at September 2022, the remaining capital cost for the construction of the Processing Plant is approximately USD 48.5M. This is because, in 2021, the Company made the decision to place orders for the Project's long lead items and since then payments have been made.

The initial capital cost requirement for establishing the Cácata Phosphate Mine (Table 16-2), is minimal due to the simplicity of the mine operations and because a mining contractor will be utilised and will supply their equipment and infrastructure.

*Table 16-1 Cabinda Granulation Plant Initial Capital Cost Estimate*

| COST CATEGORY | | CAPEX VALUE (USD) |
|---|---|---|
| **WBS** | **CONSTRUCTION DIRECT & INDIRECT COSTS** | |
| 000 | Site Wide | 1,534,061 |
| 1000 | General | 1,859,927 |
| 2000 | Earthworks | 1,462,869 |
| 2100 | Roads | 546,810 |
| 3100 | Phosphate Rock & MAP Storage | 4,660,660 |
| 3300 | Processing Plant – Common | 2,991,869 |
| 3310 | Processing Plant – Train 1 | 11,130,743 |
| 3400 | Product Bagging Plant – Common | 733,908 |
| 3500 | Product Storage | 8,254 |
| 3600 | Reagents | 91,655 |
| 4100 | Water Storage and Reticulation | 940,617 |
| 4300 | Compressed Air | 223,435 |
| 5100 | Power Reticulation | 2,807,781 |
| 5300 | Fuel Storage and Reticulation | 287,402 |
| 5400 | Gas Storage and Reticulation | 697,718 |
| 5500 | Site Buildings and Offices | 1,421,097 |
| 5600 | Workshops, Stores | 1,120,910 |
| 5700 | Laboratory | 1,153,044 |
| 5800 | Communications | - |
| 5900 | Security | - |
| | | |
| | **Construction Direct and Indirect Costs Sub-Total** | **33,672,761** |
| **EPCM COSTS** | | |

| COST CATEGORY | | CAPEX VALUE (USD) |
|---|---|---|
| WBS | CONSTRUCTION DIRECT & INDIRECT COSTS | |
| Engineering Design/Draft Labour | | 574,826 |
| Project Management & Services Labour | | 383,801 |
| Construction Management Labour | | 4,434,928 |
| Commissioning Labour | | 137,305 |
| Project Expenses | | 663,703 |
| Commissioning Trade Support | | 343,262 |
| Vendor Representatives | | 337,109 |
| Geotech Consultant – Design | | 60,000 |
| Geotech Consultant – QA/QC | | 150,000 |
| Third Party Engineering Consultants | | 100,000 |
| Third Party Survey | | 209,483 |
| Inspection and Expediting | | 200,000 |
| | **EPCM Costs Sub-Total** | **7,587,882** |
| **OWNER'S COSTS** | | |
| Project Team | | 598,200 |
| Pre-Production Ops | | 1,558,923 |
| Mobile Fleet (In Plant) | | 3,350,000 |
| Insurances | | 410,000 |
| Spares (FEECO) | | 668,276 |
| Spares (Other Packages) | | 172,410 |
| First Fills | | 35,000 |
| Foreign Exchange | | - |
| Escalation | | - |
| | **Owner's Costs Sub-Total** | **6,792,809** |
| Contingency | | **6,121,192** |
| | | |
| **TOTAL COST ESTIMATE** | | **54,174,644** |

*Table 16-2 Cácata Phosphate Mine Initial Capital Cost Estimate*

| COST CATEGORY | CAPEX VALUE (USD) |
|---|---|
| Operating equipment | 142,000 |
| Site infrastructure | 576,000 |
| Relocation Assistance Program | 109,998 |
| Pre-Production Ops | 562,331 |
| | |
| **TOTAL COST ESTIMATE** | **1,390,329** |

## 16.2 Expansion Capital Costs

The design for the Processing Plant includes an expansion to a second and third train. Each train would have a production capacity of approximately 187.5 ktpa, based on a throughput for BPR of 25 tph. The Base Case model anticipates implementation of a second train in the 7th year of the Project. The Base Case does not anticipate a third train, but it remains an option should growth in customer demand call for it. It is required for the growth estimates of the Best Case.

The capital cost in real dollars is the same for both the second and third trains (Table 16-3).

*Table 16-3 Cabinda Granulation Plant Expansion Capital Cost Estimate*

| COST CATEGORY | | CAPEX VALUE (USD) |
|---|---|---|
| **WBS** | **CONSTRUCTION DIRECT & INDIRECT COSTS** | |
| 1000 | General | 1,859,927 |
| 2000 | Earthworks | 1,462,869 |
| 3100 | Phosphate Rock & MAP Storage | 4,108,985 |
| 3310 | Processing Plant – Train | 9,029,432 |
| 3400 | Product Bagging Plant – Common | 577,965 |
| 3500 | Product Storage | 8,254 |
| 3600 | Reagents | 91,655 |
| 4100 | Water Storage and Reticulation | 435,841 |
| 4300 | Compressed Air | 223,435 |
| 5100 | Power Reticulation | 2,807,781 |
| 5300 | Fuel Storage and Reticulation | 287,402 |
| 5400 | Gas Storage and Reticulation | 697,718 |
| | | |
| | **Construction Direct and Indirect Costs Sub-Total** | **21,591,264** |
| **EPCM COSTS** | | |
| Project Management & Services Labour | | 141,523 |
| Construction Management Labour | | 2,845,390 |

| COST CATEGORY | CAPEX VALUE (USD) |
|---|---|
| Commissioning Labour | 86,365 |
| Project Expenses | 299,098 |
| Commissioning Trade Support | 336,728 |
| Vendor Representatives | 337,109 |
| Geotech Consultant – QA/QC | 150,000 |
| Third Party Engineering Consultants | 100,000 |
| Third Party Survey | 209,483 |
| Inspection and Expediting | 200,000 |
| **EPCM Costs Sub-Total** | **4,705,695** |
| **OWNER'S COSTS** | |
| Project Team | 598,200 |
| Insurances | 410,000 |
| Spares (FEECO) | 668,276 |
| Spares (Other Packages) | 172,410 |
| First Fills | 35,000 |
| **Owner's Costs Sub-Total** | **1,883,886** |
| | |
| **TOTAL COST ESTIMATE** | **28,180,845** |

## 16.3 Sustaining Capital Costs

Sustaining capital costs are based on an allowance of 2% of existing Processing Plant and mobile equipment and a 4% allowance of existing mine equipment.

# 17 OPERATING COST ESTIMATE

The Project operations are run by two Angolan companies:

1. One operating the Cácata Phosphate Mine, in accordance with the Angolan Mining Code and a Mining Investment Contract made with MIREMPET (Ministério dos Recursos Minerais, Petróleo e Gás *or the Ministry of Mineral Resources, Petroleum and Gas*).
2. Another operating the Cabinda Granulation Plant and the distribution of fertilizer product, for which specific obligations and incentives apply under a Private Investment Contract held with AIPEX (Agencia de Investimento Privado e Promoção das Exportações de Angola *or the Agency for Private Investment and Promotion of Angolan Exports*).

The operating cost estimate is presented in August 2022 United States Dollars (USD) to a DFS level accuracy of ±15 %.

A summary of operating costs of the Cácata Phosphate Mine are provided in Table 17-1:

*Table 17-1 Summary of Mining Cost*

| Item | LOM ($M) | $ / t | | |
|---|---|---|---|---|
| | | Years 1-5 Average | Years 6-10 Average | LOM Average |
| **Mining Contractor** | | | | |
| Mobilisation, Establishment & Demobilisation | 1.28 | 1.46 | 0.46 | 0.27 |
| Preliminary Works | 2.92 | 2.72 | 0.47 | 0.62 |
| Management, Supervision & Dewatering | 20.00 | 4.26 | 5.15 | 4.24 |
| Mining - Load & Haul | 44.61 | 6.38 | 10.62 | 9.46 |
| Miscellaneous Allowance | 1.34 | 0.19 | 0.32 | 0.28 |
| Ore Transport | 55.56 | 11.99 | 11.80 | 11.78 |
| Rehabilitation | 10.21 | - | 0.06 | 2.16 |
| **Subtotal** | **135.92** | **27.00** | **28.88** | **28.82** |
| **Owner's Costs** | | | | |
| Owner's Operating Costs | 11.91 | 4.76 | 2.37 | 2.53 |
| **TOTAL** | **147.84** | **31.76** | **31.26** | **31.34** |

A summary of operating costs of the Cabinda Processing Plant are provided in Table 17-2. Note that phosphate rock from the Cácata mine is classified as a reagent and consumable of the Processing Plant.

*Table 17-2 Summary of Processing Plant Cost*

| Item | LOM ($M) | $ / t | | |
|---|---|---|---|---|
| | | Years 1-7 Average | Years 8-15 Average | LOM Average |
| **Plant Operating Cost** | | | | |
| Reagents & Consumables | 212.99 | 45.16 | 33.78 | 45.16 |
| Labour - Processing, Laboratory, Maintenance | 25.85 | 8.92 | 3.68 | 5.48 |
| Power | 3.43 | 0.80 | 0.54 | 0.73 |
| Maintenance | 20.55 | 4.67 | 3.22 | 4.36 |
| Miscellaneous | 5.73 | 2.33 | 0.77 | 1.22 |
| **Subtotal** | **268.6** | **61.9** | **42.0** | **56.9** |
| General & Administrative | 77.72 | 27.98 | 10.27 | 16.48 |
| **TOTAL** | **346.3** | **89.9** | **52.3** | **73.4** |

# 18 ECONOMIC ANALYSIS

## 18.1 Project Results (85% ownership)

The Project has been evaluated using discounted cash flow (DCF) analysis. The Net Present Value (NPV) of the Project was calculated by discounting back cash flow projections throughout the life-of-mine to the Project's valuation date using three different discount rates, 8%, 10%, and 12%. The Base Case uses a discount rate of 10%, based on a WACC calculation and in which the Cost of Debt included a 1.75% risk premium for Angola. The internal rate of return (IRR) and the payback period were also calculated.

Key financial highlights of the DFS are presented (in USD millions) in Table 18-1.

*Table 18-1 Key Financial Highlights*

| Scenario | Base Case | | | Spot Price Case* | | |
|---|---|---|---|---|---|---|
| Real Discount Rate | After-Tax NPV | After-Tax IRR | Payback Period | After-Tax NPV | After-Tax IRR | Payback Period |
| 8% | 255.8 | 39% | 4.8 | 491.8 | 61% | 3.6 |
| 10% | 203.2 | | | 399.4 | | |
| 12% | 162.3 | | | 327.5 | | |

* *The BPR product price is derived from the price of Triple Superphosphate (origin Tunisia, FOB) of which the current price quoted by the World Bank is the August 2022 price of USD 703.75/t. This derives a BPR spot price of USD 495.84/t*

## 18.2 Scenario Analysis

Due to significant changes in fertilizer pricing in the past two years the project financial analysis includes an examination of a number of scenarios. The key differences are (i) market growth scenario; (ii) fertilizer spot price versus long-term historical average; and, (iii) real verses nominal cash flows.

Table 18-2 presents the results of the scenario analysis.

*Table 18-2 Project Scenario Analysis*

| Scenarios | Base | Spot | | Best | Worst | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Real or Nominal Cash Flows | Real | Real | Real | Real | Real | Real | Nominal | Nominal | Nominal |
| Market Growth Scenario | Mean | Mean | High | High | Low | Low | Mean | High | Low |
| Project Years | 20 | 20 | 15 | 15 | 28 | 28 | 20 | 15 | 28 |
| Triple Superphosphate price* | 422 | 704 | 422 | 704 | 422 | 704 | 422 | 704 | 422 |
| BPR price per tonne (USD) | 326 | 496 | 326 | 496 | 326 | 496 | 326 | 496 | 326 |
| Plant Capex - Train 1 (USD M)** | 48.5 | 48.5 | 48.5 | 48.5 | 48.5 | 48.5 | 48.5 | 48.5 | 48.5 |
| Plant Capex - Train 2 (USD M) | 28.2 | 28.2 | 28.2 | 28.2 | 28.2 | 28.2 | 53.4 | 53.4 | 53.4 |
| Plant Capex - Train 3 (USD M) | n/a | n/a | 28.2 | 28.2 | n/a | n/a | n/a | 57.80 | n/a |
| Inflation on Capex*** | n/a | n/a | n/a | n/a | n/a | n/a | 8.3% | 8.3% | 8.3% |
| Inflation on Opex*** | n/a | n/a | n/a | n/a | n/a | n/a | 3.2% | 3.2% | 3.2% |
| Inflation on Price*** | n/a | n/a | n/a | n/a | n/a | n/a | 2.2% | 2.2% | 2.2% |
| Further Funding Required (USD M) | 36.7 | 36.7 | 36.7 | 36.7 | 43.3 | 43.3 | 36.7 | 36.7 | 43.3 |
| After Tax Discount Rate | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% | 12.2% | 12.2% | 12.2% |
| Payback Period (years) | 4.8 | 3.6 | 3.5 | 2.9 | 8.7 | 6.0 | 4.7 | 3.1 | 8.6 |
| Internal Rate of Return | 39% | 61% | 61% | 97% | 20% | 31% | 41% | 95% | 21% |
| After Tax NPV (USD M) | **203.2** | **399.4** | **311.5** | **585.0** | **86.2** | **203.9** | **190.8** | **572.8** | **68.5** |

* USD422/t is the 15-year average price for bulk TSP, Tunisia origin FOB, based on historical prices published by the World Bank. USD 703.75 is the World Bank published price for August of TSP at Tunisia origin FOB.

** This is the value of Capex that remains to be ordered and paid for, which is lower than the complete Construction Capital Cost of USD 52.6M.

*** Capex Inflation is based on the current annual inflation rate for the United States being 8.3% for the 12 months ended August 2022. Opex inflation is based on the US long-term average inflation rate is 3.2%. Price Inflation rate for fertilizer prices was derived from the 20-year history of TSP prices published by the World Bank.

## 18.3 Cumulative Cash Flow

Cumulative cash flow after-tax is depicted in Figure 18-1, Year 0 is 2022, and Year 1 is 2023. Year 1 is the commencement of production, albeit towards the end of that year.

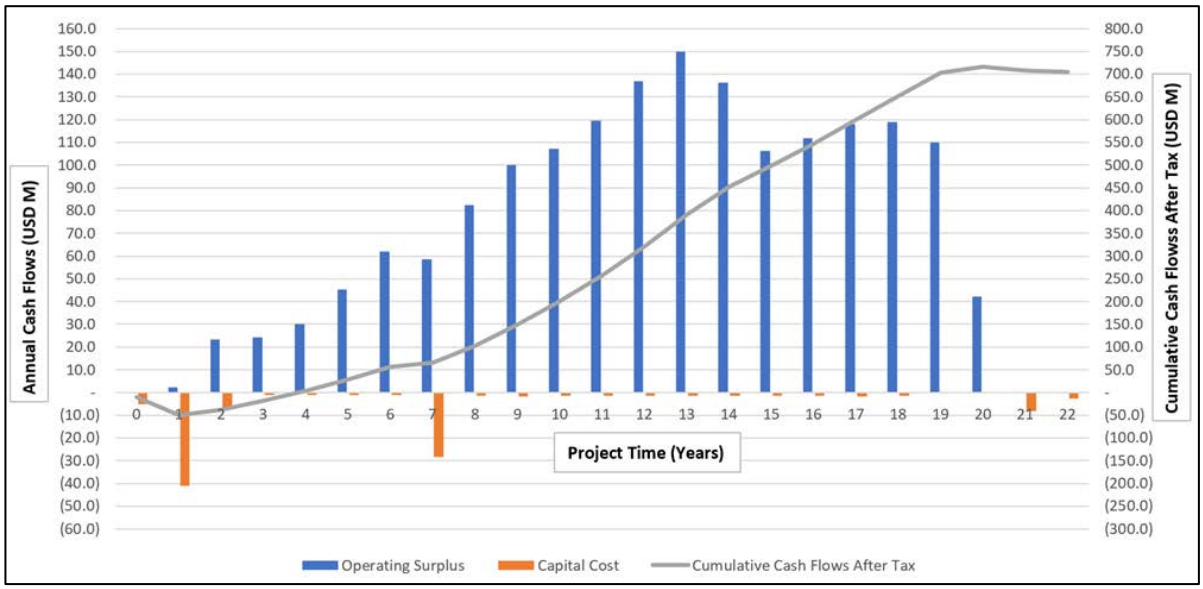



*Figure 18-1 Project Cumulative Cash Flows After Tax*

## 18.4 Sensitivity Analysis

A sensitivity analysis was performed on the after-tax NPV of the Project Base Case by varying the key variables (Table 18-3). Each assessment was done independent of the others. The results are shown in Figure 18-2.

*Table 18-3 Sensitivity Analysis of after-tax NPV of the Base Case*

| Sensitivity | WACC | TSP Price | Tax Years incentives | USDAOA ex-rate | Initial Capex | Mine Cost/t | Plant Consumables/t | Plant Labour/t |
|---|---|---|---|---|---|---|---|---|
| Base Case - 20% | 255.76 | 145.90 | 186.71 | 199.46 | 209.06 | 207.53 | 205.25 | 207.75 |
| Base Case | 203.16 | 203.16 | 203.16 | 203.16 | 203.16 | 203.16 | 203.16 | 203.16 |
| Base Case + 20% | 162.31 | 260.87 | 216.53 | 205.62 | 197.32 | 201.23 | 201.06 | 198.56 |

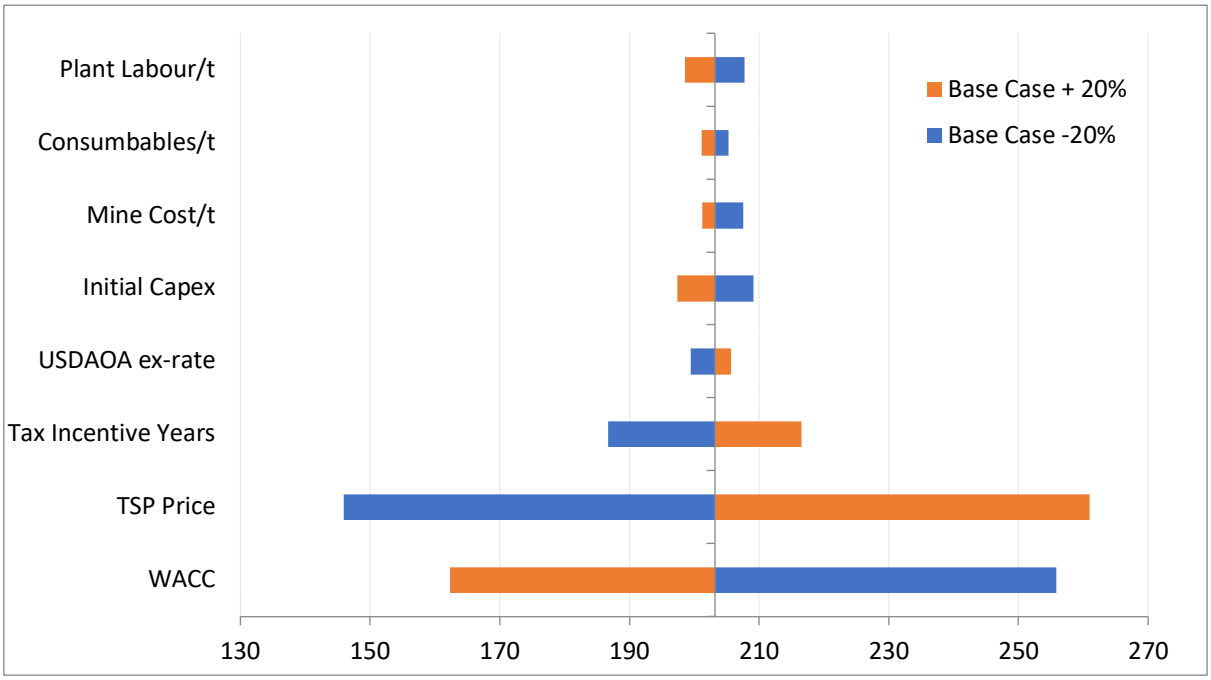



*Figure 18-2 +/- 20% Sensitivity – Impact on NPV*

## 18.5 Project Structure

Minbos holds 100% interest in the Mining Investment Contract and Mining Licence for the Cácata Phosphate Deposit. It is establishing the following three company structure for the Project:

1. Angolan mining company that will operate the Cácata Phosphate Mine, and for which the investment is governed by the Angolan Mining Code and the Mining Investment Contract with MIREMPET (Ministério dos Recursos Minerais, Petróleo e Gás *or the Ministry of Mineral Resources, Petroleum and Gas*).
2. Angolan fertilizer production and distribution company that will operate the Cabinda Granulation Plant, and for which the investment is governed by the Private Investment Contract with AIPEX (Agencia de Investimento Privado e Promoção das Exportações de Angola *or the Agency for Private Investment and Promotion of Angolan Exports*)
3. Mauritian parent company of both the Angolan companies, a wholly owned subsidiary of Minbos Resources Ltd and the Special Purpose Vehicle (SPV) for the project.

The Mauritian company, Phobos Ltd, will hold an 85% ownership of the two Angolan companies. The 15% minority interest in both companies will be held by the same three strategic Angolan shareholders. Figure 18-3 depicts the Project Structure.

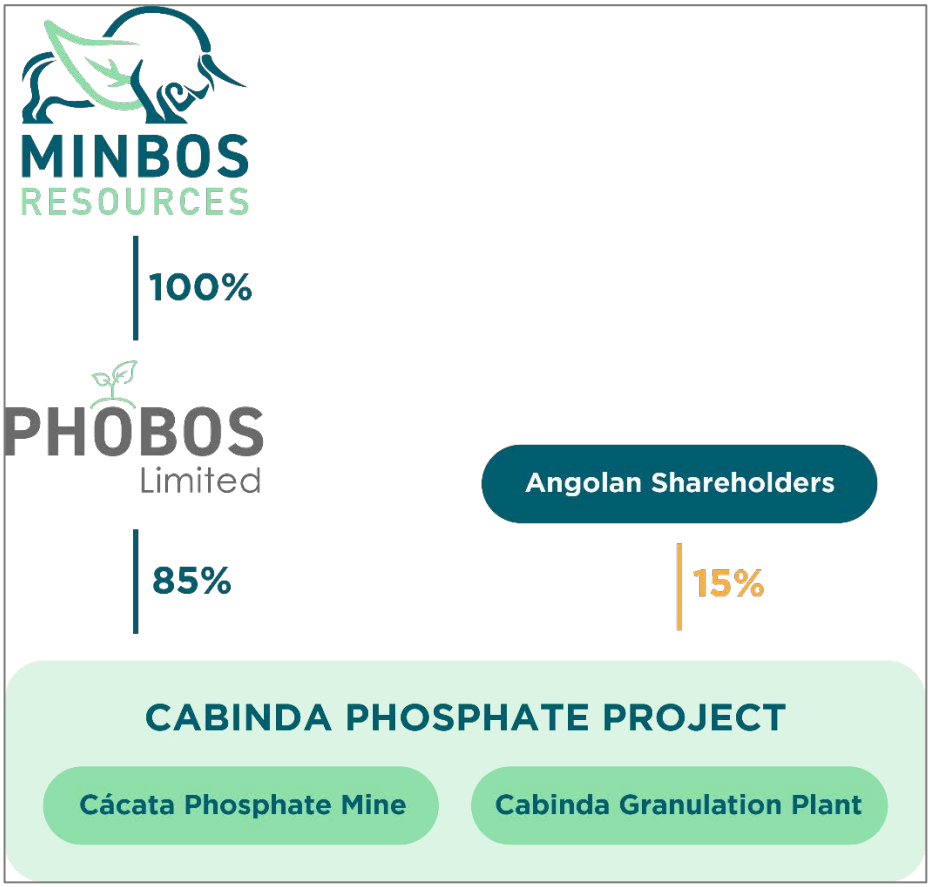



*Figure 18-3 Project Structure*

The cash flow projections used for the Discounted Cash Flow valuation are those of Phobos Ltd, and therefore represent cash flows after Angolan taxes and distributions to Angolan shareholders.

## 18.6 Economic Assumptions

### 18.6.1 Taxation in Mauritius

The SPV is incorporated in Mauritius as a Non-Investment Holding GBC (Global Business Corporation) and its Core Income Generating Activities (CIGA) are deriving interest income, agreeing funding terms, setting the terms and duration of any financing, as well as monitoring and revising any agreements and managing any risks in Mauritius. As the SPV it will secure the project financing and provide lending and investment to the Angolan companies.

The SPV will satisfy the substance requirements of the Partial Exemption Regime (PER) and therefore is exempt of tax on 80% of certain income streams such as dividend and interest income.

Substance requirements are (i) carries out its CIGA from Mauritius; (ii) employs, directly or indirectly, an adequate number of suitably qualified persons to conduct its CIGA; and (iii) incurs a minimum expenditure proportionate to its level of activities. The minimum annual expenditure is USD 15,000 and the minimum employment in Mauritius is 1 if the annual turnover is less than USD 100M.

Foreign dividend and interest income is 80% exempt under PER, thus reducing the applicable 15% tax rate to 3%.

Royalty income received from abroad is subject to tax at the rate of 15%. Any tax withheld from abroad will be allowed as a foreign tax credit. Withholding Tax (WHT) on Royalties in Angola is 10%.

There is no WHT on interest payments made by the SPV to its Australian parent Minbos Resources Ltd.

Tax losses can be carried forward for 5 consecutive years.

There is no Capital Gains Tax.

### 18.6.2 Taxation in Angola

Corporate Income Tax (CIT) rate is 25%. Under the Mining Investment Contract there is an exemption from CIT for the first five years of operations. Under the Private Investment Contract the CIT can be negotiated to as low as 1.25% for businesses in Cabinda Province for a period up to 15 years for each phase of investment, depending on the size of investment and the number of local employees.

Tax losses can be carried forward for 5 consecutive years. However, there is no time limit for mining companies, provided the losses applied do not exceed 50% of the exploitation revenues.

10% withholding tax (WHT) on payments made for technical assistance and management services rendered by non-resident entities. 15% WHT on services provided by non-resident entities. Royalties are subject to 10% WHT.

Interest WHT of 10% applies to shareholder loans and 15% for other loans.

Deemed interest withholding may also apply in the case of non-interest bearing loans. A minimum annual interest rate of 6% is deemed on loan agreements and credit facilities, except if another rate is proven through a written and stamped contract.

Dividend WHT will apply at a rate of 10%. The Mining Investment Contract has an exemption for the first five years of operations. For non-mining companies operating in the Cabinda Province, Dividend WHT can be reduced to 1% for at least 8 years under the Private Investment Contract.

Private Limited Liability companies (which will be the case for Cabinda Phosphate Project) are required to constitute a legal reserve in an amount never less than 30% of the share capital at the end of the financial year, if the legal reserve is not constituted, the shareholders must allocate a minimum of 5% of the profits for its (re)constitution.

Tax depreciation is allowed in respect of all tangible fixed assets (except land) on the basis of their normal useful life. As a general rule, depreciation must be calculated using the straight-line method. The tax authorities may allow the taxpayer to apply other depreciation methods on the grounds that they are more suitable to the company's economic activity, for example mining.

An increase of 25% in the depreciation rate may apply to tangible fixed assets used in two-shift operations. In a continuous operation, an increase of 50% of the depreciation rate may be applicable.

### 18.6.3 Currency and Exchange Rates

The Project is estimated in United States Dollars (USD).

Where applicable, the estimate uses the exchange rates listed in Table 18-4, which were current as of September 2022.

No work has been conducted in this study to evaluate potential currency fluctuations in the future.

*Table 18-4 Exchange Rates (OANDA)*

| CURRENCY | USD |
|---|---|
| United States Dollar (USD) | 1.00 |
| Australian Dollar (AUD) | 1.50 |
| South African Rand (ZAR) | 17.50 |
| Euro (€) | 1.00 |
| Angolan Kwanza | 430 |

# 19 IMPLEMENTATION

An EPCM contract model has been selected for the implementation strategy for the Project. An EPCM contractor, EPC Engenharia, has been engaged by Minbos to provide detailed design, procurement, construction management and commissioning activities for the Plant and associated infrastructure required for the development of the Project from commencement to completion of commissioning. EPC Engenharia has commenced work under a Limited Notice to Proceed (LNTP) whilst a formal contract is being finalisd.

The duration to complete the design and construction of the physical works is estimated at sixteen (16) calendar months inclusive of early engineering work to prepare procurement packages for long lead equipment items, project preliminaries and commissioning (plant ready for introduction of ore). The company is currently 5 months into this schedule.

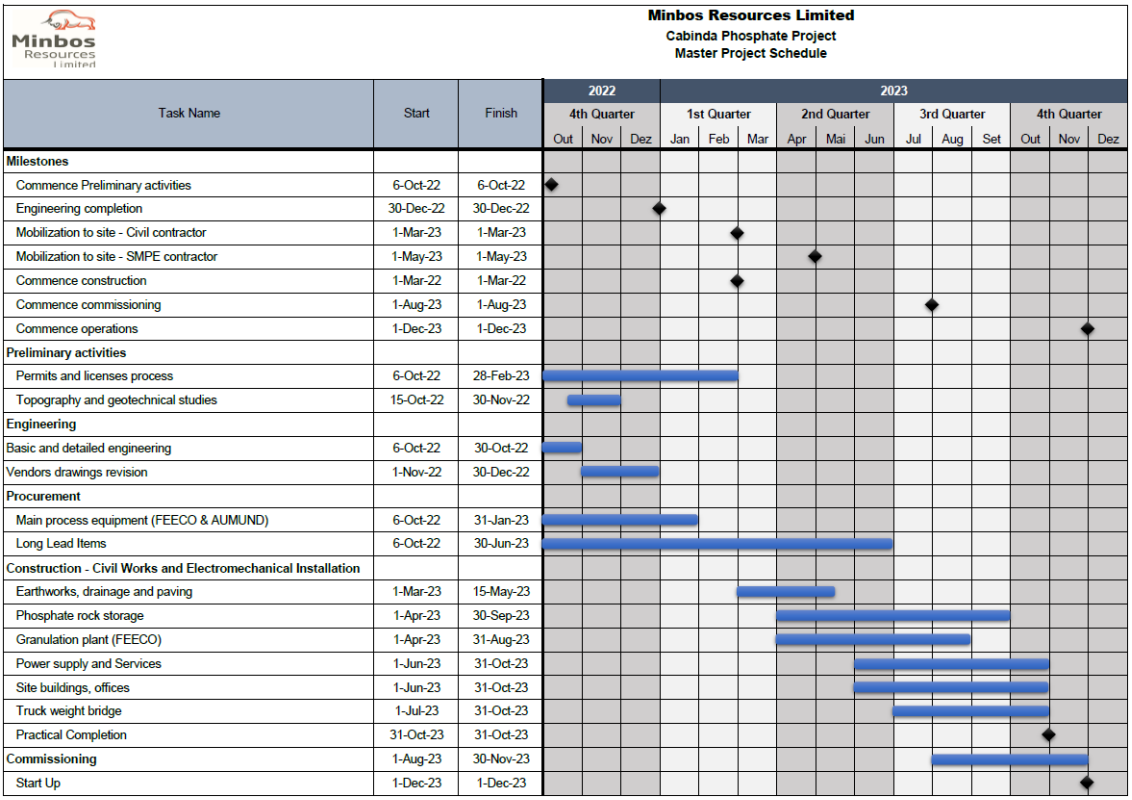



*Figure 19-1 Project Schedule*

## 20 RISK ANALYSIS

A Project risk review was undertaken as part of the DFS. The risk review was conducted in accordance with Australian Standards ISO 31000:2018. Risk scoring was completed for the current risk and for residual risk, taking account of planned future mitigation measures. No extreme risks were found. Fourteen current rating high risks and 37 current rating medium risk items were identified, which reduce to 26 residual rating medium and 51 low residual risk items after controls. This is typical for a project at DFS level where certain technical risks remain until detailed design work has been undertaken.

Actions required during the detailed design phase and into project development and operations phase to mitigate the risks were identified. These actions form the basis of the scopes of work, budget and schedule for the detailed design phase.

# Appendix 1 – JORC (2012) Table 1

## Section 1: Sampling Techniques and Data

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| ***Sampling techniques*** | • *Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate for the minerals under investigation, such as downhole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.*<br>• *Include reference to measures taken to ensure sample representativity and the appropriate calibration of any measurement tools or systems used.*<br>• *Aspects of the determination of mineralisation that are Material to the Public Report.*<br>• *In cases where 'industry standard' work has been done; this would be relatively simple (e.g., '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 (e.g., submarine nodules) may warrant disclosure of detailed information.* | • Primary Mineral Resource drilling used Aircore drilling (a Reverse Circulation drilling type where samples retrieved are pulverized in the drilling process.) to obtain 1m samples. Full samples were collected at the drill site.<br>• Confirmation drilling in selected locations was by conventional diamond drilling and collected core for the target horizon and some of the overburden.<br>• Sample weights of the Aircore drilling were monitored against expected recoveries. Twin twinning of drillholes with both Aircore and diamond drilling showed no substantial differences in the assay results. Depth errors in the Aircore drilling were small and not material to the Mineral Resource estimation.<br>• Samples were dried before being crushed. A rotary splitter was used to split the samples and approximately 1kg was taken for analyses. Samples were pulverised and then analysed by XRF for all major oxides, Cl, S and LOI. A Random 10% of the samples were submitted for analyses for U, F, As, Cd, Cu, Pb, Zn, Hg, TOC,C,$CO_2$ |
| ***Drilling techniques*** | • *Drill type (e.g., core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g., core diameter, triple or standard tube, depth of diamond tails, face-sampling bit, or other type, whether core is orientated and if so, by what method, etc.).* | • Standard Aircore drilling method was used, and diamond drilling followed approaches typical for geotechnical drilling in poorly consolidated material.<br>• All holes were drilled vertically. Because of the unconsolidated/semi-consolidated nature of the material drilled the sidewalls of the holes were unstable and no downhole surveys were conducted. Most holes intersected mineralization at less than 50m below surface. Any deviation from the vertical is not material to the results of the mineral resource estimation. |
| ***Drill sample recovery*** | • *Method of recording and assessing core and chip sample recoveries and results assessed.*<br>• *Measures taken to maximise sample recovery and ensure the representative nature of the samples.*<br>• *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.* | • Sample recovery was measured through the weight of the samples taken. Adequacy was assessed by statistical analysis to determine the mean and variability in recoveries by drillhole and material type.<br>• Core recoveries were measured as the drill core was abstracted. Recoveries were acceptable at well over 90%.<br>• Drillers' experience on the phosphate deposits and constant supervision of drilling by Senior Geologist ensured that sample recovery was of an acceptable standard.<br>• Results of twin drilling and variability testing show no correlation between sample recovery and grade. |
| ***Logging*** | • *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.*<br>• *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.*<br>• *The total length and percentage of the relevant intersections logged.* | • Logging of geology and mineralization was done to a level of detail to support appropriate Mineral Resource estimation and other studies.<br>• Quantitative logging was done on all samples according to generally accepted standards for description of sedimentary rocks. Chip trays were kept for future reference. ½ Core was retained. Photographs of the core are stored with Minbos<br>• 1m samples were collected and logged from Aircore. Drill runs for the diamond drilling were in 1 m runs but sampling was done on geology and may have deviated from 1m samples. The full mineralized sequence of Upper Phosphate Member (UPM) and PFCL was sampled. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| ***Sub-sampling techniques and sample preparation*** | • *If core, whether cut or sawn and whether quarter, half or all of the core was taken.*<br>• *If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.*<br>• *For all sample types, the nature, quality, and appropriateness of the sample preparation technique.*<br>• *Quality control procedures adopted for all sub-sampling stages to maximise the representativity of samples.*<br>• *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.*<br>• *Whether sample sizes are appropriate for the grain size of the material being sampled.* | • Quantitative logging was done on all samples according to the generally accepted standards for description of sedimentary rocks. Chip trays were kept for future reference. ½ Core was retained.<br>• Half core was taken where core could be split with a blade. Where rock was severely incompetent approximately half of the material was removed from one side of the pile in the core box<br>• Rotary splitting was used to subsample the Aircore samples.<br>• An appropriate and tested quality control program was implemented.<br>• In areas of economic interest, the full intersection of mineralization was sampled, samples were of uniform size and treated in the same manner.<br>• The drilling process results in a partially pulverized and homogenized sample. Samples are at least 2 orders of magnitude larger than the largest particles. 1m samples are considered appropriate. |
| ***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.*<br>• *For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibration factors applied and their derivation, etc.*<br>• *Nature of quality control procedures adopted (e.g., standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e., lack of bias) and precision have been established.* | • Samples were analysed for major oxides using XRF. Contaminants were assayed using a variety of techniques including ICP, ISE, thermal combustion. Techniques are considered “Total” .<br>• Deposit appropriate certified reference materials were used as quality control samples for phosphate only. There were no commercially available standard reference materials for the full oxide suite for phosphate deposits. Quality control procedures included standards, blanks, duplicates, variability testing on sample preparation procedures, multiple drilling techniques and twinning of drillholes. Umpire assays have not been done however accuracy has been demonstrated to a sufficient level of confidence with the procedures in place. Levels of precision and accuracy have been monitored over three years. Accuracy and precision have been consistent and good. Accuracy of analyses has been verified during process testwork on similar material used for the mineral resource assays. |
| ***Verification of sampling and assaying*** | • *The verification of significant intersections by either independent or alternative company personnel.*<br>• *The use of twinned holes.*<br>• *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.*<br>• *Discuss any adjustment to assay data.* | • Verification of some intersection was done by the CP during site visits.<br>• There are 8 twin holes at Cácata - Aircore holes twinned with core.<br>• Assay method and QC program for twinned and diamond drill core is the same as for Aircore samples<br>• Quality control procedures included standards, blanks, duplicates, variability testing on sample preparation procedures, multiple drilling techniques and twinning of drillholes. Umpire assays have not been done however accuracy has been demonstrated to a sufficient level of confidence with the procedures in place and subsequent process testwork.<br>• Data entry and storage process were simple and used handwritten logs and Excel spreadsheets. No detailed written protocols were considered necessary Documentation of onsite procedures is not comprehensive but sufficient to record the processes used.<br>• Assays are considered accurate. No adjustments were made to the assays. No cutting or capping is used in the estimation. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | | |
| ***Location of data points*** | • *Accuracy and quality of surveys used to locate drillholes (collar and downhole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*<br>• *Specification of the grid system used.*<br>• *Quality and adequacy of topographic control.* | • All collar locations have been survey by DGPS or Theodolite as necessary by a qualified surveyor and are considered sufficiently accurate to support the MRE.<br>• The grid system used is UTM, WGS84.<br>• The positions of the collars have been surveyed. A LIDAR topographic survey was flown in 2017. All collars have been corrected to the LIDAR. In most case the difference is less than 4m. |
| ***Data spacing and distribution*** | • *Data spacing for reporting of Exploration Results.*<br>• *Whether the data spacing, and distribution are sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.*<br>• *Whether sample compositing has been applied.* | • Aircore drilling is widely spaced and irregular at approximately 200-250m in the UPM zone and 250-700m along the axis of the graben in the PFCL zone. Spacing is largely due to access and limited funding at the time of drilling.<br>• Infill core drilling was at 125m spacing in a regular grid in the centre portion of the deposit.<br>• The distribution is sufficient to establish geology and grade continuity in the areas of economic interest. Areas known to be lower grade with potential mining more than 10 years beyond the start of any production or requiring a different processing method may be incompletely sampled. The mineral resource classification has taken this into account.<br>• Aircore samples are 1m. Assays were done mostly on 2m composite samples. 1m assay samples were occasionally used where there were no adjacent samples to make up a composite (i.e., at geological contacts). Diamond core samples are of variable length and sampled according to visual characteristics. All samples have been composited to 1m for estimation. |
| ***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.*<br>• *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.* | • All drillholes are drilled at -90 degrees. The phosphate deposits are essentially horizontal. |
| ***Sample security*** | • *The measures taken to ensure sample security.* | • There are no security issues associated with this deposit. Possibility of major contamination or deliberate alteration is very low. Samples were put in the exploration camp where the site staff was staying. Samples were secured and there were always personnel on site camp. Samples sent to South Africa had a full set of shipping documents. |
| ***Audits or reviews*** | • *The results of any audits or reviews of sampling techniques and data.* | • Sampling procedures for drillholes were audited by the CP during drilling and assaying. There has been no additional drilling since 2012. The CP did not attend the bulk sampling nor the sampling for process testwork. |

**Section 2: 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.*<br>• *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.* | • In October 2019 the Angolan Ministry of Mineral Resources and Oil announced a Tender for the Angolan phosphate licenses. Minbos submitted a successful bid and was awarded the Exploration License (314/03/03/T.E/ANG-MIREPET/2021) was issued on 10 March 2021 over the Cácata deposit. The licence is valid for 10 years, with a renewal requirement after 5 years. Under the Angolan Mining Act, companies are required to survey the boundaries and erect boundary markers for their License area. Minbos completed this work in 2021 (refer to ASX release dated 19 July 2021) and the final survey co-ordinates have been submitted to the Angolan Government. These submitted coordinates will become the final License coordinates, which covers an area of approximately 74 km² and is sufficient area for all mining operations.<br>A Mineral Investment Contract was concluded In January 2021.<br>There are no known impediments to obtaining all required licenses and permit to operate.<br>Some processing facilities will be at the Futila Industrial Zone and not on the ML. Minbos has secured an appropriate site in August 2021. |
| ***Exploration done by other parties*** | • *Acknowledgment and appraisal of exploration by other parties.* | • Exploration was conducted by Mongo Tando Limitada of which MINBOS was one of the Partners.<br>• In 1969-1971.exploration work was conducted by Companhia de Fosfatos de Angola (Anglo American Corporation). The information is from Angolan government archives and is not of sufficient quality to be used in mineral resource evaluation. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| ***Geology*** | • *Deposit type, geological setting, and style of mineralisation.* | • Phosphate deposits and phosphatic horizons are located in the Atlantic coastal basin within the Cretaceous and Eocene sediments. Deposits are similar to those found in Morocco, Saudi Arabia and Florida and consist of marine and fluvial gravels sands and silts. Regionally extensive low-grade deposits of phosphatic sand and silts are found in the Late Cretaceous Maastrichtian sediments. The sequence can be up to 80m thick with three mineralized layers separated by thick barren layers. Thicker sequences are found preserved in grabens. These Maastrichtian sediments are referred to in Angola and the Lower Phosphate Marker.<br>• Younger more restricted deposits of medium to high grade phosphatic gravels and sands are found developed in grabens aligned sub parallel to the Atlantic coastline. Phosphates are found on the upper most layers of the Eocene aged Pebbly Foraminiferal Clay and limestone unit (PFCL) and the Overlying Eocene/Ypresian unit Known in Angola as the Upper Phosphate Marker. The PFCL consists of phosphatic sands and lesser gravels with no limestone. There is however a dolomitic matrix in this unit sampled at Cácata and Mongo Tando to the northwest. A partial sequence has been intersected at Cácata and Mongo Tando. The Phosphorite layers of the UPM are sandy, with some gravels and overlain by sandstone and argillites. A rich fauna was found in which the following fossils have been identified: Odontaspis speyeri Dartevelle (shark-teeth), Physodon tertius Winkler (mackerel shark-teeth), Pristis lathami Galeotti (sawfish) and other. Remains found in pits dug by MTL are teeth, jawbones, and coprolites. The UPM is 6-38m thick in the Cabinda Province properties.<br>• Mineralization styles vary over the Cabinda deposits from very high-grade gravels with coprolites, pellets, teeth, and bones to silty fine grained phosphorite with low grade regular deposits of phosphates. The phosphorite beds consist of three main mineral phases, a phosphate phase of mainly apatite/francolite/crandollite, a sand phase of predominantly silica/quartz and a clay phase of primarily iron-potassium rich clay minerals. These phases are clearly seen in the assay results from high grade phosphates and show grouped distributions of $Fe_2O_3$-$Al_2O_3$, $SiO_2$ and CaO-$P_2O_5$. Except for $K_2O$ and MgO, other major oxides have very low grades. At lower phosphate grades the distributions are more complex and dolomite is a component of most of the deposits. |
| ***Drillhole Information*** | • *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drillholes:*<br>  ○ *easting and northing of the drillhole collar*<br>  ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drillhole collar*<br>  ○ *dip and azimuth of the hole*<br>  ○ *downhole length and interception depth*<br>  ○ *hole length.*<br>• *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.* | • Minbos (under the Mongo Tando Limitada JV) has drilled over 300 holes throughout the Cabinda Province in 2011-2012 including 67 at Cácata.<br>• Historical drilling information is fully available in the MINBOS ASX announcements via its website.<br>• There has been no new drilling since the 2013 Mineral Resource Estimate was completed and published. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| ***Data aggregation methods*** | • *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g., cutting of high grades) and cut-off grades are usually material and should be stated.*<br>• *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.*<br>• *The assumptions used for any reporting of metal equivalent values should be clearly stated.* | • No exploration results are being reported in this document.<br>• No metal equivalents are used in reporting or the Mineral resource estimation. |
| ***Relationship between mineralisation widths and intercept lengths*** | • *These relationships are particularly important in the reporting of Exploration Results.*<br>• *If the geometry of the mineralisation with respect to the drillhole angle is known, its nature should be reported.*<br>• *If it is not known and only the downhole lengths are reported, there should be a clear statement to this effect (e.g., 'downhole length, true width not known').* | • Drilling is generally oriented on a grid parallel to the major deposit dimensions<br>• Drillholes intersect the mineralization perpendicular to the sedimentary layering. |
| ***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 drillhole collar locations and appropriate sectional views.* | • Basic maps and sections have been included in the report |
| ***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 practised to avoid misleading reporting of Exploration Results.* | There is no additional exploration data material to the project. |
| ***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.* | Bulk samples for test work were taken in 2016 and 2021 and are largely representative of the higher-grade layers. Additional bulk samples may be taken if current feasibility studies require additional material.<br>Bulk densities were measures as part of the diamond drilling programme.<br>Geotechnical characteristics were evaluated qualitatively during the bulk testing.<br>Environmental studies will be required will for groundwater characteristics and contamination potential. |
| ***Further work*** | • *The nature and scale of planned further work (e.g., tests for lateral extensions or depth extensions or large-scale step-out drilling).*<br>• *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.* | Additional drilling or bulk sampling will only be considered as part of advanced studies at the feasibility or operational level and will be based on operational requirements determined during these studies.<br>A bulk sample was collected in September 2021 and is currently on route to the United States for granulation testwork. |

## Section 3: Estimation and Reporting of Mineral Resources

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| ***Database integrity*** | • *Measures taken to ensure that data have not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.*<br>• *Data validation procedures used.* | • Supervision and hard copy checking against the electronic version were done. Original certificates from the labs were used.<br>• Spot checks of handwritten logs and electronic copies were made. Geological boundaries were cross- validated with assay information for consistency. |
| ***Site visits*** | • *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*<br>• *If no site visits have been undertaken indicate why this is the case.* | • The CP has visited the site on 1 occasion after drilling operations in 2011 to assess drilling and sampling methods, inspect samples and recommend changes where needed. The CP was on site during drilling operations at related deposits in Cabinda during 2011 to observe the drilling and sampling as part of a single integrated drilling campaign. |
| ***Geological interpretation*** | • *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*<br>• *Nature of the data used and of any assumptions made.*<br>• *The effect, if any, of alternative interpretations of Mineral Resource estimation.*<br>• *The use of geology in guiding and controlling Mineral Resource estimation.*<br>• *The factors affecting continuity both of grade and geology.* | • The geology is understood to an appropriate level of detail to support the proposed approach to mining and processing being planned and the product to be produced. Levels of uncertainty are reflected in the Mineral Resource Classification.<br>• The data available consists of surface surveys, collar data, geological data, and assay results – and used in the Mineral Resource estimation. Bulk sampling and mineral processing testwork and mining studies were considered in determining cut-off grades and economic potential.<br>• Structure and sedimentological and chemical characteristics were used to define homogeneous domains.<br>• The deposit is considered as being deposited in a lagoonal/ fluvial environment. There is good sedimentological and chemical continuity at the scale of mining. The structural continuity is sufficiently well understood in terms of the hosting graben and cross cutting structures. |
| ***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 Mineral Resource.* | The known dimensions of the Cácata deposit are<br>• UPM (high grade portion) 1700m x 380m x up to 20m thick<br>• PFCL (low grade portion) 3750m x 380m x 18m thick |
| ***Estimation and modelling techniques*** | • *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 the computer software and parameters used.*<br>• *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.*<br>• *The assumptions made regarding recovery of by-products. Estimation of deleterious elements or other non-grade variables of economic significance (e.g., sulphur for acid mine drainage characterisation).*<br>• *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.*<br>• *Any assumptions behind modelling of selective mining units.*<br>• *Any assumptions about correlation between variables.*<br>• *Description of how the geological interpretation was used to control the resource estimates.*<br>• *Discussion of the basis for using or not using grade cutting or capping.*<br>• *The process of validation, the checking process used, the comparison of* | • Grades of the major elements estimated are not highly skewed and there are no extreme values that require cutting or capping.<br>• Domaining is on the basis of geometry and whole rock chemistry.<br>  ○ The UPM constitutes a single sedimentary domain, split based on chemical layering and four structural blocks<br>  ○ The PFCL constitutes a single sedimentary domain and 7 structural blocks<br>• Hierarchical and K-means cluster analysis and spatial relationships were used to define the chemical layering.<br>• Geometry was based on chemical boundaries for layering, known displacement between drillholes and Datamine's Minimum Curvature Method and Aniosang facility to interpret (dis) continuity and interpolate between drillholes.<br>• Grade Estimation was based on Ordinary Kriging within chemical layering but across structural domains<br>• Full estimation parameters are not given in this table but are documented in the full Mineral Resource report include search parameters, variogram models, block model dimensions and statistics of input samples.<br>• Software used is<br>  ○ Standard packages statsmodel, numpy, scipy, sklearn, matplotlib in Python 3.8 for |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | *model data to drillhole data, and use of reconciliation data if available.* | statistics and cluster analysis,<br>○ Power BI for Multivariate analysis<br>○ Datamine for surface modelling, block model construction, variogram modelling and Ordinary Kriging, and<br>○ Leapfrog has been used for some validation routines<br>• Resource models were validated using statistical and visual checks. This study is an update of the previous modelling to account for the change in planned mineral processing and change in final product specifications. Previous models were compared with the present ones. No production has taken place |
| ***Moisture*** | • *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.* | • Tonnages were estimated as dry. |
| ***Cut-off parameters*** | • *The basis of the adopted cut-off grade(s) or quality parameters applied.* | • No cut-off grade was applied to the geological models.<br>• Cut-off grades in the Mineral Resource classification and reporting are based on the current processing plans and product specifications. |
| ***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.* | • Conventional quarry/mining can be done as the mineralization is unconsolidated or partially consolidated and near the surface. It constitutes a single continuous deposit, vertically and laterally, and overburden is sand and clay. There is little to no internal dilution.<br>• Faulting is minor and displacements are generally small and not expected to cause major disruption to mining .<br>• Recovery of mineralized material is expected to be approximately 95% |
| ***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 this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.* | • The Project sets a requirement for a 29-30% $P_2O_5$ Phosphate Rock to be granulated with WSP to produce an EPR/Cacata Blended Product which will be blended with N and K to produce an NPK fertilizer product for distribution within Angola Zone 3 (high grade phosphate >30% $P_2O_5$) can be used “as is” with little or no processing required.<br>• Other zones. 21,22 and 25 are lower grades but the >19% $P_2O_5$ will be blended with the higher grade material to create a 29-30% feed grade<br>• A selling price of 457.7 USD/tonne for Cacata Rock has been applied, based on a MAP landed in Port Caio of USD700/t (52 P2O5 %), a blend of 25% MAP in the final product on a contained $P_2O_5$ basis, and a Relative Agronomic Effectiveness (“RAE”) of 85%. This results in a Cacata Blended Product price of 383.9 USD/t. |
| ***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 greenfields 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.* | • Land degradation and noise/air pollution should be factors considered as part of the mine planning process.<br>• Minor agricultural activities will be disturbed, and some settlements will need to be relocated.<br>• Contaminants normally associated with phosphate deposits are at or below levels seen in operations at similar deposits.<br>• No major environmental issue has been identified at this stage<br>• No tailing dam is required for the current processing methods<br>• Low grade stockpiles and overburden waste dumps will be required during mining.<br>• Primary risks are dust and sediment runoff form the operations and flooding in the river adjacent and flat lying area immediately south of the proposed pit. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| ***Bulk density*** | • *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size, and representativeness of the samples.*<br>• *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.*<br>• *Discuss the assumptions for bulk density estimates used in the evaluation process of the different materials.* | • Density was measured from drill core. All density is dry density.<br>• Density calculated based on measured weight/drilled volume. Drilled volume is the length of material * nominal diameter of the core. This method was used to account for swelling in the core when extracted from the core barrel and/or shrinking due to dehydration in the drying process. Immersion methods could not be used due to the unconsolidated nature of the drilled material. Weights were measured form short core lengths and multiple runs in filled core boxes. Methodology for the historical data is not known. All three sets of density measurements had similar means.<br>• Whole rock was measured before crushing. Porosity was preserved in the measured rock.<br>• A mean density for the phosphate units was used. The densities measured were in a narrow range and in the presumed bulk mining methods to be used local variability in density is unlikely to be a major variable. |
| ***Classification*** | • *The basis for the classification of the Mineral Resources into varying confidence categories.*<br>• *Whether appropriate account has been taken of all relevant factors (i.e., 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).*<br>• *Whether the result appropriately reflects the Competent Person's view of the deposit.* | • Drillhole spacing, drill type, density measurements, geology and grade continuity and processing factors were considered when classifying the Mineral Resources.<br>• All known factors related to Mineral Resource Classifications where considered.<br>• The results reflect the Competent Person's view of the Cácata phosphate deposit. |
| ***Audits or reviews*** | • The results of any audits or reviews of Mineral Resource estimates. | • A resource geologist from the (Mongo Tando) joint venture partner was involved in the reviews of the work done in 2012-2013. No reviews external to the project have been undertaken. |
| ***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.*<br>• *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.*<br>• *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.* | • The confidence on the Mineral Resource estimation is low to high. There is high confidence on grade continuity for the high-grade Zones at a cut-off of 19%$P_2O_5$. There is little difference in the global mean and variability between the different levels of classification (mean 29.57%$P_2O_5$+/- 9%$P_2O_5$ at block grades) for Zone 3.<br>• Confidence in the local estimates varies from moderate to high for the grade distributions and low to moderately high for the volume estimates. The uncertainty is reflected in the classification.<br>• Uncertainty is primarily in the volumes defined by restricted channelling in the lower layer and by the lateral limits of the host graben.<br>• Local estimates were within chemical units with well defined boundaries using Ordinary Kriging. Distributions are not highly skewed and no significant bias in the mean can be demonstrated,<br>• There is no production data for Cácata. |

## Section 4 Estimation and Reporting of Ore Reserves

Note - Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.) Please refer to ASX announcement dated

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| ***Mineral Resource estimate for conversion to Ore Reserves*** | • *Description of the Mineral Resource estimate used as a basis for the conversion to an Ore* | • The Mineral Resource Estimate used as a basis for the conversion to the Ore Reserve was published by Minbos Resources on 23 November 2022 with Kathleen Body of SRK Consulting (UK) Ltd as the Competent Person. It reported 8.41Mt at 29.7% $P_2O_5$, comprising 2.2 Mt Measured resources at 29.9% $P_2O_5$%, 4.76 Mt Indicated resources at 29.7 $P_2O_5$ and 1.45 Mt Inferred resources at 29.5% $P_2O_5$. A cut-off grade of 19% $P_2O_5$ was applied. |
| | • *Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.* | • The Mineral Resources are reported inclusive of the Ore Reserves. |
| ***Site visits*** | • *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* | • The CP, Mr Ross Cheyne, has not undertaken a site visit as part of the Ore Reserve process. |
| | • *If no site visits have been undertaken indicate why this is the case.* | • The Ore Reserves were developed over the course of 2021/2022 and during this time Covid Covid concerns and associated travel logistics issues limited safe travel in and out of Africa. However, the CP, Mr Ross Cheyne, has:<br>○ Discussed and reviewed the site setting and core logging with the independent MRE CP, Kathleen Body.<br>○ Discussed site setting with Nelius Scheepers, independent environmental consultant for the Cabinda Phosphate Project DFS.<br>○ Reviewed aerial drone flyover footage of the site.<br>These reviews confirmed the:<br>○ layout and topography of the site<br>○ location and alignment of the Nhenhe River<br>○ location and density of nearby dwellings on west of the Nhenhe River<br>○ proportion of the site under crop and the generally low-level forestation over much of the planned mining area and;<br>○ nature of the material to be mined<br>were in line with the descriptions provided in the DFS. |
| ***Study status*** | • *The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.* | • A Scoping Study on the Cabinda Phosphate Project was released by Minbos in 2012 and 2020. This Ore Reserve is based on a DFS level study finalised in August 2022. As the technical aspects of the project are not onerous an interim PFS was not considered necessary. |
| | • *The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.* | • The August 2022 Definitive Feasibility Study was underpinned by a mine plan that was based on the Measured and Indicated resource materials. Mine planning included pit optimisations, pit designs, mining and processing scheduling, cost estimations and the analyses to ensure the project is technical achievable and economically viable.<br>Slope design criteria, mining dilution, ore loss and processing recoveries were applied in the pit optimisation process together with mining, processing and product transport costs, |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | | product pricing and royalty estimates to generate optimised pit shells which form the basis for pit designs and the mine plan |
| ***Cut-off parameters*** | • *The basis of the cut-off grade(s) or quality parameters applied.* | • The target grade for the Cabinda Phosphate Rock (CPR) product is 30% $P_2O_5$. Therefore, a cut-off grade of 23% $P_2O_5$ was applied to generate a diluted head grade over the life of the project of 30% $P_2O_5$. |
| ***Mining factors or assumptions*** | • *The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).* | • A Whittle 4X pit optimisation was completed in June 2022. Slope design criteria, mining dilution, ore loss and processing recoveries were applied in the pit optimisation process together with mining, processing and sales cost estimates and revenue projections to form the basis for pit designs and subsequent mining and processing schedules. |
| | • *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.* | • A conventional truck and shovel open pit mine method was chosen as the basis of the BFS due to the low strip ratio and shallow depth of the pits. Mine design criteria include: minimum mining width, ramp width and gradient, pit exit location and slope design parameters. A small scale mining fleet, consisting of:<br>o 1 x 35t excavator<br>o 1 x 50t excavator<br>o 30t and 40t articulated dump trucks<br>was selected as appropriate to the material movement requirement. |
| | • *The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.* | • Pit geotechnical criteria was based on a Golder Associates Geotechnical Study carried out in 2016. The recommended overall pit slopes was 31º. As the Cácata Phosphate Mine is effectively a quarry, grade control will be undertaken utilising hand-held XRF units sampling from the face, ROM stockpiles at the site, and stockpiles at the processing facility. No pre-production in-fill drilling is planned at this stage. |
| | • *The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).* | • Only Measured and Indicated resource materials, modified for dilution and ore loss, were considered as potential ore in the pit optimisation process.<br>A zone around the stream running through the middle of the mining area was excluded from the optimisation to ensure it was not affected.<br>Slope design criteria was based on the Golder study detailed above.<br>A mining cost of $4.20/t was applied globally, in line with the results from the early studies. The mining cost is relatively low for such a small-scale operation, but there is no drill and blast cost and fuel costs are also low in Angola.<br>Processing costs were provided by Minbos for three different production rates of Cabinda Phosphate Rock (CPR) product and an assumed ramp up in production was assumed over the first 9 years of operation. These are summarised below.<br><br>CPR Production Rates ktpa 125.0 187.5 375.0<br>Period Year 1 – 3 4 – 8 9+<br>Total Processing Cost USD/CPR t 69.47 55.76 42.04<br><br>A Selling Cost (Distribution and ESG contribution) of USD 20.89/CPR t and CPR Price of USD292.69/CPR t were also provided by Minbos. |
| | • *The mining dilution factors used.* | • Previous skin dilution studies on the Cácata deposit had indicated the preference was to accept ore loss to minimise dilution of the $P_2O_5$ grade. Given the low bench heigh (2.5m) and small excavator size (max. 100t) a global mining loss of approximately 6% was |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | | calculated. This was applied as a global factor for the DFS optimisation. |
| | • *The mining recovery factors used.* | • On the above basis nil dilution was applied. |
| | • *Any minimum mining widths used.* | • A minimum mining width of 20m was utilised. However, the broad, shallow nature of the pit meant this mining width was not required. Road widths of 18m and 10m were used for two-way ramps and one-way ramps respectively. |
| | • *The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.* | • No inferred Mineral Resources have been included in the Ore Reserve. Inferred Mineral Resource is treated as waste in the optimisation and production schedule.<br>The optimisation included a sensitivity including Inferred materials, primarily to identify future resource drilling opportunities and/or potential sterilisation risks. |
| | • *The infrastructure requirements of the selected mining methods.* | • Contract mining is assumed for the mining operation. The mining cost estimate generated includes allowances for the contractors infrastructure including fuel & oil storage facilities and fuel bay, workshops, wash bay, offices, lunch and ablution facilities and a first aid facility. Given the short-term nature of the mining campaigns over the first five years, these facilities have been based on temporary and/or portable amenities. |
| ***Metallurgical factors or assumptions*** | • *The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.* | • The proposed metallurgical process comprises a simple beneficiation methodology whereby the phosphate rock from the Cácata mine is crushed in a cage mill, conveyed to a rotary drier where the moisture level is reduced to 3%, cooled and then packed into “bulka” bags for transport to market. |
| | • *For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?* | • A CPR grade of 30% was selected by Minbos on the basis that it:<br>o provides acceptable relative agronomic effectiveness (RAE) of the CPR product<br>o aligns with the natural resource grade and therefore provides reasonable conversion of the Cácata resource to reserve. |
| | • *The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.* | • The relative agronomic effectiveness (RAE) of the CPR is based on greenhouse trials carried out by the International Fertilizer Development Centre (IFDC), the results of which are detailed as part of this announcement. The IFDC is a US based non-profit organisation that supports sustainable agricultural solutions via research and market system development. |
| | • *Any assumptions or allowances made for deleterious elements.* | • As the phosphate rock is not being used as an additive in any form of downstream processing (e.g. phosphorous acid production), the effects of any deleterious elements is negligible. |
| | • *The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.* | • As part of the partnership with the IFDC, a representative sample of approximately 2,000kgs of Phosphate Rock was successfully processed at the IFDC’s world-class granulation pilot plant in Muscle Shoals, Alabama. The testing provided energy and mass flow data that was used as the basis of design for the Cabinda processing facility. |
| | • *Whether the metallurgical process is well-tested technology or novel in nature.* | • The processing techniques are all recognised and well tested techniques currently in use in similar operations globally. |

| Criteria | JORC Code explanation | 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.* | • Dry and wet season baseline surveys were carried out on both the mine site and the Cabinda processing facility site in 2021/2022 by HCV Africa and Grupo Simplis covering:<br>o Air quality and GHG<br>o Hydrogeology<br>o Hydrology<br>o Noise & Vibration<br>o Soils and land Capability<br>o Aquatic ecology<br>o Fauna (terrestrial: herpetofauna and avifauna and mammals)<br>o Botany<br>o Herpetology<br>o Socio-economics and Cultural heritage<br>o Traffic, and<br>o Waste Management<br>An Environmental, Impact and Social Assessment (EISA) plan was developed for each site and is being submitted to the government for the application of a Construction Licence and Operational licence. The studies confirmed that with good management practices and design the project can be developed with minimal impacts.<br>There is no tailings facility required at the mine site and the waste rock is characterised as silts and sands (NAF) and will be returned to the pits. |
| ***Infrastructure*** | • *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.* | • The mine site will need minimal infrastructure due to its small scale and simplicity. Power will be provided through gensets and water will be from dewatering the pit or local bores. Access to and from the site is relatively straightforward utilising the EN201 national route and a bridge access over the Nhenhe River.<br>The plant will be constructed on an industrial site being developed under contract to the government.<br>o Power will be available for the process from a line that runs past the site with backup power from diesel gensets.<br>o Water will be sourced from a local bore to be drilled<br>o Gas and diesel will be delivered by road transport and stored on site. It is expected that power, water sewerage etc will be accessible at the site.<br>The company will have access to the Port of Cabinda approximately 24kms from the plant site for the initial period. A new deep-water port at Caio is currently under construction approximately 5kms from site and is expected to be operating in 2026 at which time the company will utilise this facility.<br>The Company is designing its operations to have minimal impact on the surrounding communities and its activities. No houses or other buildings will need to be moved or disturbed as a result of the Company's activities.<br>Accommodation is expected to be provided locally or from the major town of Cabinda 50km from the mine site and 24km from the plant. |
| ***Costs*** | • *The derivation of, or assumptions made, regarding projected capital costs in the study.* | • One-off, initial mining capital costs are a combination of site establishment and mobilisation costs for the mining contractor. Each subsequent mining campaign has an allowance for mobilisation and demobilisation. Costs were derived from the Majesso cost database.<br>The capital cost estimates for the Cabinda processing facility are based on the DFS study performed by DRA, which entailed a combination of obtaining quotes from suppliers and contractors and, in some instances, costs derived from the DRA database and experience. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | | The DRS estimate was completed with a ±15-20% level of accuracy.<br>○ EPCM costs are derived from existing negotiations with the EPCM contractor (EPC Engenharia) that was identified from a tender process run by Minbos.<br>○ The EPCM contractor was engaged under a Limited Notice To Proceed agreement that included detailed engineering and design work and a review of project capital cost estimates. This resulted in an escalation of approximately 30% on top of the DRA study estimates. |
| | • *The methodology used to estimate operating costs.* | • All operating costs have been estimated to cover the mining, processing, and transport of the phosphate rock to the Cabinda processing facility, and distribution of the CPR product. These costs were estimated in US dollars.<br>The mining operating costs are based on a first principal contractor-mining price estimate generated by Majesso and based on:<br>○ equipment prices submitted by OEMs<br>○ fuel price of USD0.27/l provided by Minbos<br>○ base salaries provided by Minbos with allowances for oncosts<br>Processing operating costs have been generated by DRA. Plant consumption rates are derived from the test work performed on a pilot plant operated at the International Fertilizer Development Centre (IFDC) in Alabama, USA, major equipment supplier FEECO and Minbos. |
| | • *Allowances made for the content of deleterious elements.* | • There are no deleterious elements associated with the Cácata phosphate rock or final CPR product of material impact. |
| | • *The source of exchange rates used in the study.* | • Exchanges rates are sourced from www.oanda.com. |
| | • *Derivation of transportation charges.* | • Transportation costs are based on the distance from mine to plant and plant to port and on a survey of fuel consumption rates for an Articulated Truck and the fuel cost in Angola. |
| | • *The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.* | • N/A |
| | • *The allowances made for royalties payable, both Government and private.* | • Under the operations and financial modelling, full allowances are made for royalties, duties, taxes and community contribution obligations. Royalties and community contributions are stipulated in the Mining Investment Contract as 2% and 1% respectively of mining revenue. |
| ***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 factors that affect the revenue are:<br>○ the resource $P_2O_5$ grade adjusted for dilution.<br>○ the provision of a consistent 30% $P_2O_5$ blend to the Cabinda processing facility. |
| | • *The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.* | • Prices and costs are all in US dollars without exchange rate factoring. |
| ***Market assessment*** | • *The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.* | • Market size and penetration over the Project life was based on estimates derived by the IFDC, which was referenced in their Memorandum of Understanding lodged with the Angolan Government and the Department of Agriculture and Rural Development. |
| | • *A customer and competitor analysis along with the identification of likely* | • In the core target market competition comes from imported fertilizers, which has the burden |

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td></td><td>market windows for the product.</td><td>of shipping costs.</td></tr>
<tr><td></td><td>• Price and volume forecasts and the basis for these forecasts</td><td>• Pricing is based on the Relative Agronomic Effectiveness of the Minbos phosphate rock product compared to the Triple Superphosphate historical (15-year average) price and supported by the field trials conducted by both Minbos and the IFDC, as well as the IFDC data held in their Phosphate Rock Decision Support System (https://prdss.ifdc.org/app).</td></tr>
<tr><td></td><td>• For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.</td><td>• N/A</td></tr>
<tr><td rowspan="2">Economic</td><td>• 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.</td><td>• The discount rate used for the NPV is a Weighted Average Cost of Capital calculation, and as part of that the Cost of Debt included a 1.75% risk premium for Angola. It is also a real discount rate. The calculated rate was 10.0% rounded to 0.1%.<br>The NPV was derived from real cash flows of the project and no allowance was made for inflation.<br>A NPV based on nominal cash flows and discount rate was determined for the scenarios. Inflation rates used were US CPI rate 12-months to August 2022 for Capex, a long-term historical US CPI rate for Opex and a long-term historical price inflation rate of Triple Superphosphate for the product pricing.</td></tr>
<tr><td>• NPV ranges and sensitivity to variations in the significant assumptions and inputs.</td><td>• Sensitivity analysis was performed on a wide range of assumptions and inputs, with the basis of the product price, being the price of Triple Superphosphate, and the WACC being the most sensitive.<br>The results of the financial analysis produced an after-tax NPV10% of USD 203.3M and an after-tax IRR of 39% and a payback period just under five years.<br>Results of the sensitivity analysis of the Base Case after-tax NPV were as follows:
<table>
<tr><th>Parameter</th><th>Base Case -20%</th><th>Base Case + 20%</th></tr>
<tr><td>WACC</td><td>255.76</td><td>162.31</td></tr>
<tr><td>TSP Price</td><td>145.9</td><td>260.87</td></tr>
<tr><td>Tax Years Incentives</td><td>186.71</td><td>216.53</td></tr>
<tr><td>USDAOA ex-rate</td><td>199.46</td><td>205.62</td></tr>
<tr><td>Initial Capex</td><td>209.06</td><td>197.32</td></tr>
<tr><td>Mine Cost/t</td><td>207.53</td><td>201.23</td></tr>
<tr><td>Plant Consumables/t</td><td>205.25</td><td>201.06</td></tr>
<tr><td>Plant Labour/t</td><td>207.75</td><td>198.56</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>• A number of social programs are currently being investigated and implemented around education, health, and employment. A Relocation Assistance Program (RAP) is required and is currently underway for farming property in the mining area.</td></tr>
<tr><td>Other</td><td>• To the extent relevant, the impact of the following on the project and/or</td><td></td></tr>
</table>

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | *on the estimation and classification of the Ore Reserves:* | |
| | ○ Any *identified material naturally occurring risks.* | ○ The risk of large-scale pit wall failure occurring is low as the pit walls heights are generally low (max. 50m in limited areas) and progressive backfilling means that slopes will only be open for 2-3 years. The consequences of such an unlikely event will result in some extra mining costs but unlikely to prevent extraction of the scheduled material to any significant degree.<br>The risks of large-scale pit flooding impacting on the performance of the project is low given the generally shallow mining, the pit being above the 100yr flood line for all but some small exposures adjacent to the Nhenhe River and the availability of alternative mining areas. Also, the presence of a Run of Mine (RoM) ore stockpiles will mitigate any potential mining delays. Acceptable risk levels can be achieved by adopting appropriate pit dewatering capacity and surface drainage designs. |
| | ○ The *status of material legal agreements and marketing arrangements.* | ○ Minbos has received a proposal of the Offer to Purchase Agreement, from the Institute of the Industrial Development of Angola (IDIIA), for the purchase and transfer of Surface Rights of the proposed site for the Processing Facility in Fútila Industrial Development, Cabinda Province. Minbos is in the final negotiations with IDIIA to secure a long-term of 60 years with the option to extend for the same duration."<br>Minbos has a program in place with the IFDC to deliver product into the Angolan Fertilizer and Farm Productivity Program (AFFP) (refer to announcement 24th August 2022). There are also a number of Letter of Intents (LOI's) currently being negotiated with commercial farming organisation within Angola. |
| | ○ The status *of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.* | ○ In October 2019 the Angolan Ministry of Mineral Resources and Oil announced a Tender for the Angolan phosphate licenses. Minbos submitted a successful bid and was awarded the Exploration License (314/03/03/T.E/ANG-MIREPET/2021) was issued on 10 March 2021 over the Cácata deposit. The licence is valid for 10 years, with a renewal requirement after 5 years. Under the Angolan Mining Act, companies are required to survey the boundaries and erect boundary markers for their License area. Minbos completed this work in 2021 (refer to ASX release dated 19 July 2021) and the final survey co-ordinates have been submitted to the Angolan Government. These submitted coordinates will become the final License coordinates, which covers an area of approximately 74 km² and is sufficient area for all mining operations.<br>A Mineral Investment Contract was concluded In January 2021.<br>There are no known impediments to obtaining all required licenses and permit to operate. |
| ***Classification*** | • *The basis for the classification of the Ore Reserves into varying confidence categories.* | • Proven ore reserves were determined from Measured resources and Probable reserves from Indicated resource materials, as prescribed by the JORC Code 2012 Edition. |
| | • *Whether the result appropriately reflects the Competent Person's view of the deposit.* | • The results are in line with the geological knowledge available and appropriate application of economic and mining parameters. |
| | • *The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).* | • Approximately 25% of the Ore Reserve is classified as Proven, derived from Measured resource only, with the remaining 75% classified as Probable derived from Indicated resource only. No Measured resource has been classified as Probable reserve |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | | |
| ***Audits or reviews*** | • *The results of any audits or reviews of Ore Reserve estimates.* | • No external audits have been undertaken on the Ore Reserve. |
| ***Discussion of 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 Ore Reserve Estimate is an outcome of the 2022 Feasibility Study with geological, mining, metallurgical, processing, engineering, marketing, and financial considerations to allow for the cost of finance and tax. Engineering and cost estimations have been completed to a +15%/-20% level of accuracy, consistent with a study of this nature. |
| | • *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.* | • The Mineral Resource Estimate and hence the Ore Reserve Estimate relate to global estimates. |
| | • *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.* | • There has been an appropriate level of consideration given to all modifying factors to support the declaration and classification of the Ore Reserves. |
| | • *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.* | • No production or reconciliation data is yet available for comparison. |