Deep Yellow LIMITED

NEWS RELEASE

2 February 2023

STRONG RESULTS FROM TUMAS DEFINITIVE FEASIBILITY STUDY

HIGHLIGHTS

- **Highly positive Definitive Feasibility Study (DFS) completed on the Tumas Project in Namibia**
- **World-class uranium project**
  - Treating 4.15 Mt per annum to produce up to 3.6 Mlb U_3O_8 (uranium) per annum and 1.15 Mlb V_2O_5 (vanadium by-product)
  - Project Life of Mine (**LOM**) of 22.25 years based on existing ore reserves, with additional resources likely to increase life to a +30-year operation
- **Low technical risk**
  - Open cut truck and shovel mining
  - Conventional process route utilising beneficiation, leaching, and vanadium and uranium recovery
  - Namibia an established uranium jurisdiction
  - Extensive uranium development management experience
  - Good regional infrastructure – road access, power, water
- **Robust economics**
  - Key assumptions - uranium price US$65/lb, vanadium price US$7/lb, 90% vanadium payability, discount rate of 8%
  - Initial estimated capital cost (CAPEX) US$372 million
  - Pre-production costs US$48 million
  - LOM all-in sustaining costs of US$38.72 per lb
  - After-tax project net present value (NPV_8) of US$341M
  - Internal rate of return (IRR), ungeared, of 19.2%
  - Using Trade Tech Forward Availability Model (FAM 2) forecast pricing averaging US$77/lb post tax, NPV increases to US$614 and IRR improves to 26.4%
- **Adopting world-class sustainability initiatives**
  - EIA completed with significant consultation with Government and community stakeholders, for submission to authorities late February
  - Low-risk closure with in-pit tailings storage
  - Detailed mitigation measures to address potential ecological impacts
  - Tumas will deliver widespread socio-economic benefits including 600 jobs during construction, ~520 direct jobs in operations (including site-based contractors) plus ~1900-2550 indirect jobs
- **Deep Yellow will now focus on detailed Front End Engineering and Design, project financing, and product offtakes ahead of a Final Investment Decision H1 2024**
- **Investor webcast/conference call Friday 3 February 2023, details below**

Deep Yellow Limited (**Deep Yellow** or **Company**) is pleased to release the results of the Tumas DFS, showing the flagship uranium project as a potential world-class operation delivering robust returns to shareholders (refer Figure 1). The Tumas DFS Executive Summary prepared by DFS lead engineer, Ausenco Services Pty Ltd, with key input and direction from the Deep Yellow subject matter experts, is attached to this release to provide the detailed backdrop information to support the key project findings. (refer Annexure 1)

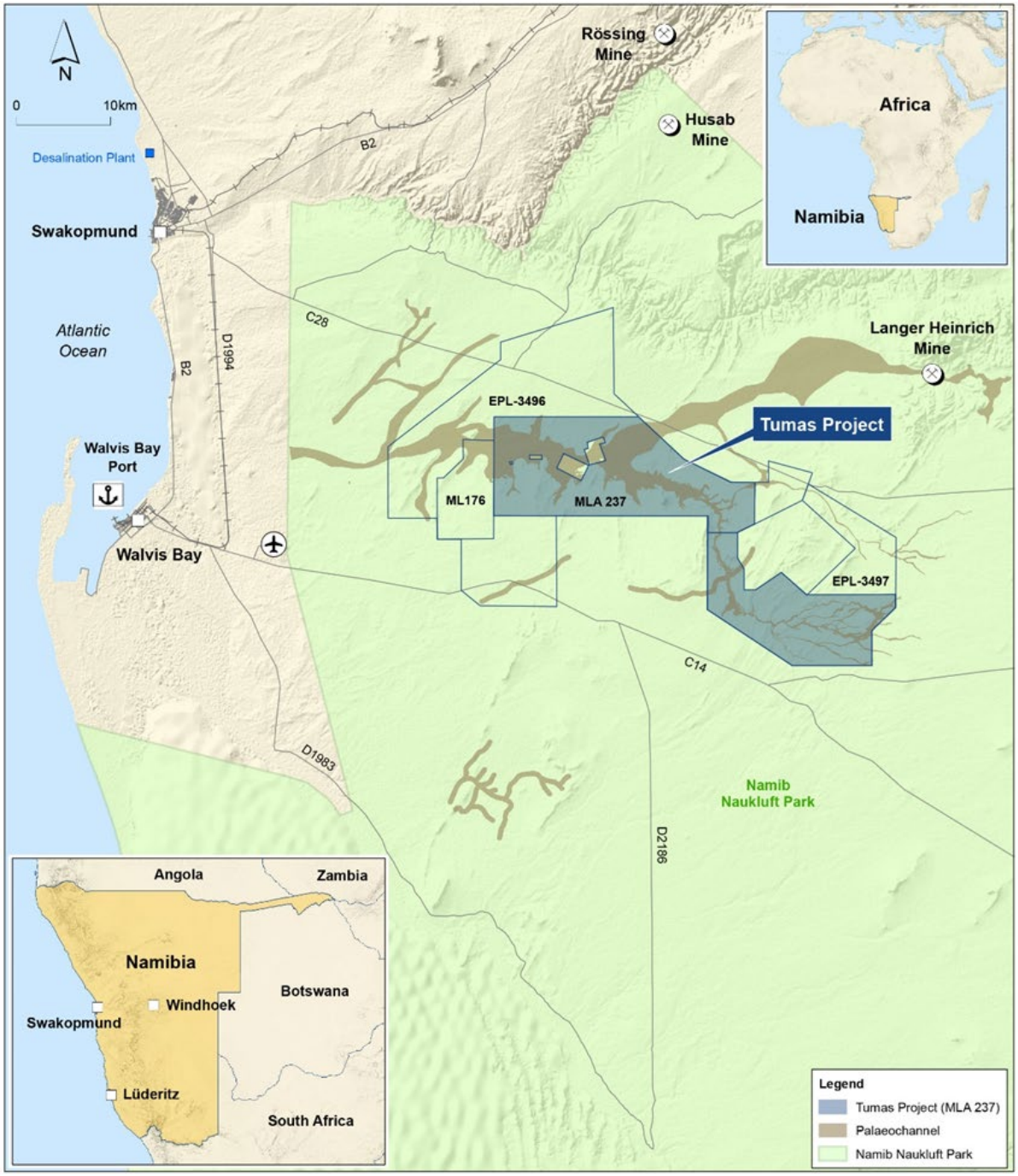


Figure 1: *Tumas Project location with local infrastructure shown.*

Commenting on the DFS results, John Borshoff Managing Director/CEO said: *"The release of the Tumas DFS is the most significant event to-date in our Company's history.*

"We believe this is a very robust DFS and underscores the value of our conviction to apply effort in contrarian fashion, with a proven team, to discover the expanded Tumas Project that now demonstrates its potential to be a long-life, world-class uranium operation.

"Importantly, we have used appropriate assumptions and our costings are highly accurate, having been largely based on quotes received in the last quarter of 2022 and in January 2023, resulting in a very realistic outcome against the inflationary and supply headwinds that have hit the mining sector.

"We intend for Tumas to be a best-in-breed uranium operation with world-leading extractive technologies and sustainability initiatives applied, including a specific process route that will produce a benign[1] tailings stream to allow for the eventual safe closure and rehabilitation.

"The Board has been suitably encouraged by the outcomes and the confidence it has in the team to continue to deliver and has authorised management to commence Front End Engineering and Design and advance project financing and offtake discussions over the course of this year. We also anticipate our application for a Mining Licence will be granted by mid-2023 once the Environmental Impact Assessment is assessed and approved by the authorities. If the outcome of these workstreams is positive, and suitable uranium market conditions prevail, we will be looking to make a Final Investment Decision by the first half of calendar year 2024.

"The development of Tumas is a cornerstone component of our long-held, dual-pillar growth strategy, which now also includes the Mulga Rock Project in WA, all to capitalise on the forecast improvement in uranium prices on the back of looming global uranium shortages from 2024. Our strategy encompasses organic growth of our own projects, and non-organic growth through consolidation in the sector.

"We remain strong believers in nuclear energy for electricity generation what with its growing role and importance both in combatting climate change by reducing global gas emissions and securing electricity supply for the future."

DFS Highlights

A key feature of the DFS, compared to the Pre-Feasibility Study (**PFS**) outcome, is the increased production capacity of the plant from 3Mlbpa U_3O_8 to 3.6Mlbpa U_3O_8 (20% - refer Table 1) and the increased throughput from 3.75Mtpa to 4.15Mtpa (11%). This has allowed positive economics to flow, despite a 26% increase in initial capital as a result of inflationary (and Covid) impacts over the past 2.25 years and the 20% increase in capacity.

On a cost per annual pound basis, initial capital for construction is now US$103/lb compared to US$98/lb in the PFS, a modest increase of only 5% over the 2.25 years. Production at this full rate of 3.6Mlb pa, on present stated reserves, will be for 10 years and overall LOM reduces slightly from 25.75 years to 22.25 years. This production rate increase has been made with the expectation of a potentially longer LOM for this project as has been previously reported. The considerable Inferred Resources are not considered in the DFS and, with 40% of the highly prospective Tumas paleochannel system remaining untested, the LOM is still realistically expected to exceed 30 years and production levels post year 10 are expected to be maintained at 3.6Mlbpa U_3O_8 for a substantially longer period. The following are some key highlights from the DFS compared to the PFS completed in early 2021. Full details are contained in the Executive Summary, attached to this announcement.

[1] The process was developed with the aim of developing a benign tailing, where a "benign tailing" is characterised by its stability, particularly with respect to ground water impact. Deep Yellow has achieved independent, third-party endorsement of the process in this regard from the CSIRO.

Table 1: Tumas Project Comparison Table

PARAMETERS	UNIT	DFS (Feb '23)	PFS Update (Oct '21)	Delta
Nameplate process throughput	Mtpa	4.15	3.75	+11%
Head Grade	ppm U_3O_8	340	345	-1.5%
Initial LOM	Years	22.25	25.75	-14%
Total mineral resources	Mlbs	114	114	-
Total ore reserves	Mlbs	67.4	68.4	-1.5%
Annual production (U_3O_8 max)	Mlbs pa	3.6	3.0	+20%
Annual production (V_2O_5 max)	Mlbs pa	1.15	0.96	+20%
Initial CAPEX	US$M	372	295	+26%
Capital cost per annual pound U_3O_8	US$	103	98	+5%
Capital estimate reference date		Q4 2022	Q3 2020	2.25y
Operating cost reference date		Q4 2022	Q3 2020	2.25y
Cash operating costs (C1)	US$/lb U_3O_8	34.68	28.39	+25%
LOM total operating costs (Real)	US$/lb U_3O_8	39.39	32.89	+18%
All-in Sustaining Costs (AISC)	US$/lb U_3O_8	38.72	31.76	+24%
NPV (ungeared)[2]	**US$M**	**341**	**410**	**-17%**
IRR (ungeared)	**%**	**19.2**	**23.0%**	**-16%**

The Company is satisfied that the increase in both capital and operating costs identified in the DFS is reflective of the increased plant capacity and inflationary forces experienced in the 2.25 years since the PFS was completed. These inflationary and Covid-related pressures appear to have been most significant over the past year and to have reached a peak, with some costs now showing signs of reducing. This robust outcome underlines the prudent approach the Company and its development team take to each consecutive stage of project development, from Scoping Study to operations. The Tumas DFS, even under these difficult circumstances, has delivered strong results due to improved productivity and the conservative cost assumptions applied in the preceding studies. The experienced project development team has been consistent since September 2019 when the Tumas Scoping Study was commenced.

Graph 1 below shows the nominal ore tonnes and grade processed with U_3O_8 production by year. The ore schedule allows the operation to maintain annual production of 3.6Mlb U_3O_8 over the first 10 years, after which it steadily declines due to available ore grade. Importantly, as mentioned significant potential remains to grow Tumas through upgrading the remaining Inferred Resources and further exploration of Tumas Palaeochannel.

[2] Project valued at 100% ownership. BEE partner has option to acquire 5% of Project.

Graph 1: Ore Tonnes and Grade Processed and U_3O_8 Production by Year

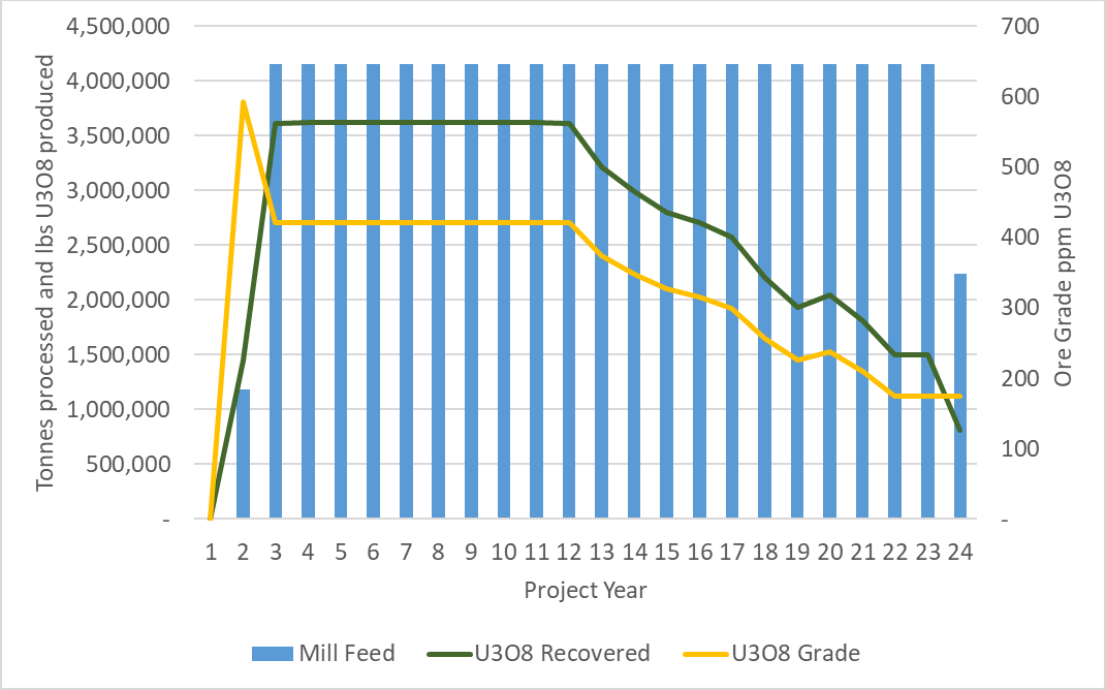


Table 2: Tumas Project Financials showing Base Uranium Price with Price Comparatives

Project Financials (Ungeared): Real unless stated	Unit	PFS Update (Oct '21)	US$65/lb	FAM-2	US$85/lb
U_3O_8 gross revenue	$M	4,169	4,145	5,039	5,421
V_2O_5 gross revenue	$M	149	162	162	162
Gross revenue: total	$M	4,318	4,307	5,201	5,582
Downstream operating expenses (TC/RCs, freight)	$M	(60)	(64)	(64)	(64)
Site operating expenses	$M	(1,910)	(2,281)	(2,281)	(2,281)
Namibian state royalty & export levy	$M	(140)	(139)	(168)	(181)
Operating margin (EBITDA)	$M	2,208	1,823	2,687	3,057
Initial capital cost	$M	(295)	(385)	(385)	(385)
Capitalised pre-production operating costs	$M	(38)	(51)	(51)	(51)
Sustaining and closure	$M	(83)	(127)	(127)	(127)
Total capital and sustaining capital	$M	(417)	(563)	(563)	(563)
Tax payable	$M	(646)	(473)	(795)	(933)
Undiscounted cashflow after tax	$M	1,141	793	1,333	1,564
C1 cost (U_3O_8 basis with V_2O_5 by-product)	$/lb	28.39	34.68	34.68	34.69
All-in-Sustaining-Cost (U_3O_8 basis with V_2O_5 by-product)	$/lb	31.76	38.72	39.18	39.38
Project NPV (post tax)[3]	$M	410	341	614	754
Project IRR (post tax)	%	23.0	19.2	26.4	31.4
Project payback period from production start	Years	3.8	4.1	3.3	2.8
Maximum project drawdown	$M	315	426	425	424

[3] Project economics at 100% ownership consideration.

As can be seen from Table 2, using the same US$65/lb uranium price assumption used for the PFS, the DFS delivers significant returns even with the impact of inflation. Utilising the latest independent pricing forecast from TradeTech, the FAM-2[4] uranium price forecast (mid-point assumption at ~ US$77/lb) materially increases the project's returns for an NPV of US$614M. As can be observed in the table above, any uranium price increase delivers significantly increased return.

It is also relevant to note that at US$68.5/lb for uranium, (an addition of only US$3.5/lb to the $65/lb applied in the PFS, or 6%), the NPV and IRR for the DFS essentially aligns with that achieved in the PFS Update model as announced 5 October 2021.

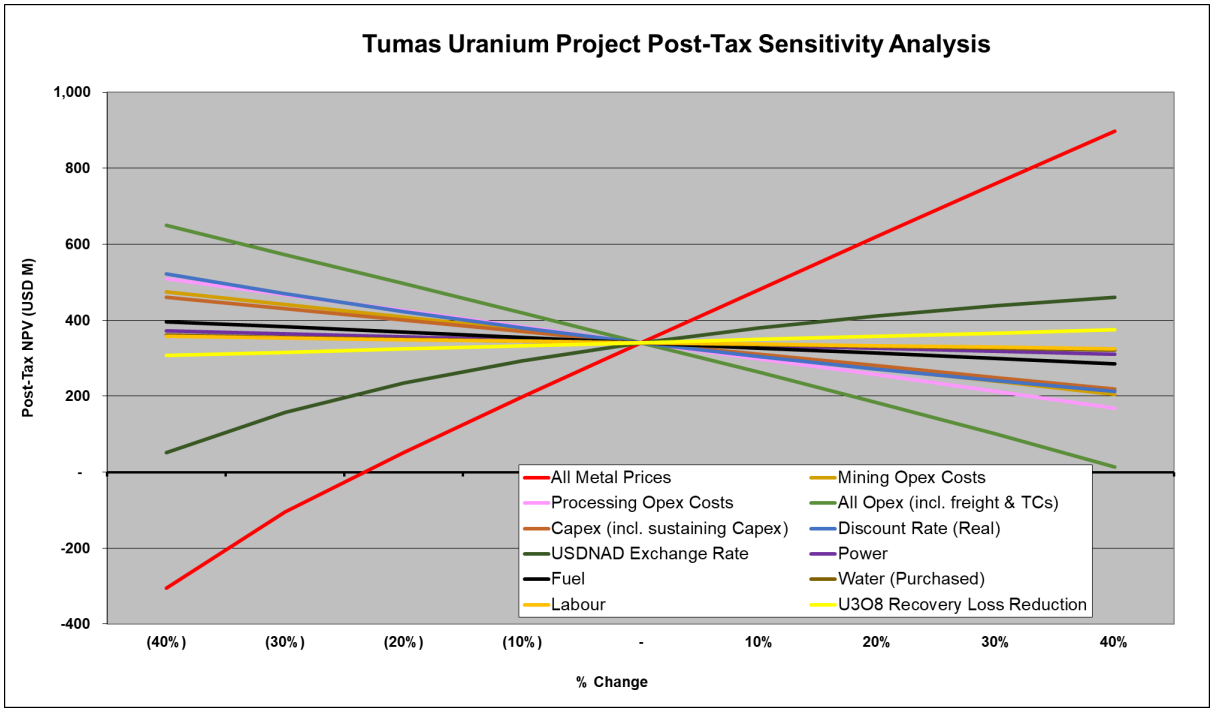
Marketing

Deep Yellow Management and Board fully recognise the importance of product marketing and sales contracting. A comprehensive marketing and sales strategy is under preparation which is designed to initially support project financing but also, more importantly, optimise the value of Tumas output to the benefit of all stakeholders. The principal focus will be on long-term sales commitments with Tier 1 nuclear utility customers on a global basis. Given the ongoing evolution of the uranium market in response to both geo-political events and the global nuclear resurgence, the Tumas Project will play an important role in combatting climate change as a supplier of zero carbon emitting fuel for baseload electricity generation.

Sensitivity Analysis

The Project modelling as outlined in Graph 2 shows the higher sensitivity to uranium prices and US:NAD exchange rates.

Graph 2: Post Tax Sensitivity Analysis



Risk can be significantly reduced by securing long-term offtake agreements and costing service and supply contracts, where possible, in US dollars.

[4] This is a uranium price forecast produced by TradeTech which refers to the Forward Availability Model (FAM) 2 scenario reflecting a restricted supply profile impacted by a greater probability of risks affecting production plans and economics than the optimistic FAM 1 model.

It is anticipated that project financing will be utilised to minimise risk, maintain flexibility, and preserve shareholder value. Deep Yellow anticipates securing debt and equity funding and the project financing efforts with offtake investigations will be progressed in parallel with FEED development,

Sustainability

Deep Yellow intends to adopt world-class sustainability initiatives in the development of Tumas.

An Environmental Impact Assessment, meeting the requirements of the Namibian Government regulations, was completed by an independent third-party and involved extensive consultation with Government and community stakeholders. Consultation will continue with stakeholders of the three major towns of Swakopmund, Walvis Bay and Windhoek in Namibia before final submission to Government.

Potential areas of environmental impact have been identified and detailed management plans, mitigation measures and monitoring requirements are detailed in the Environmental Management Plan.

Key highlights include amendments to the mine plan sequencing to avoid or minimise disturbance to areas of ecological importance.

The process plant has been specifically designed to produce a benign tailings stream that will not have any long-term environmental impacts once final rehabilitation and closure of the project has been completed. The predicted tailings behaviour, with respect to groundwater impact, has achieved independent, third-party endorsement from the Commonwealth Scientific and Industrial Research Organisation (**CSIRO**). Tumas will utilise mined-out areas for the storage of the benign tailings meaning open pits will be filled, covered and rehabilitated back to the original landform.

The Company also intends to utilise solar farm technology to reduce the requirement for grid power and lower CO_2 emissions by an estimated 850,000t over the life of the mine[5]. The uranium produced by the mine will displace approximately 34,200,000 tonnes of black coal over the LOM[6], resulting in an additional reduction in CO_2 emissions of 89,300,000 t over the LOM[7].

Development of the Tumas Project is expected to result in significant, positive socio-economic impacts for the local, regional, and national economy including benefits in the creation of ~800 jobs in construction, ~520 direct jobs (including site contractors) and a further ~1,900–2,550 indirect jobs during operations.

Investor Webcast and Conference Call

Deep Yellow will be holding a conference call and webcast for shareholders and interested stakeholders, to discuss the findings of the Tumas DFS.

DETAILS

Time - 6am WST (9am AEDT)

Date – Friday, 3 February 2023

[5] source - www.eia.gov CO_2 emissions per kwhe for coal.
[6] source - World Nuclear Association, Heat values of various fuels.
[7] source - Clean Energy Regulator, Carbon content factors for anthracite for the 2012/13 reporting year.

PARTICIPATION

Shareholders who wish to view the webcast live, or access the archived event, can use the following link - https://webcast.openbriefing.com/dyl-mu-2023/

Shareholders who wish to ask questions can join the conference call by pre-registering at the following link - https://s1.c-conf.com/diamondpass/10028472-ap9f34.html Once registered, you will receive a calendar invite and unique code to be quoted when dialling into the call.

JOHN BORSHOFF
Managing Director/CEO
Deep Yellow Limited

This ASX announcement was authorised for release by Mr John Borshoff, Managing Director/CEO, for and on behalf of the Board of Deep Yellow Limited.

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About Deep Yellow Limited

Deep Yellow is progressing its development through a combination of advancing its existing assets and expanding its opportunities for diversified growth through sector consolidation. With the merger and acquisition of Vimy Resources, the expanded Deep Yellow now has two advanced uranium projects located both in Namibia and Australia with the potential for production starting from the mid-2020s. In addition, with its expanded exploration portfolio, opportunity also exists for substantial increase of its uranium resource base aimed at building a significant global, geographically diversified project pipeline.

Relevant Information regarding DFS Preparation

The DFS referred to in this announcement is based on the Mineral Resource and Ore Reserve of 5 October 2021 and 3 February 2022. The estimated Indicated Mineral Resource underpinning the production target has been prepared by an Independent Competent Person in accordance with the requirements of the JORC Code. Accordingly, Deep Yellow has concluded that it has reasonable grounds for disclosing the production targets.

The above ground capital costs were prepared by independent and globally recognised engineering from Ausenco Services Pty Ltd. Processing and engineering works for the DFS were developed to support capital and operating estimates (and following AUSIMM Guidelines for this study level) and given the preliminary and confidential nature of the plant information, the capital cost has a margin of error of +25% / -15%.

The pricing for commodities used in the DFS was based on independent market research and the economic analysis results should be treated as preliminary in nature and caution should be exercised in their use as a basis for assessing project feasibility.

Forward Looking Statements: Statements regarding plans with respect to Deep Yellow's mineral properties are forward looking statements. There can be no assurance that Deep Yellow's plans for development of its mineral properties will proceed as expected. There can be no assurance that Deep Yellow will be able to confirm the presence of mineral deposits, that any mineralisation will prove to be economic or that a mine will be successfully development on any of Deep Yellow's mineral properties.

Unless otherwise stated, all cashflows are in US Dollars and all years are calendar years.

Competent Persons' Statements

Mineral Resources

The information in this announcement that relates to the Tumas Mineral Resource Estimate is based on work completed by Mr. D Princep, B.Sc. Geology, who is a Fellow and Chartered Professional of the Australasian Institute of Mining and Metallurgy and has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking, to qualify as a Competent Person in terms of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' (JORC Code 2012 Edition). Mr. Princep consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears.

Ore Reserves

The information in this announcement that relates to Ore Reserves is based on information compiled by Mr Quinton de Klerk, who is employed by Cube Consulting. Mr de Klerk is a Fellow of the Australasian Institute of Mining and Metallurgy and has sufficient experience which is relevant to the activity he 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 Ore Reserves (the JORC Code)". Mr de Klerk consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears.

Project and Technical Expertise

Mr Darryl Butcher is a process engineer/metallurgist working for Deep Yellow and has sufficient experience to advise the Company on matters relating to mine development and uranium processing, project scheduling, processing methodology and project capital and operating costs. Mr Butcher is satisfied that the information provided in the announcement has been determined to a Feasibility Study level of accuracy and that the relevant modifying factors determined by the DFS are suitable to use as modifying factors for the updated financial outcomes.

Ausenco Services Pty Ltd (Lead Engineer)

Ausenco is engaged to compile the feasibility study document by assimilating inputs from various external subject matter experts and providing design engineering services, project execution methodology and scheduling, vendor and contractor pricing, and developing project capital and operating cost estimates. Ausenco has sufficient experience in the development of feasibility studies and project execution of mineral processing facilities of similar scope and complexity globally, including Africa. Ausenco is satisfied that the information provided in the announcement has been determined to a Feasibility Study level of accuracy.

Founded in 1991, Ausenco is a global company with 27 offices in 15 countries and projects in 80 locations. The company provides consulting, project delivery, asset operations and maintenance solutions to the mining & metals and industrial sectors.

Forward Looking Statement

Any statements, estimates, forecasts or projections with respect to the future performance of Deep Yellow and/or its subsidiaries contained in this announcement are based on subjective assumptions made by Deep Yellow's management and about circumstances and events that have not yet taken place. Such statements, estimates, forecasts and projections involve significant elements of subjective judgement and analysis which, whilst reasonably formulated, cannot be guaranteed to occur. Accordingly, no representations are made by Deep Yellow or its affiliates, subsidiaries, directors, officers, agents, advisers or employees as to the accuracy of such information; such statements, estimates, forecasts and projections should not be relied upon as indicative of future value or as a guarantee of value or future results; and there can be no assurance that the projected results will be achieved.

CHAPTER 1

EXECUTIVE SUMMARY

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1 EXECUTIVE SUMMARY

1.1 Synopsis

This report presents the finding of the Tumas Feasibility Study which was carried out between March 2022 and January 2023.

The objective of the Tumas Project is to develop a facility to treat ore at a rate of 4.15 Mt/y from the Tumas 1, Tumas 2, Tumas 3, Tumas 1 East and Tubas ore resources through a beneficiation, leaching, solid liquid separation and uranium/vanadium recovery process to produce up to 3.6 Mlb/y uranium yellow cake (U_3O_8) product and up to 1.15 Mlb/y vanadium by-product.

The key outcomes of the study are:

- the overall project life will be 22.25 years from commencement of ore processing (without processing 14.3 Mt of low-grade ore and 0.3 Mt of inferred ore that remains at stockpile)
- the mine will be a conventional shallow open cut truck and shovel operation using contract mining
- the process route consists of a beneficiation process to reject barren material, leaching, solid liquid separation, pregnant leach solution ("**PLS**") concentration, vanadium recovery, uranium recovery and uranium barren liquor ("**UBL**") treatment
- tailings are returned to mined out pits, with waste material used to construct dividing walls as interim boundaries
- the report concludes, based on CSIRO modelling, that the tailings from the process will be relatively benign and represent a true "walk-away" option at closure
- the project also includes the construction of a 13.5 km site access road, a 45.1 km 132 kV powerline and a 65 km water supply pipeline
- the initial capital cost for the project is $436 M, inclusive of pre-production costs. . Key components of the initial capital are $224 M direct cost for the process plant, $13 M for mining, $20 M for onsite infrastructure, $26 M for off-site infrastructure, $85 M for indirect, EPCM and Owners' costs and $18 M for project contingency. Capitalised pre-production costs include $48 M for pre-production mining and $3 M for processing and administration (operational readiness and manning build-up)
- using a uranium price of US$65.00 /lb, a vanadium price of US$8.90 /lb and a discount rate of 8%, the financial analysis for the project indicated an after-tax project net present value ("**NPV**") of $341 M and with an internal rate of return ("**IRR**") of 19.2%

- C1 operating cost after a vanadium credit of $2.54 /lb U_3O_8 is $34.68 /lb U_3O_8 and the All In Sustaining Cost ("**AISC**") is US$38.72 /lb U_3O_8.

On the basis that the project life, NPV, IRR and C1 operating cost fall materially within the development criteria of the Company it is recommended that:

- the pre-development of the Project continue as proposed
- initial engagement with markets and sources of finance for the Project be advanced.

1.2 Introduction

Deep Yellow Limited ("**Deep Yellow**" or "**the Company**") is an emerging global uranium leader, developing a geographically diversified and advanced portfolio, to provide security and certainty of supply into a growing market.

Following completion of the merger with Vimy Resources Ltd in August 2022, Deep Yellow holds the largest uranium resource base (389 Mlb U_3O_8) of any ASX-listed company and is uniquely positioned as one of the few uranium companies with credible, diverse, multi-mine asset exposure globally and ability to execute through to development and production.

Importantly, the Company is successfully progressing its dual-pillar strategy to establish a multi-mine operation with capacity to produce 10+ Mlb/y.

The most advanced project in Deep Yellow's portfolio is the Tumas Project in Namibia. Since 2017, Deep Yellow's exploration and development work has grown the Tumas Project significantly in size and scale, resulting in a 20+ year life of mine and Ore Reserves of 67.3 Mlb.

1.2.1 Project Background

Exploration at Tumas, since 2016, when the current Deep Yellow management team took control of the project, has been highly successful. The Project's palaeochannel/ calcrete resource has increased nearly four-fold since 2016 (mainly at the Tumas 3 and Tumas 1 East resource areas), at an extremely low and impressive discovery cost of 11.5 c/lb.

A Scoping Study on the Tumas deposits was completed at the end of 2019, with positive results providing the Board with confidence to proceed immediately to a formal Prefeasibility Study.

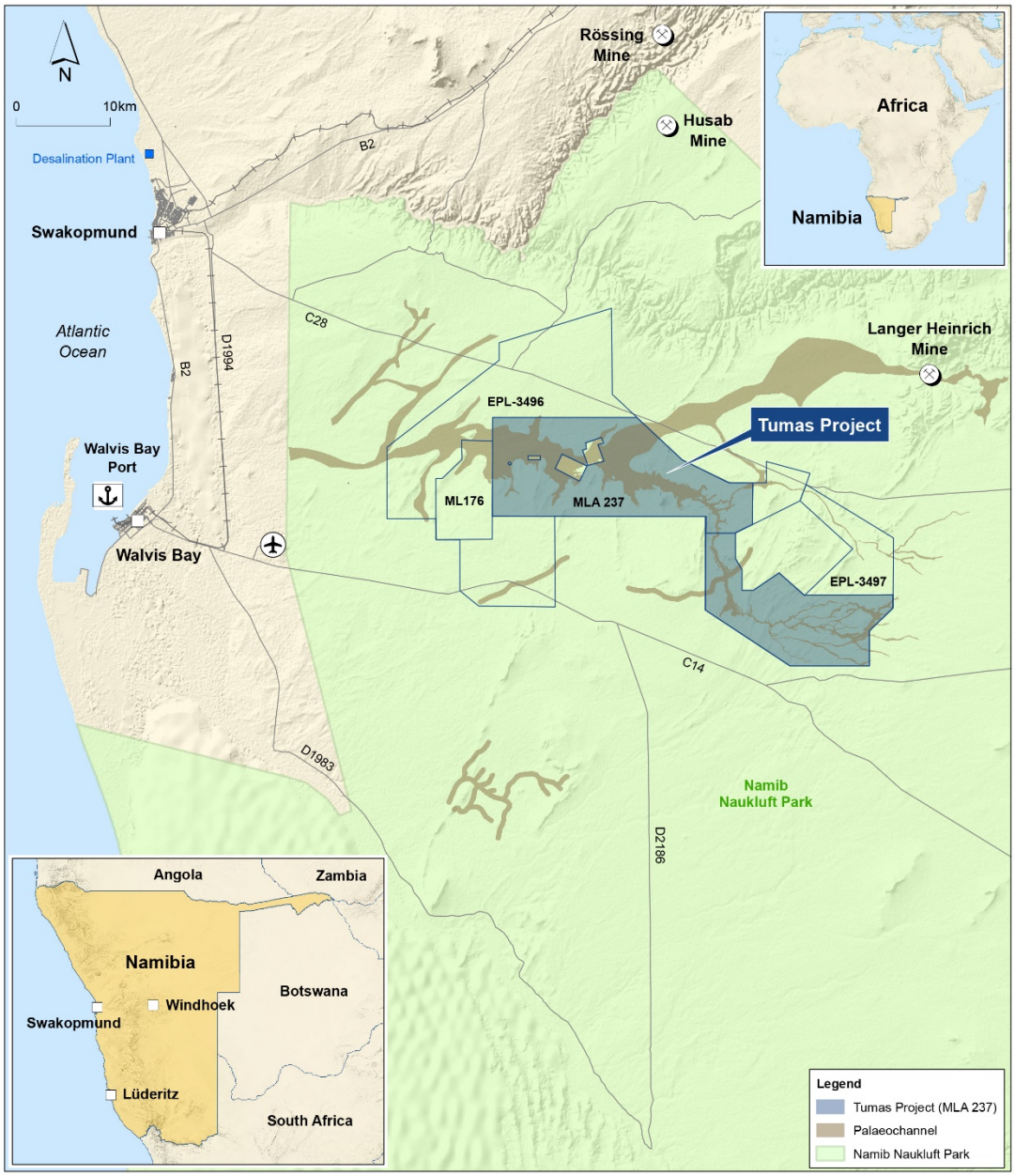
The Prefeasibility Study was completed in early 2021 and delivered robust results in line with, and in some cases better than, the assumptions used for the scoping study. This highlighted a strong economic case for the Tumas Project and justified the

immediate commencement of this Detailed Feasibility Study ("DFS") into the future development of the Project.

1.2.2 Property Location

The Tumas Project includes the Tumas 1, Tumas 2, Tumas 3, Tumas 1 East and Tubas Red Sand/Calcrete orebodies and is located in Namibia about 80 km ESE from the coastal town of Swakopmund and 80 km ENE from the Seaport of Walvis Bay. The Walvis Bay port is a Class 7 port which has exported yellowcake since the 1970s. The Project area is accessible via the sealed C28 road (Figure 1.2.1).

Figure 1.2.1 – Tumas Project Location



1.3 Project History

Anglo American and Falconbridge explored the Tumas palaeochannel from the mid-1970s to the early 1980s. Falconbridge identified uranium mineralisation in the Oryx Area (now Tumas 3) and Anglo American drilled the Tubas Red Sand mineralisation. In 2005, Reptile Mineral Resources and Exploration (Proprietary) Limited (**"RMR"**) acquired Reptile Investment Four (Proprietary) Limited which was, in 2006, renamed

Reptile Uranium Namibia (Proprietary) Limited ("**RUN**"). RUN acquired tenure of the Project in 2006 under EPL3496 and 3497. Deep Yellow, through its wholly owned subsidiary Deep Yellow Namibia (Pty) Ltd, acquired RMR in 2008.

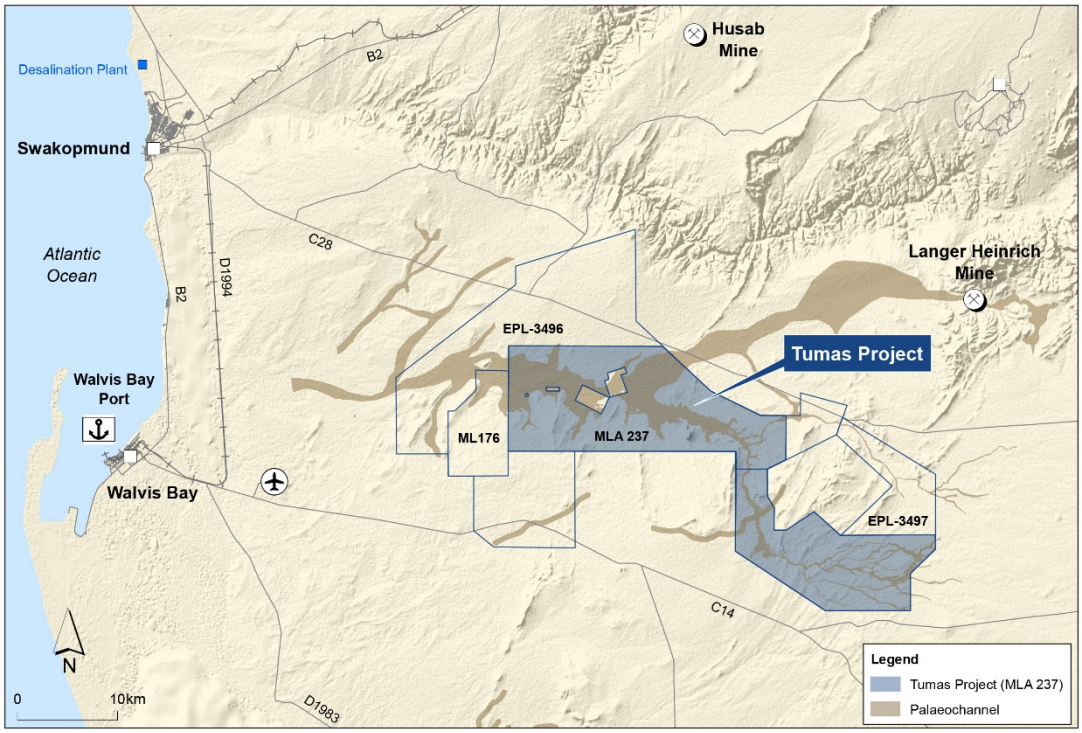
In late 2016 the newly placed current Deep Yellow management team re-evaluated all previous drill and geophysical data resulting in a new geological model and exploration strategy targeting the prospective Tumas palaeochannel for substantial resource increases. Initial drilling in 2017 and 2018 concentrated on Tumas 3 resulting in a maiden calcrete Inferred Mineral Resource of 33.1 Mlb U_30_8 at 378 ppm. An in-house scoping study in 2019 provided encouraging results and was followed by a Prefeasibility Study ("**PFS**") in 2020/21. The PFS resulted in a maiden ore reserve of 40 Mt of 344 ppm U_30_8 containing 3.1 Mlb U_30_8, an 11.5 year mine life and a post-tax $NPV_{8.6}$ of US$208 M ungeared.

1.4 Legal Framework

The management and regulation of mining activities in Namibia falls within the jurisdiction of the Ministry of Mines and Energy ("**MME"**), with the environmental regulations guided and implemented by the Directorate of Environmental Affairs ("**DEA"**) within the Ministry of Environment, Forestry and Tourism ("**MEFT"**).

The MME has granted Reptile Uranium Namibia (Pty) Ltd ("**RUN**") tenure of Exclusive Prospecting Licenses ("**EPL**"s) 3496 and 3497 (Figure 1.4.1) which are scheduled to expire on 8 and 14 December 2023 respectively. In June 2021 RUN submitted a Mining License application ("**MLA**"237) to cover the Tumas and Tubas resources. The MME provided a preparedness to grant notification on 10 August 2022. The MLA covers 38,549 ha including 60 km length of the Tumas Palaeochannel.

Figure 1.4.1 – Property Map



The Ministry of Environment and Tourism ("**MET**") (now MEFT) has granted Environmental Clearance Certificates ("**ECC"**) for the exploration activities on EPLs 3496 and 3497. The ECCs were extended on 20 and 16 March 2022 respectively and are valid for a period of three years each.

1.5 Environmental Sustainability Governance

Effective and successful Corporate Governance is an ongoing focus of the Deep Yellow Board. The Board and management are committed to the creation of shareholder value and recognise that high standards of governance are integral to that objective. The directors of Deep Yellow have approved policies which they believe will focus their attention, and that of their executives, on the extremely important pillars of accountability, risk management and ethical conduct.

Deep Yellow is committed to ensuring that there is effective environmental management across all aspects of its operations. In accordance with Deep Yellow's Corporate Governance framework discussed above, the Company operates under an Environmental Policy. The Environmental Policy provides a framework to achieve a high standard of environmental performance across its operations in order to both minimise and mitigate environmental impacts. Deep Yellow's operational sites will be required to establish an Environmental Management System ("**EMS**") to ensure

that environmental impacts are managed in a planned, controlled, monitored, recorded and auditable manner.

Deep Yellow believes that exploration and mining activity can play a central role in sustainable community development by acting as a catalyst for positive economic and social change. Deep Yellow has a Community Relations Policy that provides a framework for working with the communities where it conducts its operations. Deep Yellow also has a Human Rights Policy that provides a framework for Deep Yellow to help protect the human rights of its stakeholders, and to prevent human rights violations from occurring at the Company's operations.

Deep Yellow believes that attaining a high level of performance in occupational health and safety is critical to the long-term success of its business. Deep Yellow is committed to provide and maintain a safe and healthy work environment, with the target of "zero" incidences of occupational injuries and illnesses in the workplace. This includes promotion of good mental health within Deep Yellow's workforce. Deep Yellow has an Occupational Health and Safety Policy which provides a framework for the Company to achieve its occupational health and safety objectives while achieving its operational aims. The Deep Yellow Integrated Management System ("**IMS**"), currently being developed, will be a company-wide system that describes the mandatory requirements for effective health, safety, environmental and quality practices across all Deep Yellow's activities and operations.

Deep Yellow considers excellence in radiation management performance is essential to business success. Deep Yellow is fully committed to achieving minimum radiation exposure to its workers, members of the public and the surrounding natural environment. Deep Yellow has a Radiation Policy which provides the overarching framework for the business to achieve a high standard of radiation management performance. The Policy sets out the objectives and strategy to achieve minimal radiation exposure to people and the environment. A Radiation Management System ("**RMS**") is in the process of being developed to address the radiation risks associated with handling radioactive ore and concentrates once the Tumas Project is operational and to reduce the risks to as low as reasonably practicable. An RMS is currently in place covering exploration activities.

1.6 Environmental Impact Assessment

1.6.1 Environmental Setting and Baseline

The Tumas Project area is located in the Namib Naukluft National Park ("**NNNP**") in the Erongo Region of Namibia, approximately 40 km east of Walvis Bay.

1.6.1.1 Climate

The daytime wind field is dominated by winds from the west-southwest and west while at night weaker winds prevail mostly from the northwest, west, and east. Seasonal variation shows predominantly north-westerly, westerly and west-north-westerly winds in summer (October - March), changing to west-south-westerly winds during the autumn months (April - May). During the winter months (Jun - Aug), high speed north-easterly winds dominate, referred to as the “east-winds”. During the spring months (Sep - Nov) the westerly winds (west-south-westerly, westerly, north-westerly and west-north-westerly winds) return.

Average daily maximum temperatures range from 42°C in November to 25°C in July, with daily minima ranging from 14°C in January to 7°C in September. The average annual rainfall in the region ranges from about 15 mm at the coast, to about 35 mm around 100 km inland. However, rainfall is extremely variable, patchy, and unreliable and may not occur for many years. The region receives significant amounts of moisture from fog or dew, particularly near the coast where it receives, on average, as much or more precipitation from fog than from rainfall. While average annual rainfall at the Project area is very low, most of the rainfall occurs due to high intensity and short duration localised storm events.

1.6.1.2 Topography and Soils

The Project area is characterised by a gently westward sloping peneplain, punctuated by occasional outcrops and inselbergs, and dissected by an extensive network of washes of various depths and extent.

The types of soils found on or near the Project area include gypsum soil and calcrete. Generally, the gypsum soils correspond to the area where lichens grow on gravel plains, which is most evident at the western part of the Project area. Towards the east gypcrete occurrences decrease and calcrete becomes more dominant. Underlying the grassy plains in parts of the Project area are hard substrates comprised of coarse sandy material. These hard sandy plains are usually covered by sharp and angular gravel.

1.6.1.3 Surface Water

The regional hydrological setting of the Project area falls within the Tumas River Catchment, which is separated from the larger Kuiseb River catchment in the south and the Swakop River catchment in the north. The confluence of the Tumas and Tubas Rivers lies towards the western extent of the Project area. The Tumas and Tubas Rivers flow east to west and have many smaller tributaries. Both rivers are ephemeral rivers with episodic flows which are linked to the higher rainfall events during summer months.

The Project area is drained mainly by minor drainage lines and washes flowing in an east-west direction to join the Tumas River. These do not have regular surface flow because any surface water flow seeps into the ground and recharges the groundwater.

1.6.1.4 Groundwater

Monitoring bores in the Tumas Project area have intersected three groundwater systems – the shallow alluvium, the palaeochannel aquifer and the fractured basement aquifer. Most of the boreholes in the alluvium were found to be dry at the time of their drilling. The groundwater levels in the palaeochannel and basement aquifers generally range between 2 and 30 m below ground level.

The groundwater quality in the Tumas River and Tubas River is classified as moderately to highly saline water and therefore not suitable for human consumption. The uranium concentrations in groundwater range from 0.05 mg/L to 0.2 mg/L.

1.6.1.5 Vegetation and Flora

The vegetation in the Project area is largely grassland and shrubland, with the latter mostly confined to washes and rivers. The Project area falls overall into the vegetation type of the *Arthraerua leubnitziae* and *Zygophyllum stapffii* zone. Twelve landforms have been delineated in the Project area which can be divided into the broad categories of plains, rivers, inselbergs and mountains. The densest vegetation is found in the rivers, where the hummock-forming shrub *Salsola nollothensis* grows.

Around 206 plant species may be expected to be found in the region, 96 of which have been recorded in the Project area. This includes 22 legally protected or Cites 2 species, 48 range-restricted species (endemic or near-endemic) and one species listed “vulnerable” according to red-list criteria. All trees in the Project area are protected. Seven plant species that are of particular interest in the Project area are the nara plant (*Acanthosicyos horridus*), elephants’ foot (*Adenia pechuelii*), the bulb *Ammocharis deserticola*, the stone plants (*Lithops gracilidelineata* and possibly *Lithops ruschiorum*), *Salsola nollothensis* and *Welwitschia mirabilis*.

1.6.1.6 Fauna

The Project area is regarded as “low” in overall (all terrestrial species) diversity while the overall terrestrial endemism on the other hand is “moderate to high”. An estimated 54 reptile, 5 amphibian, 49 mammal and 130 bird species (breeding residents) are known or expected to occur in the general Project area of which a high proportion are endemics. No invertebrate species, wholly or partially endemic to the area, or populations of particular conservation concern were identified during the field surveys. However, they are expected to occur in the area.

1.6.1.7 Ecological Sensitivity

From an ecological perspective, the highly vegetated patches identified in the Tumas River area are considered the most sensitive due to the complex habitat structure, high persistent productivity and subsequently high level of food and shelter they offer to a range of animals. These areas may also act as refuge areas during prolonged dry periods due to the persistent vegetation and shelter they provide.

These isolated patches allow connectivity along the Tumas River for animal movement and migration (east-west and north-south) and the survival of isolated populations. The remainder of the Tumas River with its major tributaries is also considered sensitive due to the relative high perennial vegetation cover and well-developed structure of the vegetation in the drainage system.

1.6.1.8 Air Quality

Dispersion modelling was conducted to identify the main contributing sources to the measured PM_{10} and $PM_{2.5}$ concentrations in the Project area. Modelled results indicated that vehicle entrainment from roads are the main contributing sources of PM_{10} and $PM_{2.5}$ emissions. Windblown dust from natural exposed surfaces at and around the Project area is also regarded to be a significant source of particulate matter emissions under high wind speed conditions (>10 m/s) The average dustfall rates measured in the Project area were between 5 to 22 mg/m²/day. An E-sampler measuring the PM_{10} dust levels in the Project area recorded values ranged between 0.3 and 64.6 µg/m³, which was below the evaluation criteria of 75 µg/m³. Passive samplers measured ambient sulphur dioxide (SO_2), nitrous dioxide (NO_2) with the results for the SO_2 and NO_2 showing an annual average below the criteria of 50 µg/m^3 and 40 µg/m^3, respectively. Volatile organic compounds ("**VOC**") concentrations were below detection limit.

1.6.1.9 Noise

Results from a baseline noise monitoring survey showed that A-weighted equivalent sound pressure levels over 40 to 60 minutes (LAFeq) ranged between 24.2 dBA and 52.3 dBA. The impulse corrected A-weighted equivalent sound pressure levels (LAIeq) ranged between 36.5 dBA and 56.1 dBA. Noise levels which were exceeded 90% of the measurement period, A-weighted and calculated by statistical analysis (LAF90), were between 13.2 dBA and 24.0 dBA

1.6.1.10 Radiological Environment

A radiation dose results from the continuous exposure to ionising radiation from several sources in the natural environment, including highly energetic cosmic rays from the Earth's atmosphere (the cosmic contribution) and from radioactive elements

contained in the Earth's crust (the terrestrial contribution). The following radiation-related baseline exposure doses were estimated for the Tumas Project area:

- a total direct external gamma exposure dose of some 1.1 ± 0.4 mSv/y
- an inhalation dose due to radon and progeny of some 0.2 ± 0.1 mSv/y
- an inhalation dose due to ambient atmospheric dust of some 0.003 mSv/y.

1.6.1.11 Archaeology

There were archaeological 48 sites recorded in the Project area, 23 of which are seed diggings and 16 sites indicating human settlement, including a single basecamp site and five outpost sites where people may have rested during seed gathering excursions.

1.6.1.12 Social Setting

The Erongo Region is the second most prosperous region in Namibia, with 70% of the available labour force employed. The coastal towns of Walvis Bay and Swakopmund have attracted migrants from all over the country and have experienced high annual growth rates of between 4.7% - 5.3% since 2001. This has led to an increase of impoverished shacks in which approximately 40% of the population of Walvis Bay and Swakopmund dwell.

Around 400 ≠Aonin Topnaar people live along the Kuiseb River in fourteen communities. The communities mainly depend on small-scale livestock production of goats, cattle and donkeys, and government pensions as they are no longer allowed wildlife offtake from their former hunting grounds in the NNNP.

1.6.2 Environmental Impact Assessment

An Environmental Impact Assessment ("**EIA**") has been conducted for the Tumas Project. The EIA is based on meeting the requirements of the Namibian Environmental Management Act (Act. No. 7 of 2007) and Section 15(2) of the associated EIA Regulations, as well as supporting policies and guidelines. The terms of reference for specialist investigations were developed during the Scoping Phase of the EIA. The potential environmental impacts were identified by the team of environmental specialists in consultation with stakeholders. The outcomes of the assessments have been integrated into the EIA. The actions required to effectively implement design requirements, management and mitigation measures and monitoring requirements are detailed in an Environmental Management Plan ("**EMP**").

1.6.2.1 Ecological System

An assessment of the overall ecological biodiversity of the Project area and impact of the Project was undertaken. The ecological biodiversity assessment integrated the potential impacts on plants, vertebrate fauna, invertebrates and the surface hydrological environment to determine impacts of the ecological processes and functions in the Project area.

The proposed mitigation measures to address potential impacts on the ecological system include the following:

- delay the mining in the resource areas overlapping with ecologically sensitive areas until further research and monitoring has been undertaken
- maintain surface flow in drainage lines as far as is practicable
- minimise the footprint of disturbed areas as far as possible
- minimise damage or destruction to the dense vegetation areas, trees and large shrubs
- progressively restore the drainage system after mining in that area has been completed.
- locate service roads and other infrastructure outside of the river drainage lines.
- minimise disturbances on the southern side of the river to allow larger animals to move around disturbances
- strip the top alluvial material in drainage areas that are to be mined and store separately
- backfill mining pits and cover with the stored alluvial material
- monitor the effect of changes in water and dust on sensitive areas and flora
- install stormwater management measures and infrastructure to prevent dirty water from entering the clean water systems.

1.6.2.2 Groundwater

Seepage from the tailings and waste rock dumps into underlying aquifers may have an impact on rising groundwater levels and groundwater quality. A geochemical study was conducted to predict the prevalent metals' source term and their interaction with ground and rainwater. The geochemical modelling concluded that the uranium leachate from tailings and waste rock's reaction with rain and groundwater will revert to background values of 0.05-0.2 ppm. The non-reactive transport model produced predicted that the pollution plume will not migrate outside the mining lease area, even for a 100-year period.

The waste rock was also geochemically assessed and was found to be non-acid forming with a very high neutralising capacity. The geochemical study showed that when waste rock leachate reacts incrementally with groundwater, the concentrations of uranium will approach levels close to 0.1 ppm, which is the background concentration in the groundwater.

The management measures proposed to mitigate or minimise the impacts of the Project on the groundwater level and quality include:

- applying monitoring data to determine changes in groundwater levels
- designing the process plant to maximise the recovery and recycling of process liquor
- monitoring U and V concentration in the tailings
- allowing the tailings to dry, cover with waste rock and contour the tailings storage facility ("**TSF**") to minimise erosion
- allow for enough freeboard to prevent phreatic surface in the backfilled tailings to reach surface or the level of the shallow alluvium
- collecting and recycling tailing seepage back to the process water pond
- developing numerical groundwater focus models for individual mining areas/tailings facilities
- conducting continuous groundwater monitoring.

1.6.2.3 Air Quality

An air quality impact assessment was conducted for the Project. Two mining scenarios were assessed for the operational phases to determine the potential worst-case air quality impacts, which were based on the maximum mining rates and maximum hauling distances.

The key management measures to be implemented to minimise air quality impacts include:

- the use of chemical surfactants on unpaved roads to control vehicle-entrained dust
- the application of water sprays to control dust from crushing and screening operations and at material transfer points
- ongoing air quality monitoring.

1.6.2.4 Radiological Impacts

Potential radiological impacts occur through various pathways, including external exposure to gamma radiation due to the presence of radionuclides in naturally

occurring radioactive material ("**NORM**") and internal exposure to radiation, via the atmospheric and aquatic pathways. The radiological impact assessment found that all public radiation exposure doses resulting from uranium mining and processing operations at the Project will be trivial exposure doses as they result in total exposure doses of less than 1 µSv/y for adults and for infant receptors.

The mitigations for minimising radiological dose impacts include:

- implementing active and passive dust suppression measures
- minimising seepage and related unintended releases of radiologically relevant minerals, liquids and gases
- disposing of radioactive contaminated waste onto waste rock dumps ("**WRD**"s) and TSF in an acceptable manner
- commencing rehabilitation and closure planning early
- planning and implementing design and monitoring provisions for WRDs and TSFs.

1.6.2.5 Noise

A noise modelling study and assessment was conducted applying the baseline conditions and the predicted noise levels from the Project activities. The key mitigation measures proposed to be implemented for noise attenuation and management include:

- maintaining a noise complaint register
- monitoring ongoing noise level
- communicating blast schedules to relevant interested and affected parties
- reassessing changes to the mine plan and operations on the noise impact of the Project.

1.6.2.6 Archaeology

The main issue concerning the impact of the Project activities on the cultural heritage resources is the disturbance or destruction of the archaeological sites and their landscape setting. The measures to mitigate impacts on the key archaeological sites in the Project area include:

- modifying/rerouting of the Project infrastructure layout
- potential excavation and mapping of sites to recover material for dating.

1.6.2.7 Visual

The most significant components of the Project from a visual impact perspective are the WRDs, process plant, solar power plant, open pits and other associated major infrastructure. The mitigation measures to be implemented to minimise the visual impacts include the following:

- land disturbance will be limited to what is only necessary
- the structures remaining after closure will be shaped to blend with the surrounding landscape
- light fixtures will be only the bare minimum required and will be directed to reduce light "spillage".

1.6.2.8 Socio- economic

A socio-economic impact assessment was conducted as part of the EIA process. The Project's construction and operational phase will result in positive direct, indirect and induced economic impacts to the local, regional and national economy. The Project will have positive impacts on job creation and skills development through the creation of ~274 direct jobs and a further ~1,900 – 2,550 indirect and induced jobs. Walvis Bay and Swakopmund will experience some Project-induced in-migration. Overall, the economic benefits and the jobs and skills created far outweigh the risks that may come with in-migration of jobseekers, which can be mitigated under committed management.

1.7 Geology and Mineral Resource

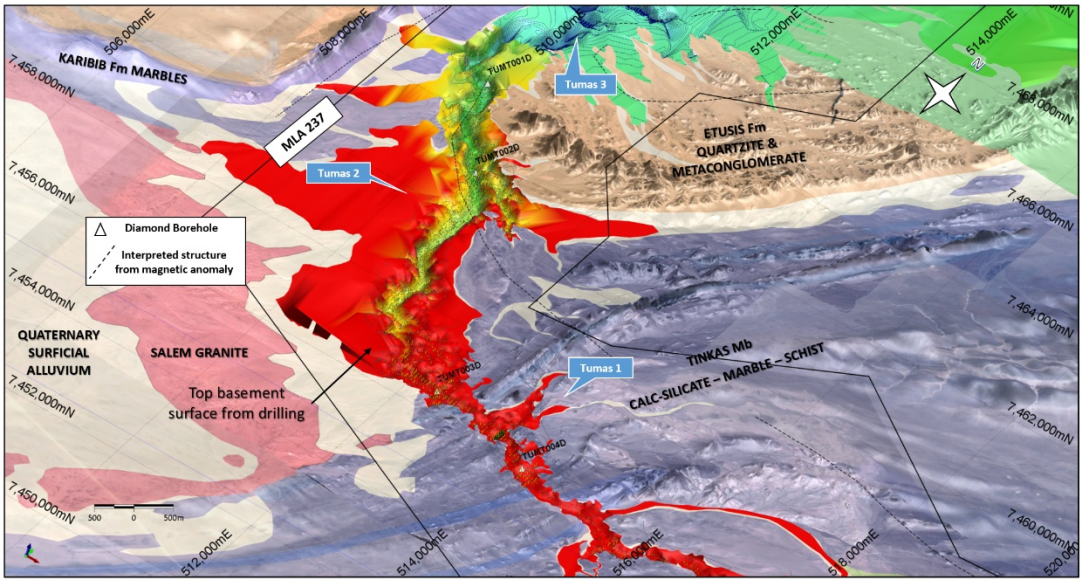
1.7.1 Geological Setting and Mineralisation

Surficial uranium deposits occur on the coastal plain of the Namib Desert, mainly between the Great Escarpment in the east and the coast in the west. The deposits are associated with fluviatile environments within palaeovalleys of ancient rivers that flowed westwards from the Great Escarpment during Upper Cretaceous and Lower Tertiary time (88 to 25 million years ago).

Uranium mineralisation occurs as carnotite (secondary uranium-vanadium mineral), hosted by Tertiary and Quaternary fluvial sediments occupying narrow and steep-sided palaeochannels (Figure 1.7.1). Host rocks vary from hard, carbonate-cemented sandstones and conglomerates (calcrete) to poorly consolidated and friable sands.

The Tumas Project is comprised of a series of palaeochannel/calcrete-type uranium deposits totalling 127 Mlb U_3O_8.

Figure 1.7.1 – 3D View of Tumas 1 and Tumas 2 Deposits



1.7.2 Drilling

Table 1.7.1 summarises the drilling undertaken at the Tumas Project since 2007.

Table 1.7.1 – Tumas Project Drilling Summary

Year	Reverse Circulation		Diamond		Aircore	
	Holes	Metres	Holes	Metres	Holes	Metres
Tumas 1 East	4,597	54,228	5	74	6	44
Tumas 1 and Tumas 2	2,634	62,306	2	62		
Tumas 3	4,160	94,196	18	368	3	75
Tubas	1,524	31,745	5	97	713	8,876
Total	**12,915**	**242,475**	**30**	**601**	**722**	**8,995**

1.7.3 Sample Preparation and Analysis

Table 1.7.1 indicates that reverse circulation ("**RC**") was the primary drilling method for the Tumas Project, with most holes sampled at 1 m intervals and each hole having a downhole gamma log survey carried out immediately after drilling was completed. All samples are lithologically logged on site and a portable RadEye™ scintillometer used to determine the radioactivity level of each sampled interval.

Assaying for the Tubas, Tumas 1 and Tumas 2 deposits was predominantly completed at the RUN in-house laboratory in Swakopmund using loose powder X-ray fluorescence ("**XRF**") techniques with some check assays completed by the ALS laboratory in Perth, Australia using a combination of pressed powder XRF and inductively coupled plasma mass spectrometry ("**ICP-MS**") techniques. Calibrated

lead block scintillometer measurements were used for a limited number of samples within the Tumas 2 dataset. Assays on drilling at Tumas 1 East completed after 2016 were undertaken on drill chips at the RMR in-house laboratory using portable XRF (**"pXRF"**) instruments with some check assays completed by ALS in Johannesburg, South Africa using pressed powder XRF techniques.

The early assaying for the Tumas 3 deposit was completed at the RUN laboratory in Swakopmund using loose powder XRF techniques, with some check assays completed by the ALS laboratory in Perth, Australia using a combination of pressed powder and ICP-MS techniques. Assays on drilling at Tumas 3 completed after 2016 were undertaken on drill chips at the RMR in-house laboratory using pXRF instruments with some check assays completed by ALS in Johannesburg, South Africa using pressed powder XRF techniques.

1.7.4 Data Verification

Drilling data, comprising collar locations, downhole surveys, geological logging, assays and downhole logging results are stored in an externally hosted third-party database. Data is validated by a specialist database geologist and internal database consistency checks. All data is referenced to the original logs, assay certificates and downhole logging files with internal audit trails maintained within the database. Downhole gamma files are processed into the database using internal routines to derive an equivalent uranium value (an external geophysical consultant has validated this methodology). Calibration values for the generation of the equivalent uranium values are maintained within the database and provide an audit trail for factors applied to downhole radiometric logging results.

Downhole gamma values are composited to 1 m intervals, from original 5 cm data, within the database and are exported as required for geological interpretation and mineral resource estimation work. The composited gamma values are also compared to geochemical assays for similar intervals to validate further the dataset derived from downhole wireline logging. No significant disequilibrium has been identified within the geophysical dataset and, as none was detected along 40 km of palaeochannel, none is expected to be present.

Consistency checks against the original files and paper logs were undertaken to confirm the validity of the imported data during the import of the geological data into the most recent database.

1.7.5 Geological Interpretation

All uranium mineralisation within the Tumas deposits is secondary in nature (carnotite) and is hosted by calcretised channel fill sediments of late Tertiary to Quaternary age.

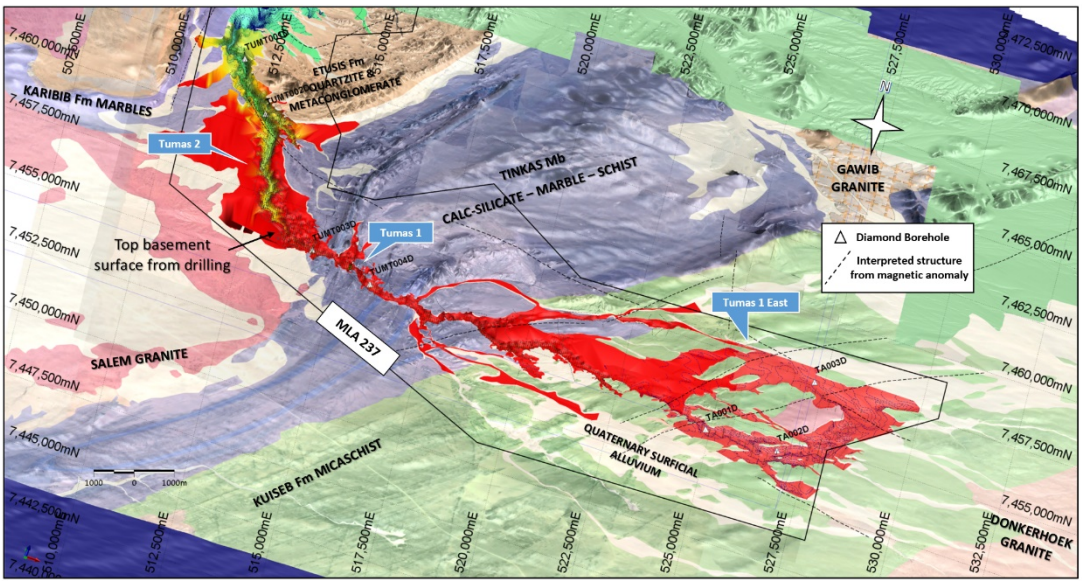
The palaeochannel sediments are mainly composed of poorly sorted polymictic gravels and conglomerates which locally turn to be clayey and/or silty with minor sands and silts. Fine-grained calcite-cemented sandstone occurs locally at the bottom and bottom edges of the palaeochannel. The detrital components consist mainly of sub-angular quartz and feldspar granules with abundant debris of surrounding basement rocks, e.g., mica schists, meta-quartzites, and granites. Calcrete bodies are interbedded with porous gravel units throughout the sedimentary column.

Two main types of calcretes are observed. One is pale to dark brown and hard, the other is white-whitish and commonly chalky. Other minor types are darker, like a dark reddish brown to pale red, very hard, fine-grained calcrete.

Preferential precipitation of carnotite is linked to physical barriers at basement levels, which were mapped by the drilling, constricting the groundwater flows and chemical barriers occurring where bedrock marble is in contact with the sediment fill.

The mineralisation considered in this study is divided from East to West into the Tumas 1 East, Tumas 1, Tumas 2 and Tumas 3 orebodies. The Tumas 1 East deposit is located in the most easterly part of the Tumas palaeochannel. It varies in width from a narrow 100 m to 400 m and increases in depth from east to west from 10 m to 20 m. It includes tributary channels to the north and south of the main channel. Mineralisation is occurring from surface to the channel base.

Figure 1.7.2 – Oblique View of Tumas 1 East in Relation to Tumas 1 and Tumas 2 Deposits



The Tumas palaeochannel Zone 1 is relatively shallow and narrow, up to a maximum of 15 m to 20 m depth and up to 200 m wide. The zone sits directly west of the

Tumas 1 East zone. It continues westwards, cuts through the north-east striking Tinkas Formation and bends to the north into the Tumas 2 zone. Two mineralised fining up sequences are observed whereby higher-grade mineralisation occurs at the transition zone between the lower cross-stratified coarser and locally calcretised deposits and an overlying planar horizontal laminated silty sandy grit.

Further downstream, at the southern end of Tumas 2, the Tumas palaeochannel turns to a north-northwesterly direction and its depth gradually increases to slightly over 40 m towards the northern end of Tumas 2. The north-northwesterly trending Tumas 2 palaeochannel is 200 to 500 m wide. The +100 ppm eU_3O_8 mineralisation is generally patchier than at Tumas 1 and 3.

At Tumas 2, the 15 m thick upper sequence is moderate reddish to light brown in colour and consists of crudely stratified, less calcareous and more oxidised deposits. The base of the sequence comprises calcite-cemented and matrix-supported sandy conglomerates and grits with abundant angular to subangular clasts of the surrounding bedrock (i.e., mica-schist, quartzite) and lenses of silty to sandy grit. The top of the sequence consists predominantly of planar horizontal laminated silty to clayey sand which locally can be gritty. Higher grade uranium mineralisation occurs at the contact zone of the upper and lower sequence.

At Tumas 3 the palaeochannel turns into a west-north-westerly direction. Here sediments include 40 to 60 m of palaeochannel fill deposited over the so-called Namib Unconformity Surface. This palaeosurface is characterised by partially steep incised palaeochannels, deeply carved into the folded and metamorphosed Damara sequence. The palaeochannel can reach up to 1.5 km wide. Mineralised tributaries enter the main palaeochannel from the east and south.

The Tumas 3 orebody is characterised by at least two sedimentary cycles overlying each other. The fining-upward sequences are composed of coarse conglomerates at the bottom, especially at the bedrock contacts followed by gravels and sand and clays with calcrete layers developed towards their tops.

Uranium mineralisation is confined to calcrete layers in both cycles. Uranium is precipitated as carnotite close to the palaeochannel floor and edges at the contact to the Proterozoic bedrock and sporadically occurs in more silty gravels of the upper sequence below the upper calcrete.

In general, higher uranium grades seem to be linked to areas of confluencing sub-channels, where they preferentially occur above island channel-bars and flood plains at the palaeochannel sides. The top calcrete unit hosts the main deposit extending across those basement islands.

1.7.6 Mineral Resource Estimation

The Tubas, Tumas 1 East and Tumas 3 resources have been estimated using Multi Indicator Kriging ("**MIK**") methods. The exploration dataset was split into ore and waste domains and indicator variography used to enable the correct assessment of the variance adjustment to be applied to the MIK estimate for each domain. In all cases the short range variography was dominated by the downhole direction as this contained both the best continuity and shortest sample spacing with continuity and ranges in the X and Y directions being dominated by drill hole spacing and general mineralisation continuity throughout the deposit.

Panel sizes used in the estimation of the mineral resource were set at 50 m x 50 m x 3 m for Tumas 1 East and Tumas 3. These were deemed appropriate to the sample spacing of the underlying dataset in conjunction with the thickness of the mineralisation. Final panel sizes for Tumas 1 and Tumas 2 were set at 50 m x 50 m x 2 m as the mineralisation is generally thinner in these deposits. For the Tubas deposit, a panel size of 40 m x 40 m x 2 m was selected. As an MIK estimate was being undertaken, the expected Selective Mining Unit ("**SMU**") size was set at 4 m x 4 m x 3 m or 4 m x 4 m x 2 m as appropriate (similar to that employed at the nearby Langer Heinrich Uranium Mine ("**LHUM**")) for the Tumas deposits and 5 m x 5 m x 2 m for the Tubas deposit with an expected grade control spacing of 4 m x 4 m x 1 m being completed prior to actual mining.

Figure 1.7.3 –Tumas 1 East Wireframes, Oblique View

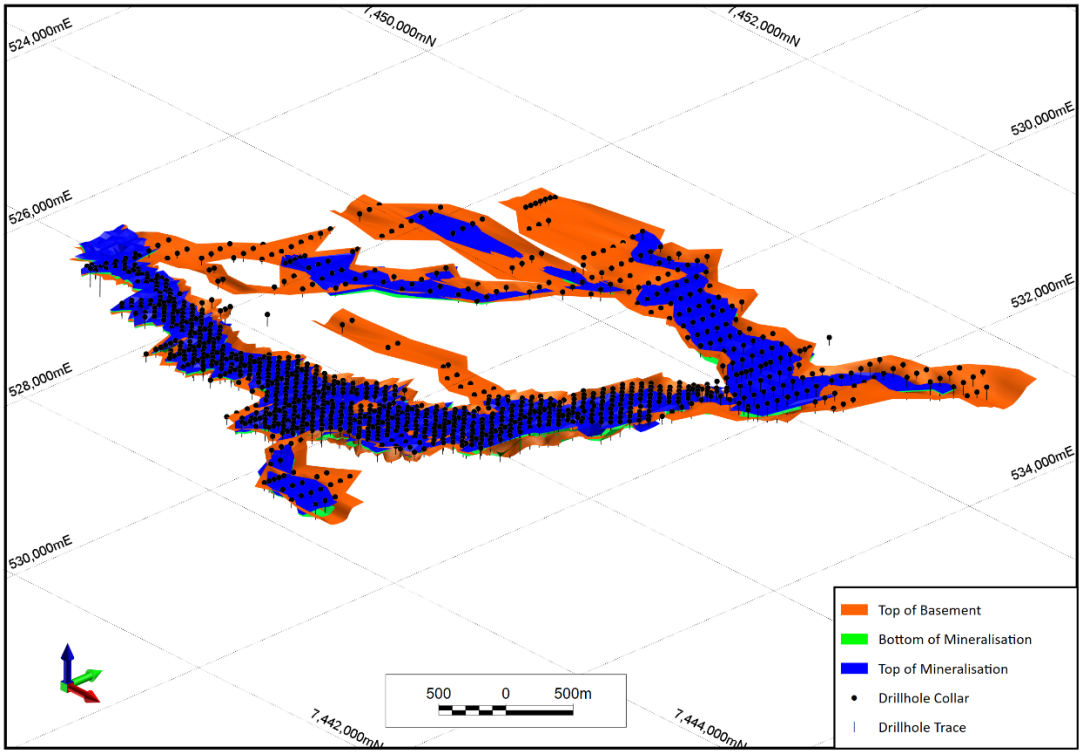


Figure 1.7.4 –Tumas 1 and Tumas 2 Mineralised Domains, Plan View

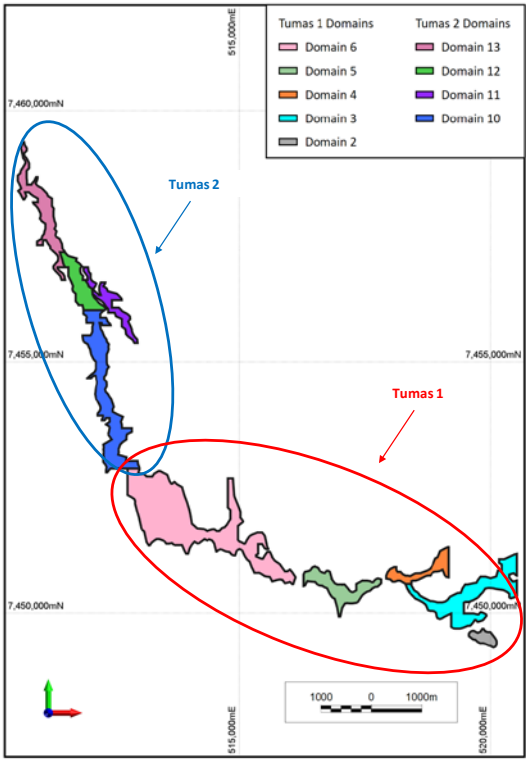


Figure 1.7.5 – Tumas 3 Wireframes, Oblique View

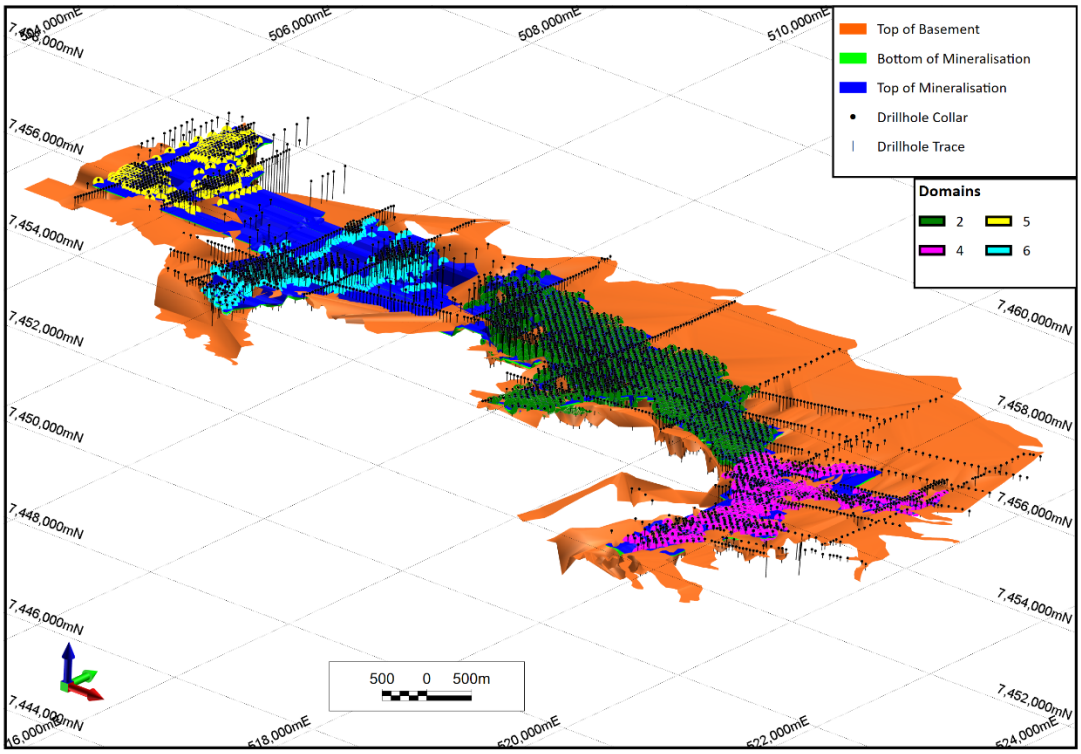
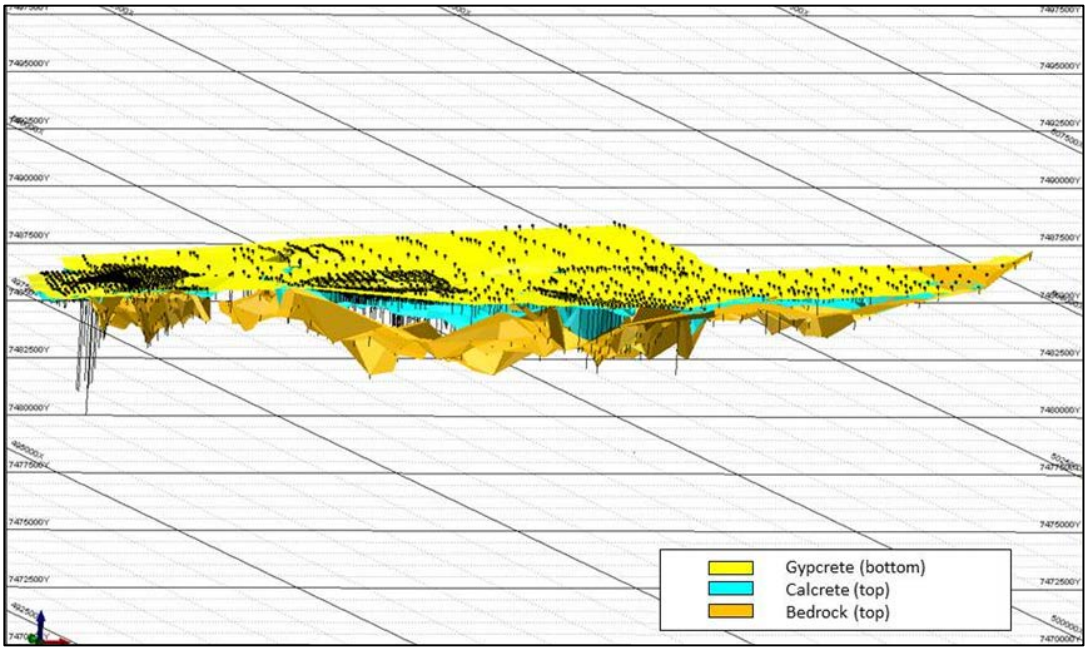


Figure 1.7.6 – Tubas Wireframes, Oblique View



1.7.7 Mineral Resource Estimate

The Tumas Project Mineral Resource documented in Table 1.7.2 has been classified as Indicated and Inferred Resources and reported in accordance with the 2012 JORC Code.

Table 1.7.2 – Tumas Project Mineral Resources at 100 ppm U_3O_8 Cut-off

Cut-off	Indicated			Inferred			Total		
	Ore (Mt)	Grade eU_3O_8 (ppm)	U_3O_8 metal (M lb)	Ore (Mt)	Grade eU_3O_8 (ppm)	U_3O_8 metal (M lb)	Ore (Mt)	Grade eU_3O_8 (ppm)	U_3O_8 metal (M lb)
Tumas 1 East	36.3	245	19.6	19.4	216	9.2	55.7	235	28.8
Tumas 1 and Tumas 2	54.1	203	24.2	2.4	206	1.1	56.5	203	25.3
Tumas 3	78.0	320	54.9	10.4	219	5.0	88.4	308	59.9
Total Tumas	**168.3**	**266**	**98.7**	**32.2**	**216**	**15.3**	**200.5**	**258**	**114.0**
Tubas	**10.0**	**187**	**4.1**	**24.0**	**163**	**8.6**	**34.0**	**170**	**12.7**

1.8 Mining and Ore Reserves

1.8.1 Mine Design Considerations

The mining methodology of using conventional excavators and haul trucks was selected in the 2021 Prefeasibility Study and is based on the successful application of this methodology in nearby operations of the same configuration (e.g., Langer Heinrich Uranium Mine).

Geotechnical drilling and assessment has been undertaken for the Project. The design overall pit slope angle of 35° is considered reasonable based on the geotechnical work, relevant experience at other (nearby) locations.

As the palaeochannel aquifer predominantly lies below the ore reserve, no significant pit dewatering is required. Several bores are installed to produce low grade, high total dissolved solids ("**TDS**") water for dust suppression purposes.

1.8.2 Pit Optimisation

The pit optimisation parameters used in the 2021 Prefeasibility Study were carried over into this study and are summarised in Table 1.8.1. Whilst some of these costs are less than those generated in this study, the findings of the financial modelling presented within this report confirm that the Reserves may be economically exploited.

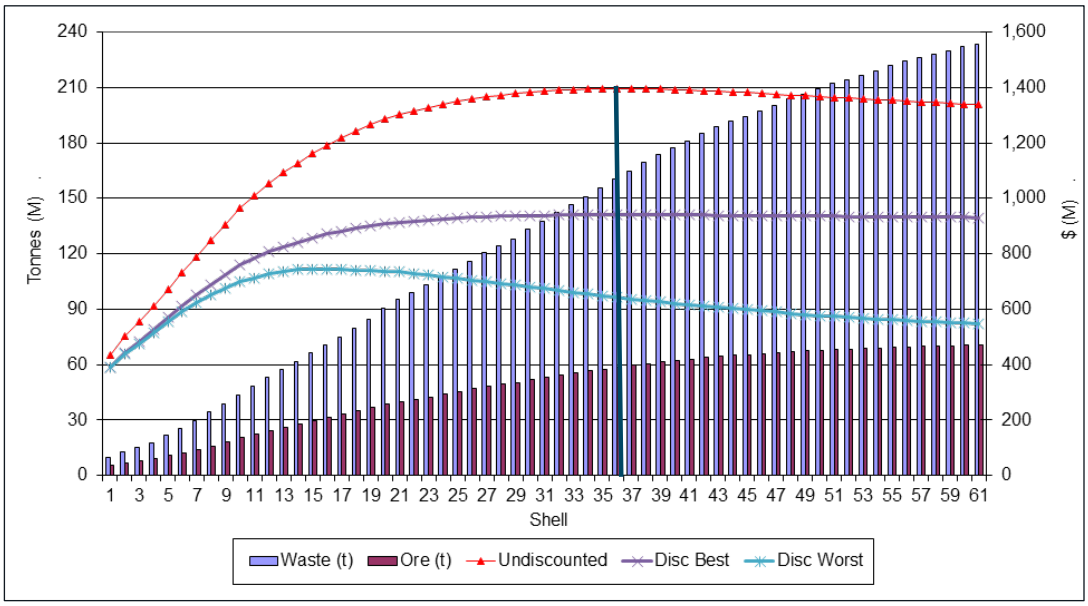
Table 1.8.1 – Ore Resource Optimisation Input Parameters

Parameter	Units	Value	
Mining		**Ore**	**Waste**
Fuel[1]	$/bcm	0.78 – 0.96	0.78 – 0.95
Load and Haul – in-pit	$/bcm	1.87 – 2.42	
Haul – ex-pit[1]	$/bcm	0.92	0.90
Drill and Blast	$/bcm	1.31	
Ore Processing			
U_3O_8 recovery	%	93.3	
Contractor overheads	$/t ore	1.54	
ROM loading	$/t ore	1.02	
Processing	$/t ore	9.33	
Plant maintenance	$/t ore	1.55	
General and Administration	$/t ore	2.35	
Financial			
U_3O_8 price	$/lb U_3O_8	65	
Selling costs	$/lb U_3O_8	1.59	
Diesel cost	$/L	0.56	

[1] *costs vary with pit depth*

The result of the pit optimisation runs for Tumas 3 are illustrated in Figure 1.8.1, with Shell 36 being selected as the preferred option as it satisfies the company's strategic objectives while remaining a robust shell selection at reduced revenue price assumptions. The determination of economic viability at lower revenue pricing was achieved by analyses of the discounted worst values from $65 /lb to $35 /lb in $5 /lb increments. Shell 36 represents an acceptable balance between shell size with the associated ore, and the risk of lower revenue pricing.

Figure 1.8.1 – Tumas 3 Tonnage/Cashflow Chart



1.8.3 Waste Rock Characterisation

The mineralogical and chemical analysis of Tumas waste rock samples indicate that the acid-forming potential of the waste rocks is extremely low.

1.8.4 Waste Rock Management

As all process plant tailings (including tailings from Tumas 1, Tumas 1 East and Tumas 2) are to be stored within the Tumas 3 pits, the waste rock management process at Tumas 3 differs from that at the other pits.

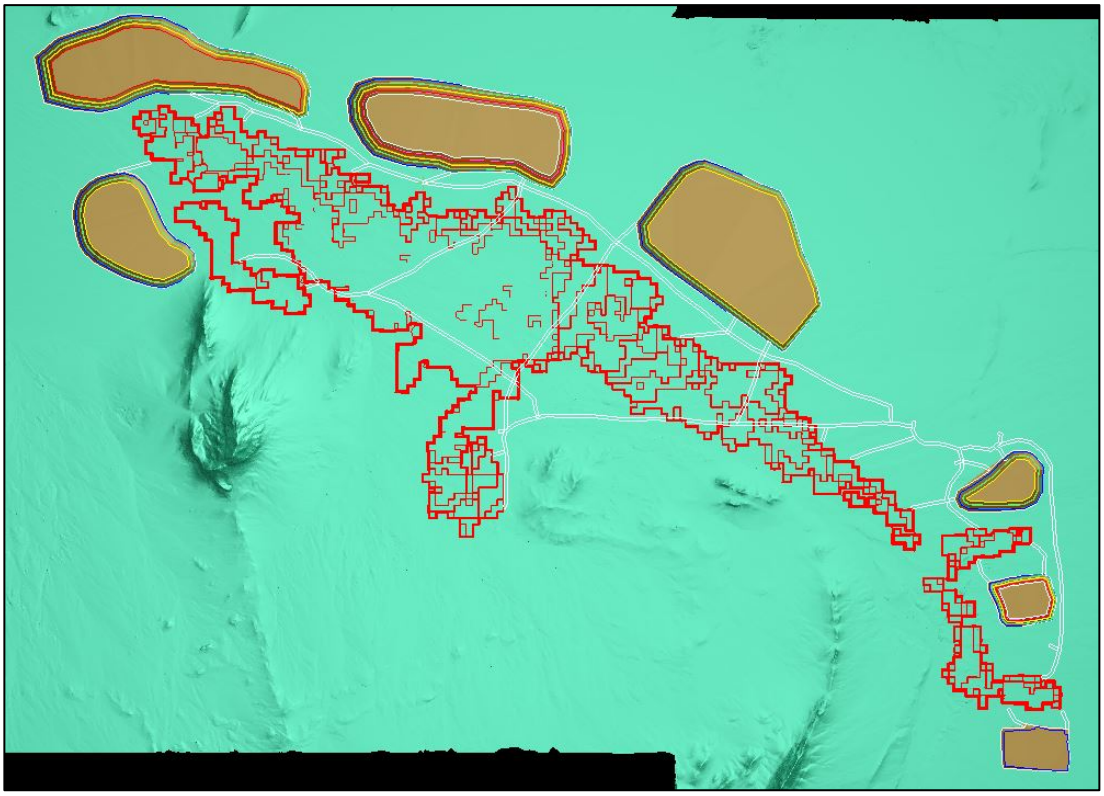
At Tumas 1, Tumas 1 East and Tumas 2 all waste, other than that required to generate the start-up pit, is direct placed back into a mined-out void and hence will always be below pre-mining topography.

Waste rock from Tumas 3 is either used to construct in-pit divider embankments as part of the tailings management process, placed on ex-pit waste dumps or used as capping on any tailings areas that have been filled to design capacity.

Waste rock mined from the Tumas 3 area not required for divider embankment construction or for final capping is stored permanently in waste rock dumps ("**WRD**") located at the periphery of the mine pit(s). Waste rock is placed in 10 m lifts with 10 m wide berms. Mineralised waste rock (less than 100 ppm U_3O_8) will be encapsulated in the WRD's by non-mineralised waste rock (below detection limit).

On completion, each lift is battered below the natural angle of repose to 20º and the overall dump batter slope of the completed dump after rehabilitation shall be 17º. The areas reserved for WRDs in the Tumas 3 area are shown in Figure 1.8.2.

Figure 1.8.2 – Tumas 3 Haul Road and Waste Dump Layout



1.8.5 Mine Production Schedule

The pit production and process feed schedule were developed in quarterly increments resulting in a 22-year mine life, exclusive of four quarters of pre-production in which waste stripping is conducted and a Run of Mine ("**ROM"**) stockpile is built to have process feed material and available Tailings Storage Facility ("**TSF**") volume available from the start of production.

Mining commences with the Tumas 3 southeast pits, progressing to the Tumas 3 western stages and ending at the Tumas 1 and Tumas 1 East stages with the total mining schedule taking place within 21.25 years, including the four quarters of pre-production (Figure 1.8.3).

The schedule achieves the primary aim of producing the target 4.15 Mt/y of ore feed to the plant for LOM and uranium of 3.6 Mlb/y of U_3O_8 product for the first ten years of production, excluding ramp up, after which periods of slightly lower feed grades

result in lower production levels (Figure 1.8.4). The feed tonnes and grades are managed by use of planned stockpiles with high grade and medium grade stockpiles of ore feed material whereby the higher grade is fed preferentially to achieve the target product. A low-grade stockpile is also built throughout the mine life though it is not planned as an ore feed and remains on stockpile at the end of this planned mine life (Figure 1.8.5). It may be treated at a later date should economic conditions permit at that period in time. The medium grade stockpile is completely depleted in the final four years of the schedule.

Figure 1.8.3 – Ore Tonnes and Grade Mined, by Quarter

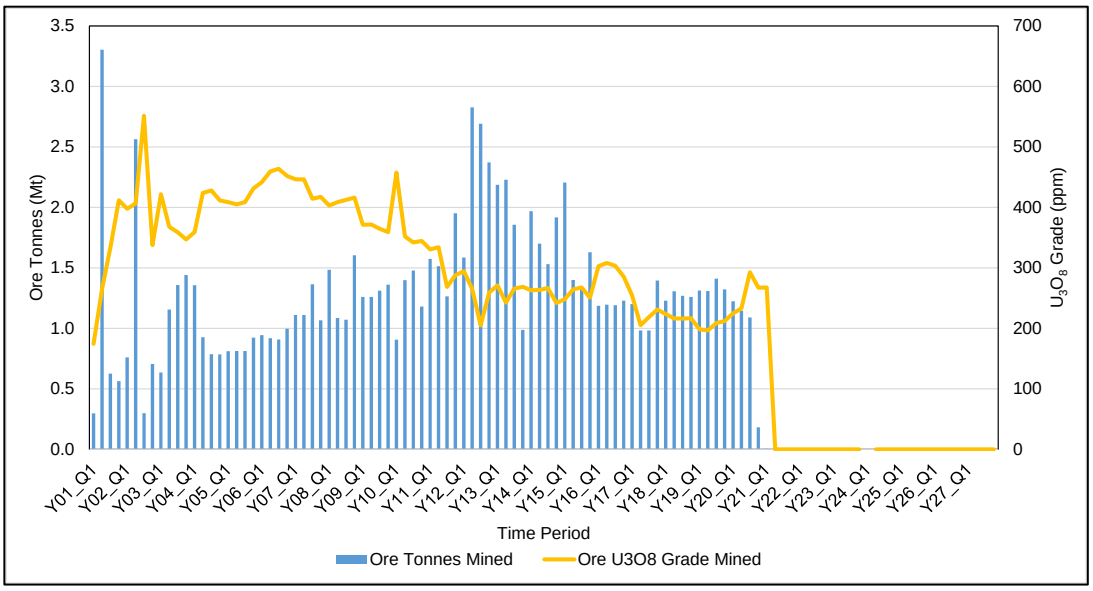


Figure 1.8.4 – Ore Tonnes and Grade Processed, by Quarter

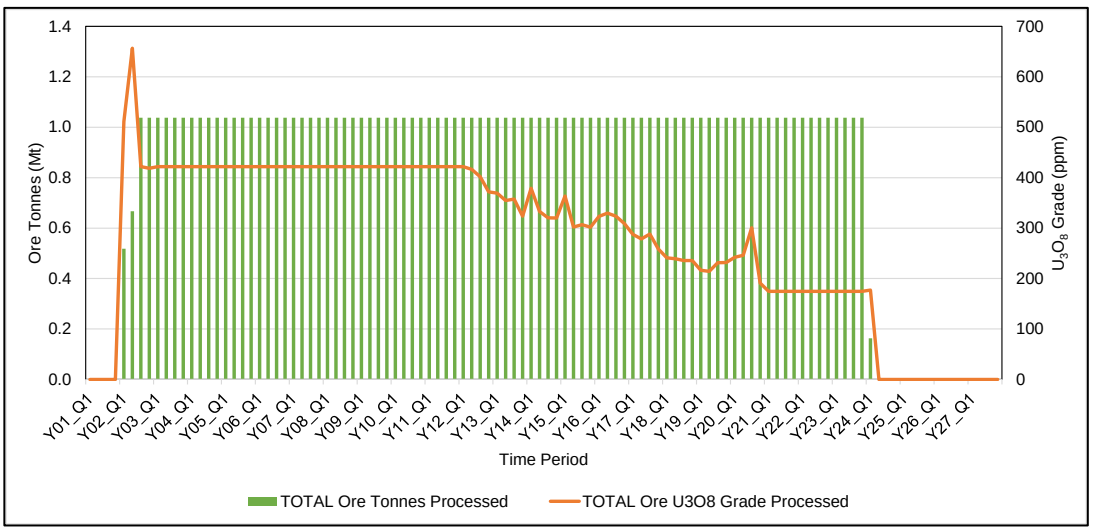
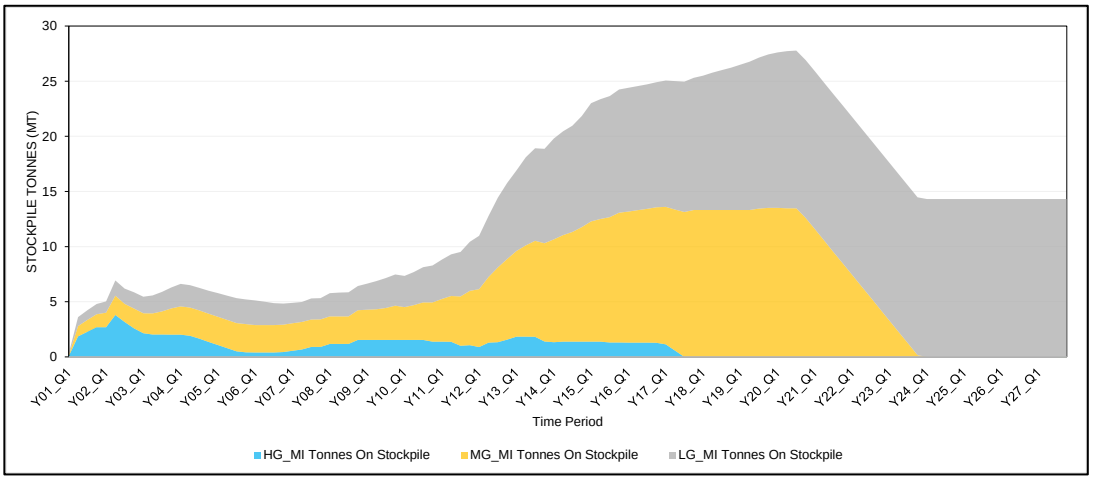


Figure 1.8.5 – Closing Stockpile Balance, by Quarter



1.8.6 Mine Contractor, Equipment and Facilities

Towards the end of the DFS period, expressions of interest were sent to seven potential pre-qualified mining contract service providers and, subsequent to that, tender documents were provided to five separate groups. The bids received were all largely compliant with the bid requirements and offered a range of fleet spreads. Two were relatively high cost and the remaining three were all of a similar magnitude. One of the three, considered to be the most suitable (not the lowest cost) was selected to develop the mining cost estimate for the Project.

The key equipment selection of the selected bidder is listed in Table 1.8.2.

Table 1.8.2 – LOM Mining Equipment Requirements

Description	Proposed Plant	Number
250 t excavator	Caterpillar 6030BH	3
93 t dump truck	Caterpillar 777E	16
12.3 m^3 front end loader	Caterpillar 992K	3
56 t haul truck	Volvo FMX 460 10X4 tipper	25

1.8.7 Ore Reserves

The Tumas Ore Reserve estimate remains unchanged from the October 2021 Reserve and is shown in Table 1.8.3. The amount of ore treated in the financial model is marginally above the ore reserve tonnage due to 2.2Mt of low-grade material being processed that was not included in the ore reserves.

Table 1.8.3 – Tumas Ore Reserve Estimate

Probable Ore Reserves	U_3O_8 Cut-off (ppm)	Tonnes (Mt)	U_3O_8 (ppm)	U_3O_8 Metal (Mlb)
Tumas 3	150	44.9	414	41.0
Tumas 1 East	150	29.5	266	17.3
Tumas 1 and Tumas 2	150	13.9	292	9.0
Total	**150**	88.4	345	67.3

1.9 Geometallurgy

Four mineralisation types have been defined within the Tumas-Tubas palaeochannel based on the type of host rock: calcrete, gypcrete, red sand and basement. Of these, the calcrete-type mineralisation contains most of the uranium. The calcrete ranges from sand to granule size, with about 30 % consisting of pebbles with a maximum dimension of 6.4 cm. The only uranium-bearing mineral of economic importance is carnotite ($K_2(UO_2)_2V_2O_8 \bullet 3(H_2O)$), which contains vanadium with a U/V ratio of 4.5. Detailed mineralogical and geochemical analysis shows that vanadium is also contained in iron oxide and titanium minerals. The calcrete-type mineralisation contains on average 3-4 wt% clay with the clays species being illite and palygorskite (magnesium-bearing). Investigations of leach samples show that a small portion of uranium behaves refractorily as it occurs as submicron-sized carnotite inclusions in calcite.

Only gypcrete and sulphate bearing calcrete are known to have direct adverse impacts on the leaching efficiency using alkaline conditions. Gypcrete is defined as palaeochannel sediment with greater than 0.35 wt% total in sulphur (equivalent to 1.58 wt% bassanite, a calcium sulphate mineral). Gypcrete forms a thin, discontinuous layer, a few metres below the surface and generally defines the upper limit of uranium mineralisation. It is only mineralised with uranium in a few locations and is likely to make up only a very small portion of the total resource. Based on the process design, a sulphate sulphur content of 0.035 % is the accepted average concentration for ore material.

The challenge of determining the boundary between sulphur-rich and sulphur-poor material is still being addressed.

1.10 Metallurgy

1.10.1 Introduction

Given the geological and mineralogical similarities between Tumas and the nearby Langer Heinrich Uranium Mine ("**LHUM**"), the development of a metallurgical process for Tumas has used LHUM as a starting point, with fundamental process

changes made only by exception to improve on the inherent operating cost limitations of the LHUM process.

Beneficiation testwork was undertaken with the objective of achieving a clean physical separation of clast (coarse, barren silicate particles) and cement (fine calcrete containing the sole value mineral, carnotite). Specific attention was given to achieving a high degree of cement liberation from the clasts (to permit high uranium recovery) while minimising breakage of the clasts themselves, to maximise mass rejection ahead of the downstream hydrometallurgical plant. No low grade ultra-fine (slimes) fractions were evident and thus desliming was not considered due to the detrimental impact on uranium recovery.

Given the high carbonate and low sulphate content of the fine beneficiation product only alkaline leaching was considered. Testwork was conducted across a range of leach conditions to support a trade-off study; ultimately leach conditions similar to LHUM were selected to optimise process economics.

Pre- and post-leach solid-liquid separation testwork was conducted for both thickening and filtration, with filtration rejected on economics due to low/unfavourable filtration rates. A counter-current decantation ("**CCD**") circuit was therefore selected, similar to LHUM.

Ion exchange ("**IX**") with bicarbonate elution is used at LHUM for treatment of the resultant pregnant leach solution ("**PLS**"). Although technically compatible with the Tumas PLS, IX was not considered for use at Tumas due to the inherent limitations it places on the hydrometallurgical circuit carbonate balance.

In place of IX, PLS concentration using nanofiltration ("**NF**") membranes was selected for its ability to achieve a clean separation of uranium and carbonate (as well as vanadium and sulphate) from water, producing a permeate low in carbonate and uranium for use as CCD wash, with the PLS concentrate retained for further treatment to remove uranium, vanadium and sulphate, with the residual carbonate being recycled to leach.

In this way, the Tumas process could produce a final tailing slurry containing low levels of all value components, namely uranium, vanadium and carbonate, with consequent economic and environmental benefits over and above LHUM. This also has the benefit that the tailings stream has low levels of radioactive components and hence is considered benign.

The PLS concentrate treatment process was developed specifically to remove all components that were concentrated across the NF membranes *except* carbonate; namely uranium (present as sodium uranyl carbonate), vanadium (present as sodium vanadate) and sulphate (present as sodium sulphate).

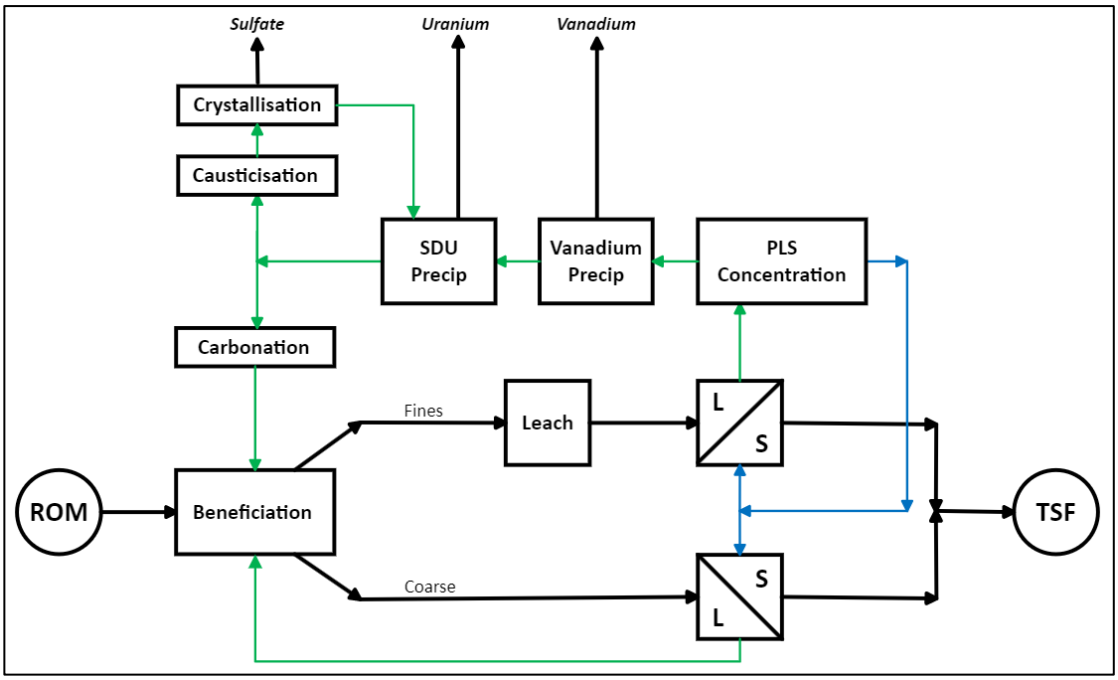
In summary, the selected PLS concentrate treatment process comprises:

- vanadium precipitation using lead carbonate
- sodium diuranate ("**SDU**") precipitation internally regenerating caustic
- causticisation of uranium barren liquor using slaked lime
- crystallisation of sodium sulphate from caustic product liquor
- carbonation of uranium barren liquor using boiler flue gas.

Carbonated liquor is returned to the Beneficiation area, where make-up sodium carbonate solids are added to maintain the required concentration in the leach liquor.

A simplified block flow diagram of the Tumas process that forms the basis of this study is shown in Figure 1.10.1.

Figure 1.10.1 – Block Flow Diagram



1.10.2 Metallurgical Testwork Programs

Two distinct metallurgical testwork programs were conducted to support the Tumas Feasibility Study ("**FS**"). The first utilised a single 270 kg ore composite which was used to develop those parts of the process where chemical and/or physical performance is directly linked to the ore properties, namely:

- beneficiation
- leach

- CCD.

A second testwork program covered the unit operations downstream of pregnant leach solution ("**PLS**") concentration, namely:

- vanadium precipitation
- uranium precipitation
- causticisation
- crystallisation
- carbonation.

This work used synthetic liquors whose composition was based on the mass balance, calibrated to match the results of the beneficiation/leach/CCD testwork and trade-off study work.

1.10.3 Sample Selection and Composite

The FS is supported by a testwork program undertaken at the ALS Metallurgy laboratory in Perth, which commenced in July 2021. The first phase of the testwork scope is sensitive to the physical characteristics of the ore (beneficiation, solid/liquid separation and leach), and as such, was performed using material from a single bulk composite comprised exclusively of diamond core samples. Collectively, the samples provide a reasonable reflection of the Tumas 3 Indicated Mineral Resource. Variability testwork will be performed on a range of composites at a later phase in the testwork program.

The completed FS composite sample weighed 340 kg with a head grade of 374 g/t U_3O_8. A summary of the composition of the FS composite can be found in Table 1.10.1.

Table 1.10.1 – FS Composite Head Assay

Uranium (g/t U_3O_8)	Vanadium (g/t V_2O_5)	Sulphur (% w/w)	Moisture (% w/w)
374	189	<0.02	4.01

1.10.4 Beneficiation

A comprehensive beneficiation metallurgical testwork program was undertaken using the FS feed composite sample. At the highest level, the metallurgical objective of the beneficiation circuit is to achieve a clean physical separation of clasts (coarse silicate particles containing no uranium) and cement (fine calcrete containing the sole value mineral, carnotite) present in the ore. This will be achieved via primary milling followed by separation of the high-grade fines and low-grade coarse material.

The low-grade coarse material will be processed in a closed-circuit autogenous mill followed by a low-speed stirred mill. The high-grade fine material will be milled in a low-speed ball mill using ceramic media.

To guide specific test objectives, the following beneficiation benchmarks were used:

- Tumas PFS: 97.7% uranium recovery into 65% mass
- LHUM: 90 – 95% uranium recovery into ~60% mass.

Furthermore, based on the Tumas Pre-Feasibility Study ("**PFS**") operating costs, it was determined that the breakeven leach feed solids grade was 100 g/t U_3O_8. That is, a hypothetical 100 g/t particle recovered in the beneficiation circuit, if leached, would generate just enough uranium product to cover its variable processing costs.

For this reason, the beneficiation circuit should look to continue to impart energy until the grade of the last increment of generated fines falls to 100 g/t U_3O_8. At this point, energy addition should stop, and classification be undertaken to recover the fines and discard the coarse. Based on experience, it is expected that the bulk grade of the coarse fraction will be reduced to <20 g/t U_3O_8 when the incremental fines grade is 100 g/t.

A primary milling circuit (-200 mm product) similar in nature to that used at LHUM was accepted as robust and necessary for Tumas given the nature of the ore. A total of 32 batch primary mill tests were completed. 20 L bottle rolls (2 kg solids per test) were used evaluate the how the ore responds to milling under a range of conditions, which formed the basis of the selection of conditions to pursue in larger scale. 350 L Iso mill tests (30 kg solids per test) were used to test target conditions and derive design data as well as generate sufficient product for downstream testing. From this testwork it was determined that a specific energy range of 1.0 to 2.5 kWh/t would provide a conservative design window to achieve the desired breakage, and 1.5 kWh/t has been allowed for in the operating cost model. The mill is able to operate either side of this point by varying both the mill speed (30 to 70% critical speed) and fill volume (high and low via change of the discharge launder height).

Following primary milling the ore is split into high-grade fines and low-grade coarse. In order to improve the selective liberation of uranium to the fines in the low-grade circuit, a series of locked-cycle autogenous milling tests were completed on the +1 mm product from the primary milling tests. This series of tests showed that prolonged primary milling of the +1 mm fraction had potential to achieve 'discard' grades in the +1 mm, -10 mm range. And the breakage mechanism in the autogenous mill continued the selective liberation of uranium to the fines. Therefore, autogenous milling of the coarse, low-grade product from the primary mill will be employed.

A dedicated ball mill is required to treat the high-grade fines (-1 mm, +63 µm) from the primary mill. A total of 29 batch ball mill tests were completed. 5 L (~0.5 kg solids per test) and 20 L bottle rolls (2 kg solids per test) were used to determine optimum conditions, followed by six larger 350 L Iso mill tests (15 kg solids per test) used to derive design data as well as generate sufficient product for downstream testing. All tests used ceramic media, either 5-6 mm or 10-12 mm diameter, which was selected for its low SG relative to steel (3.7 versus 7.7) and the resulting selective nature of the cement treatment. The secondary mill has been sized to operate between 9.0 and 15.0 kWh/t by adjusting both media load and mill rotational speed.

Stirred mill tests, were conducted alongside the secondary ball milling tests. Whilst still inferior to the results achieved in the ball mill the stirred mill provides the results at a lower cost and such is appropriate for the low-grade product from the autogenous mill. Additional testwork is being undertaken to evaluate whether a similar yield/recovery relationship can be achieved on the low-grade autogenous mill product.

The results of the beneficiation testwork were used to calibrate a model that was then used to determine the mill operating points that would deliver optimum process economics. The resultant Beneficiation mass and uranium deportment are as follows:

- Recovery to leach feed:
  - Mass 45%
  - Uranium 95%
- Input
  - ROM 526 t/h (4.15 Mt/y @ 350 ppm U_3O_8)
- Outputs
  - Leach feed 237 t/h (1.9 Mt/y @ 741 ppm U_3O_8)
  - Coarse reject 289 t/h (2.3 Mt/y @ 31 ppm U_3O_8).

1.10.5 Leach

A leach testwork program was completed as part of the wider FS metallurgical testwork scope with the objective of determining optimum leach conditions (temperature, reagent concentration and time) for use in the Tumas FS. Tested conditions encompassed the following ranges:

- slurry solids content 30% w/w
- temperature 90 to 170 °C
- liquor sodium carbonate concentration 15 to 30 g/L.

Initial tests (16 tests @ 1 kg solids each, using fines produced in the beneficiation testwork program) were conducted and used to inform a trade-off study which considered both elevated- and ambient-pressure leaching. The trade-off study concluded that whilst high temperature leaching, as applied in the PFS, delivered a significant reduction in residence time, this was insufficient to offset the higher capital cost associated with operating at elevated pressures.

As a result, the following leach conditions were selected for use in this study:

- temperature 90 ˚C
- liquor sodium carbonate concentration 20 g/L.

These conditions were further tested in three bulk leaches (20 kg solids each) which were used to generate sufficient leach residue sample for solid-liquid separation vendor testing.

The leach test results were used to calibrate a kinetic model which was then used to determine the optimum residence time. This was found to be 36 h (6 x CSTR's @ 6 h each) which will extract 97% of the uranium in the leach feed solids.

In general, the leach liquors produced were found to contain vanadium at a V:U molar ratio of 0.9 to 1.1 n/n, supporting the view that the only soluble vanadium mineral at the prevailing leach conditions is carnotite, and that vanadium is present in carnotite at a uranium molar ratio of 1.0 (i.e., $K_2(UO_2)_2(VO_4)_2$).

Potentially economic levels of uranium (~20 ppm U_3O_8) and vanadium (~300 ppm V_2O_5) remain the leach residue. Further work is required to understand the mineral form(s) of these elements and whether any potential exists for their physical concentration and subsequent hydrometallurgical treatment. Some work has commenced in this regard.

1.10.6 Solid-Liquid Separation

A Solid Liquid Separation ("**SLS**") testwork program was completed as part of the wider FS metallurgical testwork scope with the objective of defining settling performance and SLS equipment sizing and selection criteria. The program focussed on the settling performance in SLS applications on ore derived process streams, specifically leach feed thickening and CCD areas. The testwork was completed independently by two of the major SLS equipment vendors, FLSmidth & Co. A/S ("**FLS**") and Metso Outotec Corporation ("**MO**").

This work was used to select and specify leach feed and CCD thickener sizing together with corresponding flocculant and/or coagulant dose rates. These are summarised in Table 1.10.5.

Table 1.10.2 – Thickener Design Parameters

	Units	Leach Feed	CCD1-5	CCD6-8
Thickener diameter	m	30	40	40
Flocculant dose	g/t	40 nom, 60 max	40 nom, 60 max	75 nom, 100 max
Coagulant dose	g/t	0	0	50 nom, 100 max
UF solids	w/w	35 nom, 42 max	30 nom, 38 max	30 nom, 38 max

1.10.7 PLS Concentration

The PLS concentration circuit comprises an ultra-filtration ("**UF**") circuit for final removal of (fine) suspended solids from the PLS. This is followed by a nano-filtration circuit which separates mono-valent ions (chloride) and the bulk of the water from the remaining multi-valent ions (carbonate, sulphate, uranium and vanadium), which are thereby concentrated.

UF and NF testwork was previously conducted by the now-Deep Yellow technical team at LHUM when it was in operation. This work used a purpose-built continuous pilot plant which was operated in several campaigns across a period of six weeks. Typical plant PLS throughput was 1-3 m^3/h and a total of 400 m^3 of PLS was processed.

Membrane selectivity was consistently high, with permeates consistently <5 mg/L U_3O_8 and < 0.5 g/L Na_2CO_3. Of all the anionic species present in PLS, only chloride reported to permeate in any appreciable quantity, which was expected.

This work allowed selection of a suitable NF membrane type, along with the relationships between feed pressure, NF membrane flux and membrane rejection performance (selectivity).

Further NF testwork is required to test alternative NF membranes to that currently selected based on the LHUM work. This work will also look to better establish long term membrane performance with respect to both throughput (flux) and selectivity.

1.10.8 Vanadium Precipitation and Refining

The Tumas process uses lead to selectively precipitate vanadium from the NF concentrate due to its ability to strongly and selectively precipitate vanadium as lead vanadate. As applied to the Tumas process, vanadium precipitation comprises three sequential steps:

1. Vanadium precipitation: mixing NF concentrate with lead carbonate; precipitating lead vanadate.

2. Vanadium leach: mixing sulphuric acid with lead vanadate/carbonate; generating vanadyl sulphate liquor and precipitating lead sulphate.
3. Lead conversion: mixing sodium carbonate solution with lead sulphate; generating sodium sulphate liquor (waste) and precipitating lead carbonate for re-use.

A series of batch tests (38 tests @ 1 to 5 L each) were completed covering all three sub-operations. The precipitation tests used synthetic NF concentrate as feed, whilst the leach and conversion tests used solids produced from upstream tests.

Towards the end of the program a single 2000 L precipitation test was completed to generate sufficient lead vanadate sample for solid-liquid separation vendor testing.

A bulk sample of precipitated lead vanadate was used for solid-liquid separation testwork to size and specify a thickener and filter.

The vanadyl sulphate liquor produced from the above process is both concentrated (40 g/L V_2O_5) and low in volume (1.4 m^3/h) leading to a low variable cost of vanadium production for this process. This liquor will be processed in a dedicated ion exchange circuit to remove remaining traces of uranium that have been physically transferred during vanadium precipitation. The uranium-free liquor will be evaporated to crystallise a crude mixed vanadyl-sodium sulphate salt.

The vanadium refining process has not been tested in the current testwork program due to low volumes of vanadium material being available and it being deemed a low priority. As such the vanadium refinery has been designed and estimated at concept level. Previous work on the ion exchange circuit was conducted by the now Deep Yellow technical team at LHUM when it was in operation; this work forms the basis of the current design.

Further marketing work is required to inform final selection of vanadium product type and its associated economic viability.

Vanadium product derived from Tumas ore will be produced in the next phase of work.

1.10.9 Uranium Precipitation and Refining

Uranium is precipitated as SDU from the vanadium barren liquor using an internally generated dilute sodium hydroxide (caustic) solution.

A series of batch SDU precipitation tests (11 tests @ 1 to 5 L each) were completed. The precipitation tests used vanadium barren liquor generated from the preceding vanadium precipitation tests.

No further work has been performed on the refining of SDU through to UO_4/U_3O_8 in the current testwork program. This is due to the well-known chemistry through this part of the process given the Deep Yellow's technical team design and operating experience derived from LHUM.

U_3O_8 samples derived from Tumas ore will be produced in the next phase of work.

1.10.10 Causticisation

Causticisation is a mature commercial process for converting sodium carbonate, present in the advancing Uranium Barren Liquor ("**UBL**"), into sodium hydroxide, which is required for SDU precipitation. The process uses a slaked quick lime reagent to drive the reaction, producing an insoluble calcium carbonate residue. The product slurry is filtered and washed, liquor advancing to sulphate crystallisation and solids returned to the leach circuit.

During the FS testwork program, several causticisation batch tests were performed at both 2 L and 100 L scale. Product slurry from the 100 L tests was used for solid-liquid separation testwork to size and specify the associated equipment.

1.10.11 Crystallisation

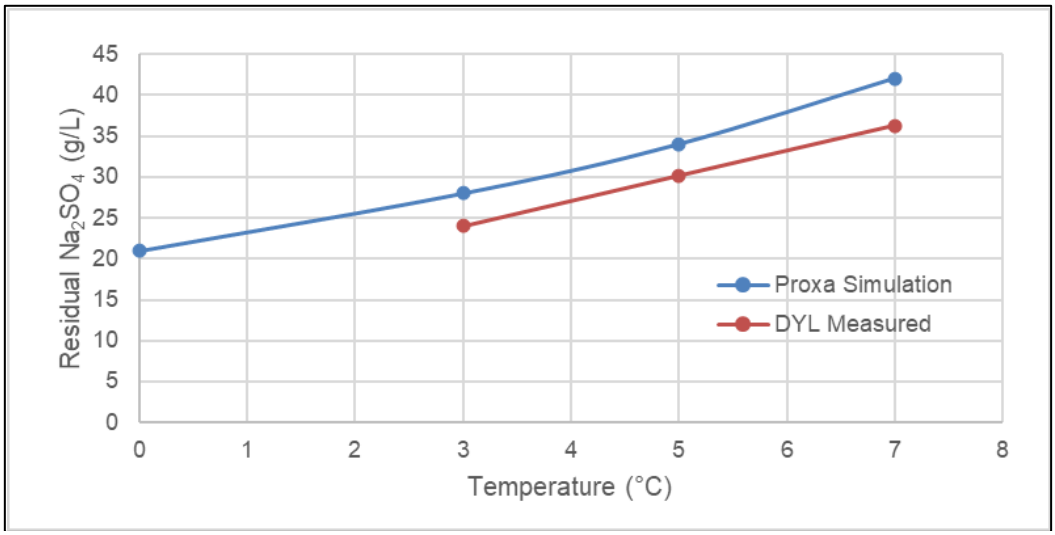
Sodium sulphate crystallisation is used in the Tumas FS flowsheet as a method of selectively removing sulphate from the process. Sodium sulphate enters the process primarily via the dissolution of gypsum in the ore, and naturally concentrates in the process, following the carbonate, uranyl carbonate and vanadate ions through the nanofiltration stages into the NF concentrate.

The capacity of the nanofiltration circuit to concentrate the PLS is limited by the total concentration of carbonate and sulphate in the PLS. As a result, limiting the recycle of sodium sulphate in the carbonated UBL enables a higher concentration upgrade of carbonate/uranium over the membrane circuit, reducing both the size (impact on capital cost) and operating cost of downstream precipitation circuits.

Flash cooling crystallisation of sodium sulphate in the decahydrate form (Glauber's salt) is a commonly used method of sodium sulphate removal in industrial refining process such as lithium hydroxide production. The process relies on the differential solubility at lower temperatures of sodium sulphate against other aqueous salts to selectively crystallise Glauber's salt from the stream.

During the FS OLI simulations were conducted by Proxa to determine expected sodium sulphate solubility in the caustic product liquor stream as a function of temperature. Several batch cooling tests were completed to verify simulation results and results are shown in Figure 1.10.2.

Figure 1.10.2 – Residual Sodium Sulphate Versus Temperature



The comparable results between simulated results provided by Proxa and testwork completed, as displayed in Figure 1.10.2, supports the design basis of 5 °C operating temperature delivering a residual low-sulphate caustic product liquor of 34 g/L Na_2SO_4. Opportunity exists for additional cooling below 5 °C via future equipment expansion to further reduce the sulphate tenor of the crystalliser product liquor if the process requires additional sulphate removal.

1.10.12 Carbonation

Carbonation is a process which reacts carbon dioxide (CO_2) with aqueous sodium hydroxide (NaOH) to form sodium carbonate (Na_2CO_3) and then, with further CO_2 addition, sodium bicarbonate ($NaHCO_3$). In the context of the Tumas flowsheet, CO_2, available in the Heavy Fuel Oil ("**HFO**") steam boiler flue gas, is contacted in a packed bed column with the UBL converting the contained NaOH into Na_2CO_3 and a moderate amount of sodium bicarbonate prior to entering the leach circuit. The conversion of residual caustic in the UBL into Na_2CO_3 and moderate amounts of $NaHCO_3$ is necessary to prevent caustic from inhibiting the leach chemistry.

The carbonation process has been successfully implemented in at-least two comparable uranium applications, Beaverlodge (decommissioned) and Tummalapalle. The two applications differ slightly in equipment selection making use of flotation cells and batch CSTR respectively as the liquid-gas contacting equipment.

A bench scale carbonation testwork program was undertaken at ALS metallurgy in Perth, completed in January 2022, with the objective of providing a data set of CO_2 utilisation as a function of solution residence time to inform equipment selection and

sizing. The testwork made use of a synthetic UBL feed stock, compressed CO_2 reagent and compressed air.

With the prevailing flue gas volumes expected, even at minimum steam production rates, a minimum CO_2 utilisation of 32% is required within the carbonation area. Given testwork has shown that 70% is conservative, ample CO_2 will be available to drive the required carbonation chemistry.

1.10.13 Further Testwork

Further testwork is planned during the next phase of the project in the following areas:

- Additional beneficiation flowsheet
- further leach feed characterisation
- Alternate flocculant testing
- tailings dewatering
- additional PLS concentration
- Additional vanadium refining
- variability testwork
- other

1.11 Processing

The Tumas processing plant is designed to treat 4.15 Mt/y of carbonate ore containing carnotite ($K_2(UO_2)_2(VO_4)_2.3H_2O$) as the uranium bearing mineral from an open pit mine to produce 3.6 Mlb/y uranium yellow cake (U_3O_8) product and 1.18 Mlb/y vanadium ($VOSO_4$) by-product over a 30-year mine life.

The key drivers in the development of the process route are:

- high process recoveries
- low operating cost
- operability
- known unit processes
- walk-away rehabilitation strategy.

Of these, the last – a walk-away rehabilitation strategy – is perhaps the most significant. The process was developed with the aim of developing a benign tailing, where a “benign tailing” is characterised by its stability, particular with respect to

ground water impact. Deep Yellow has achieved independent, third-party endorsement of the process in this regard from the CSIRO.

The process selected consists of:

- beneficiation to reject 55% of ROM mass to a coarse tailing
- atmospheric leach at 90 °C to extract uranium and vanadium
- counter current decantation ("CCD") to wash leached metals and reagents to pregnant leach solution ("PLS")
- ultrafiltration ("UF") and nanofiltration ("NF") to concentrate the PLS
- a refinery section to first remove vanadium from the circuit as a value by-product and then uranium
- vanadium packaging
- uranium roast to U3O8 and packaging
- reagent recycle
- tailings disposal with tailings decant water recovery and recycle.

1.11.1 Process Design

While the overall process flowsheet developed in the PFS has remained basically unchanged, several trade-off studies have been undertaken to refine the detailed process flow within individual plant modules or to assist with equipment selection. These studies included:

- leach reactor selection (agitated tank), leach conditions (90 °C; 20 g/L Na2CO3) and residence time (36 h)
- CCD wash evaluation - optimum wash ratio and number of CCD stages (eight wash stages at a wash ratio of 0.9 m3/h wash solution per m3/h solution in CCD underflow)
- pre-treatment and UF configuration optimisation, nominated as a conventional clarifier followed by media filtration and crossflow UF using inside-out flow through multi-bore hollow fibre membranes
- NF configuration optimisation resulting in a six-stage NF rougher system and a three-stage NF cleaner system for final permeate cleaning
- CO2 production and adsorption option selection: use of CO2 contained in the steam boiler combustion flue gas in a column contactor to regenerate sodium carbonate reagent from sodium hydroxide
- optimisation of crystalliser technology, feed stream and operating temperature: flash cooling of causticised liquor at 5 °C
- tailings disposal option selection: pumped to Tailings Storage Facility ("**TSF**").

1.11.2 Process Description

The processing plant includes the following unit processes:

- beneficiation
- leaching
- solid liquid separation
- PLS concentration
- vanadium recovery
- uranium recovery
- uranium barren liquor ("UBL") treatment
- tailings disposal
- reagent make-up and distribution
- water and air services.

The process plant schematic process flow diagram is presented in Figure 1.11.1 and the key design criteria are summarised in Table 1.11.1

Figure 1.11.1 – Schematic Process Flow Diagram

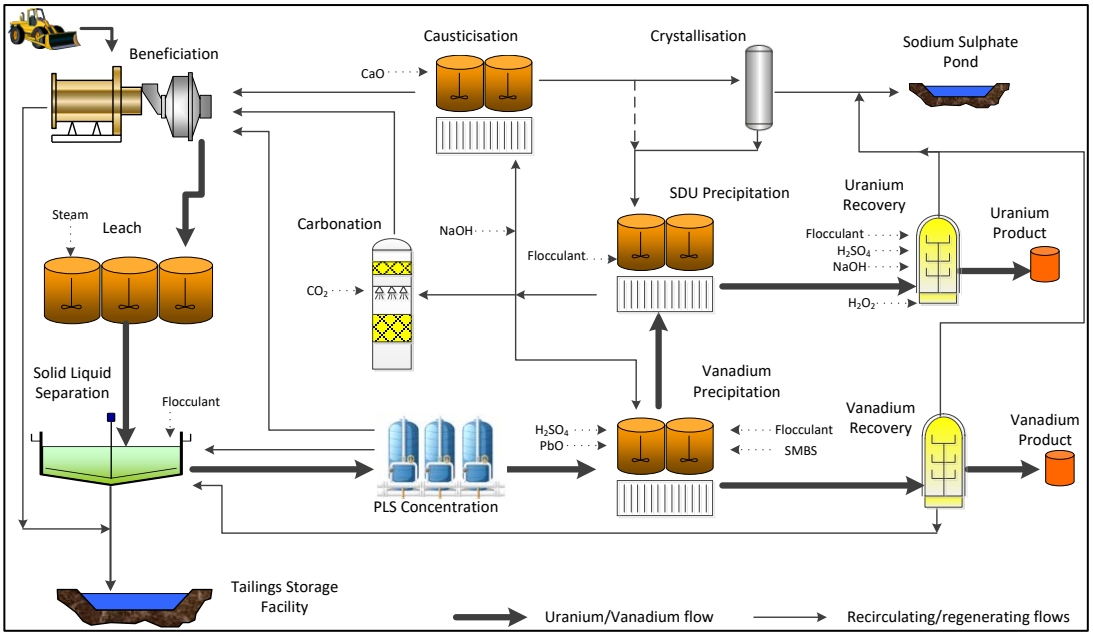


Table 1.11.1 – Key Design Criteria

Production Measure	Unit	Nominal Value
Run of Mine ("**ROM**") ore processed	dry Mt/y	4.15
Uranium in ore (as U_3O_8)	g/t dry basis	350

Production Measure	Unit	Nominal Value
Overall U_3O_8 recovery	%	93.9
Uranium in product (as U_3O_8)	Mlb/y	3.0*
Vanadium in ore (as V_2O_5)	g/t dry basis	113
Overall plant availability	%	90
Beneficiation recovery to leach feed	% w/w ROM ore	45
Beneficiation recovery to leach feed	% U_3O_8	98
Leach residence time	h	36
Leach temperature	°C	90
Leach reagent	g/L Na_2CO_3	20
Solid liquid separation	type	CCD thickeners
Solid liquid separation	stages	8
NF concentrate – SO_4 + CO_3	mol/L	1.3
Vanadium product purity	% w/w dry V_2O_5	40
Uranium product purity	% w/w dry U_3O_8	>90

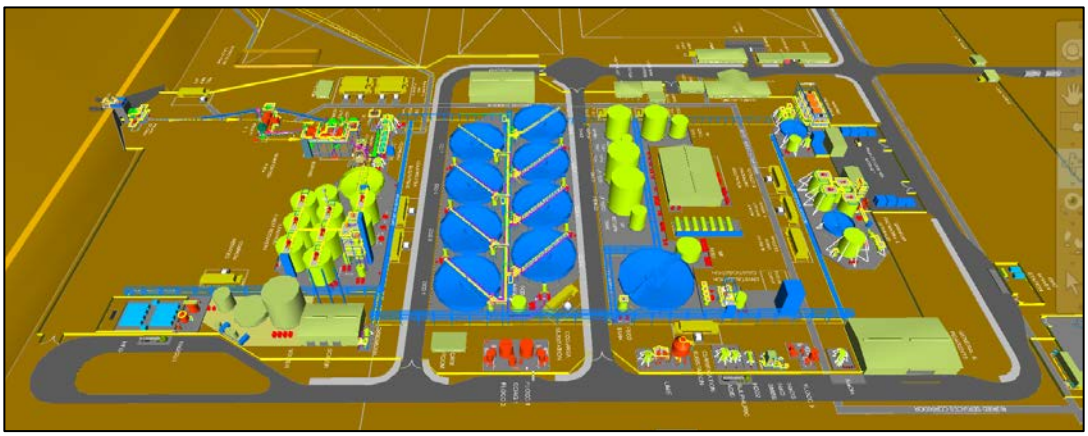
* It is noted that while the front end of the plant is limited to 4.15 Mt/y, the back end of the plant has a maximum capacity of 3.6 Mlb/y, thereby accommodating a 20% increase in ROM feed grade.

1.11.3 Plant Layout

The overall process plant layout illustrated in Figure 1.11.2 is driven primarily by:

- minimising pumping distances between areas, especially for high volume or slurry applications
- optimising the use of gravity flow
- the requirement for a “clean side / dirty side” configuration
- separation of delivery vehicle traffic from the process plant
- separation of final product movement from the process plant and other vehicle traffic.

Figure 1.11.2 – Plant Layout



1.12 Tailings and Water Management

1.12.1 Tailings Characterisation

Deep Yellow's strategy for the process plant design was to produce a tailings stream that would not have a long-term impact on the environment and would enable Deep Yellow to "walk away" from the project once the final rehabilitation processes had been completed.

Tailings characterisation testwork indicates that the tailings generated by the process plant are benign and will not release any contaminants into the environment. As a result, the tailings storage facilities ("**TSF**"s) are not required to be lined and will not require any ongoing management after mine closure.

1.12.2 Tailings Disposal

Being a shallow lenticular orebody, the Tumas deposit lends itself to the implementation of an in-pit tailings disposal methodology, whereby mined-out pits are back-filled with tailings, covered and rehabilitated back to the original landform. This methodology can only be applied to tailings that are benign and do not require storage in lined facilities.

All Tumas tailings will be stored permanently in mined-out areas of the Tumas 3 resource area, which are all within eight kilometres of the process plant.

The Tumas resource contains a number of smaller pits that will be mined out and then serve as individual tailings cells. Larger pits will be divided into sections with embankments constructed from mine waste, aligned where the pit floor is at higher elevations, to reduce the required earthworks. Figure 1.12.1 illustrates how divider embankments are constructed within the pit and then used to manage the progression of tailings deposition.

Figure 1.12.1 – Tailings Deposition Sequencing

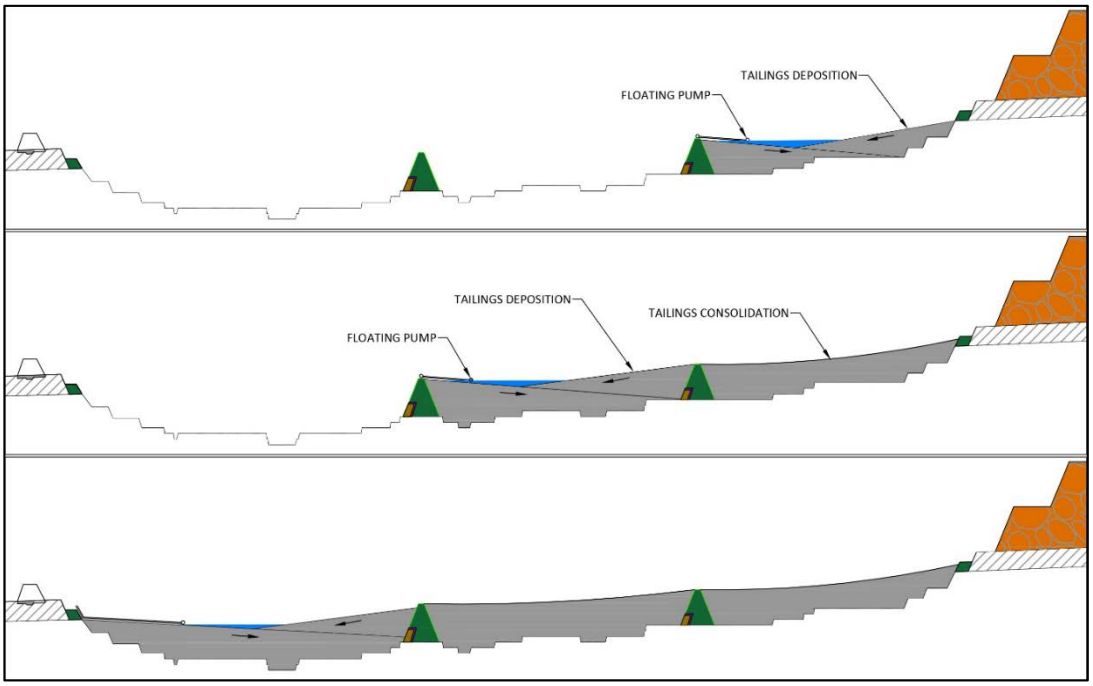
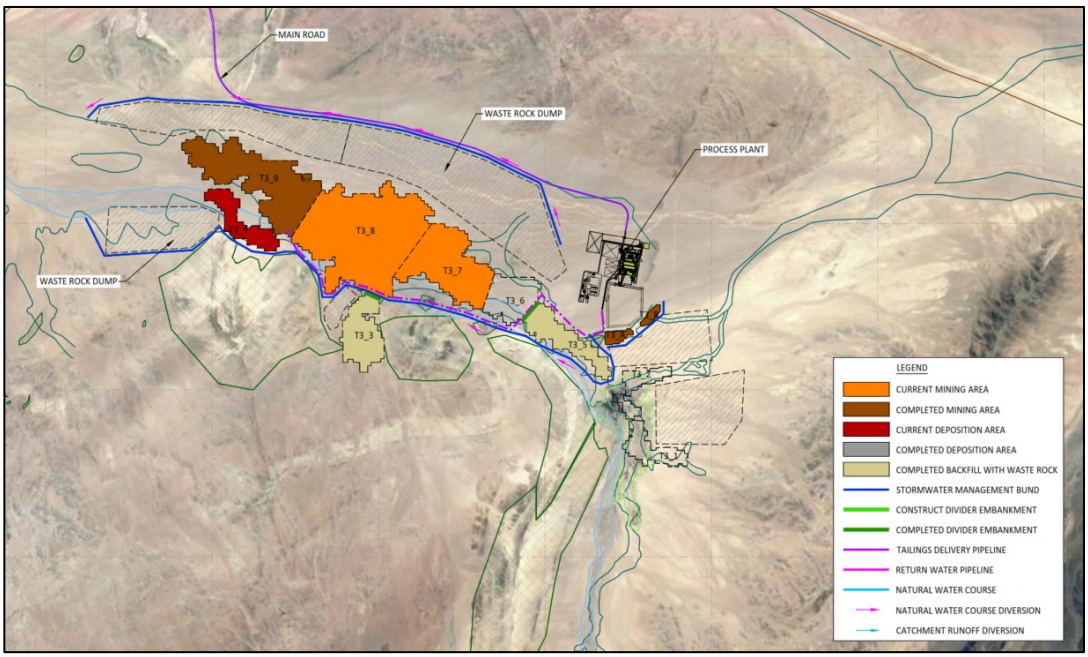


Figure 1.12.2 provides a snapshot of the Project at Year 7, showing the progression of mining, and tailings through Tumas 3.

Figure 1.12.2 – Tailings Deposition Status – Year 7



Water released from the tailings as they consolidate reports to the supernatant pond and is reclaimed for return to the process plant for re-use.

1.12.3 Sodium Sulphate Pond

Sulphate effluent, comprising sodium sulphate as Glauber's salt and vanadium conversion effluent, is pumped from the process plant to a nearby spent mine pit (Tumas 3_B) where the water contained in the effluent is allowed to evaporate. The pit has sufficient capacity to hold the LOM production of sodium sulphate (380,000 m^3) and will be capped with two metres of waste rock once decommissioned.

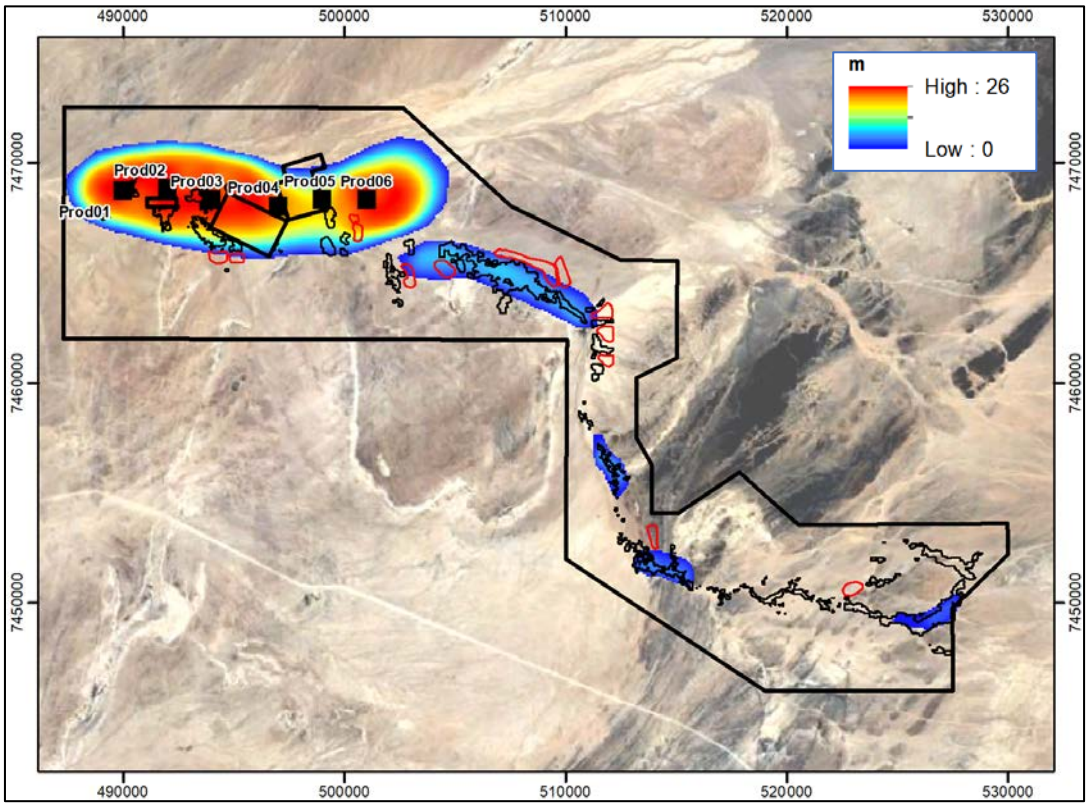
1.12.4 Hydrogeology

The palaeochannel hosting the Tumas deposits comprises sandy conglomerate, calcareous grit, calcareous silt/clay and calcareous conglomerate, and follows a similar flow path to the Tumas and Tubas Rivers. The palaeochannel sediments increase in permeability downstream and host the only aquifer of local significance.

Six production boreholes have been drilled into the western extent of the palaeochannel within the project area and will be suitable for the provision of dust suppression water whilst serving to assist in dewatering active mining areas. The groundwater intersected is saline and unsuitable for use in the process plant without treatment.

A groundwater model has been developed to simulate the impact of mining on the palaeochannel aquifer. Figure 1.12.3 shows that whilst the production bores in the western portion of the project area have a noticeable impact whilst they are operating, the drawdowns areound the various mining areas is transient and recover quickly.

Figure 1.12.3 – Groundwater Level Drawdown Levels in Year 30



1.12.5 Hydrology

The project area is drained mainly by minor drainage lines and washes flowing in an east-west direction to join the Tumas River. The Tumas drainage starts initially as a braided system east of the ridges and then passes through a major bedrock drainage constriction in the centre of the project area, where it becomes narrow and incised. The rivers and other smaller washes and drainage lines in and near to the project area do not have regular surface flow as most surface water flow either seeps into the ground and recharges the groundwater or evaporates.

1.12.6 Surface Water Management

As the project lies in an arid region with no surface water expression, surface water management focusses around the management of surface flows during and after significant storm events.

As each pit is developed, stormwater control bunds and waste rock dumps are constructed to divert runoff around the open pits and back to the original water course to the west of the project area. The bunds are developed progressively in parallel with the mining and backfill schedules.

1.12.7 Water Balance

The site water balance indicates that, excluding bore water, which is all lost to evaporation eventually, 60% of the water losses are retained in tailings and 39% is lost to evaporation. Raw water supplied by pipeline accounts for 82.5% of the make-up water requirements with moisture in the ore, reagent supply water and bore water the remaining 17.5%.

1.13 Infrastructure and Services

Both offsite and onsite infrastructure is required for the Tumas Project. Offsite infrastructure encompasses site access, via a dedicated road, and delivery of water and power utilities. Figure 1.13.1 illustrates the locations (and routing) of the main offsite infrastructure, whilst Figure 1.13.2 shows the onsite infrastructure, which includes the construction camp, processing plant, mining infrastructure area ("**MIA**") and non-process buildings.

Figure 1.13.1 – Offsite Infrastructure Layout

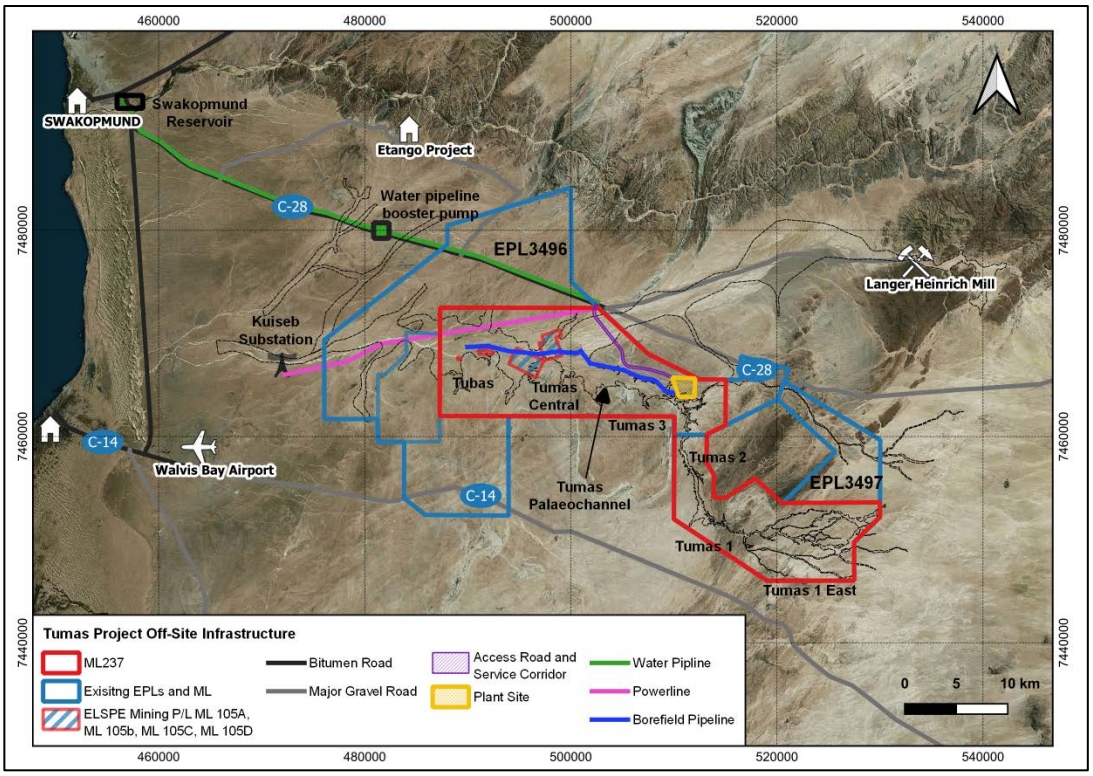
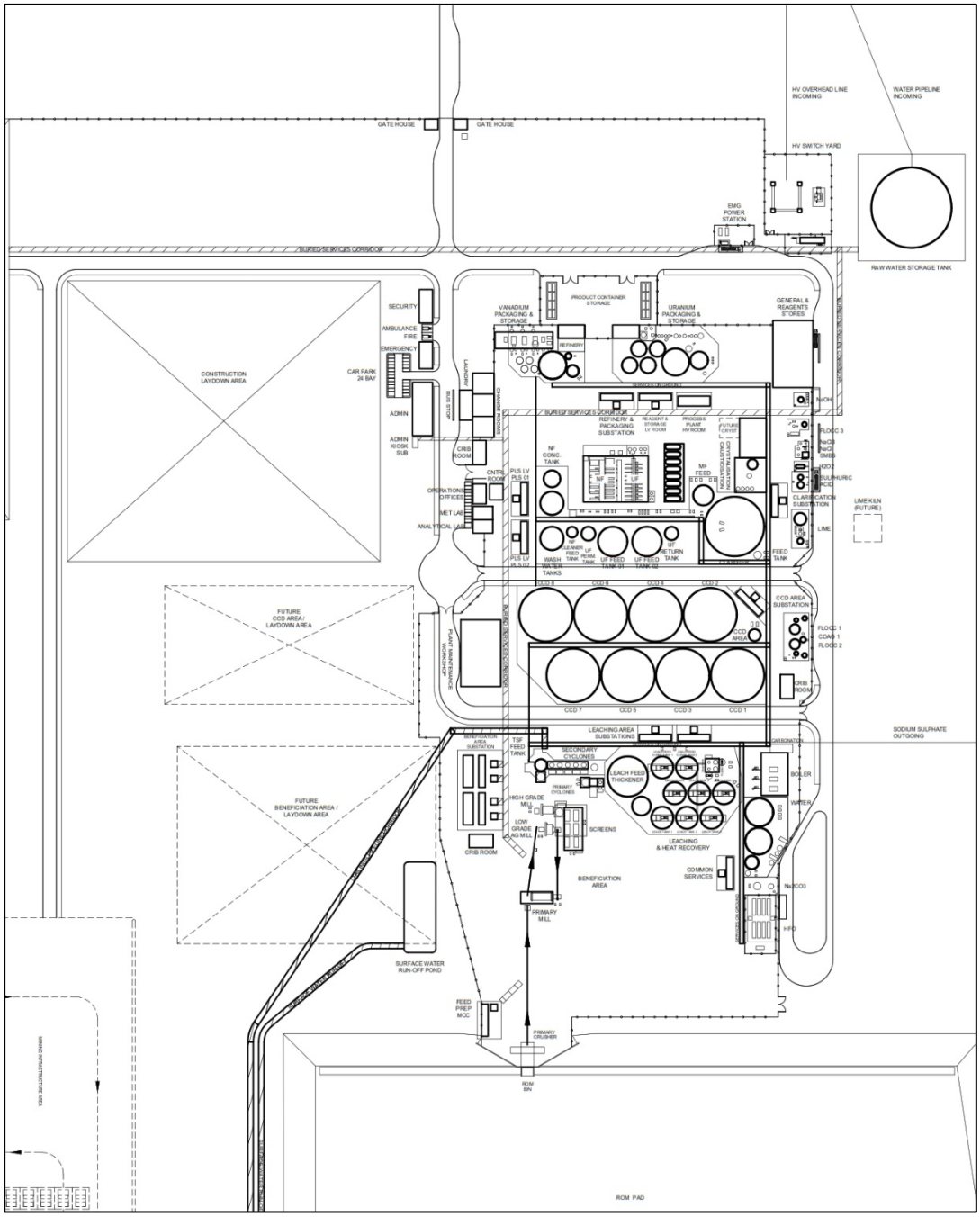


Figure 1.13.2 – On site Infrastructure Layout



1.13.1 Site Access

Access to the Tumas Project is via the C28 national highway, which transverses from Swakopmund to Windhoek. The new 13.5 km site access road connects to the C28

about 60 km from Swakopmund, with the entire route being “all weather” asphalt-surfaced construction.

1.13.2 Power Supply

The Tumas Project is to be connected to the Namibian regional grid through a purpose-built dedicated 45.1 km 132 kV power line from the Kuiseb substation, near Walvis Bay. This line will be constructed by the Project and handed over to the Namibian Power Corporation (Proprietary) Ltd (“**NamPower**”) after commissioning. The power line is supplemented by a 20 MW onsite solar farm installed and operated by a third party under an independent power producer (“**IPP**”) arrangement. The solar farm requires approximately 45 ha and is located immediately to the east of the process plant.

The incoming power is stepped down to 11 kV at the main Tumas substation and is distributed to the two main switchboards in the process plant.

Emergency back-up power is provided through a single 2.5 MVA diesel generator.

1.13.3 Water Supply

Fresh water is supplied from the Namibia Water Corporation (“**NamWater**”)-managed Swakopmund Reservoir via a 2.4 GL/y 65 km pipeline running parallel to the C28 highway.

The aquifer within the paleochannel hosting the uranium mineralisation contains saline water. All water extracted from dewatering bores is used for dust suppression only.

1.13.4 Site Infrastructure

The smaller onsite support buildings (administration, security, mess, clinics, etc.) are constructed from brick and mortar, while the larger buildings (workshop, reagents store) are of structural steel construction. All buildings are custom designed for the Project as there are no pre-existing buildings.

Infrastructure required for the mining fleet is provided by the mining contractor.

1.13.5 Site Accommodation

As no permanent accommodation is permitted within the NNNP, all permanent employees reside in either Walvis Bay, Swakopmund or nearby and will be bussed to site daily. Mining licence conditions permit the establishment of an accommodation camp onsite for construction purposes only. Once construction is

completed, the camp will be decommissioned and removed from site except for several of the entertainment buildings that will be repurposed as training and induction facilities.

1.14 Project Execution

The Project Execution Plan is based on an Engineering, Procurement and Construction Management ("**EPCM**") execution model, including supporting Deep Yellow with the commitment of an early works program prior to full funding being achieved.

This execution model has been adopted to meet the following key project drivers:

- delivery of a safe and capital efficient asset, meeting all environmental and regulatory requirements
- maintain project execution flexibility and minimise post DFS expenditure whilst Deep Yellow obtains optimal funding approval
- commence production ramp-up in Q4 2025.

The project schedule has been developed based on continuation of the integrated Deep Yellow and Ausenco team approach used during the DFS, with each party contributing in areas of their respective strengths. Deep Yellow will provide the overall leadership to make key project decisions; manage community, environmental, permitting, local authorities, resource, mining, geometallurgy, metallurgy and security whilst Ausenco will provide engineering, procurement, management and execution personnel that are experienced in cost effective project delivery in accordance with both Namibian and International design standards.

The implementation strategy assumes an EPCM implementation with horizontal construction packages and a number of smaller EPC packages where either local contractor or specialist technology suppliers have demonstrated cost benefits to the project.

The execution phase has been split into two sub-phases to suit funding requirements, maintain ramp-up of production milestone by Q4 2025 and take advantage of any significant shift in the price of uranium should this occur. The Front End Engineering Design ("**FEED**") program, being the first phase, is configured to minimise capital spend prior to full project funding whilst addressing the projects early critical path activities and to determine the optimal project owner/contractor risk/reward profile prior to full project approval.

This approach provides Deep Yellow with the required time during the FEED period to advance detailed engineering and critical procurement packages such that an optimised procurement and contracting plan can be finalised. During this period the

key long lead procurement items and off-site infrastructure packages can be tendered, evaluated and negotiated ready for immediate award and commencement at project full notice to proceed. Vendor data for critical equipment effecting the layout will be procured prior to FID.

Furthermore, the FEED period will focus on project setup of systems and tools to be used for the broader execution phase as well as the detail design phase. This will include baseline parameters and conventions, migration of key documentation and datasets from the DFS phase.

The FEED program is essential if production ramp-up is to commence by Q4 2025 as it enables the timely award and construction post-FID of:

- the high voltage powerline from Kuiseb to site
- the water pipeline from Swakopmund to site
- the site access road from C28 to site
- the construction camp.

The overall project duration from initial project approval to first yellow cake production is 32 months, including seven months of FEED program (with limited capital commitment).

The critical path for the project consists of:

- ore commissioning
- wet and dry commissioning CCD's area
- construction of the CCD area
- vendor certified data driving critical engineering to provide Issued for Construction ("**IFC**") documentation
- FEED commencement – 3D model standards and preliminary engineering ready for certified data.

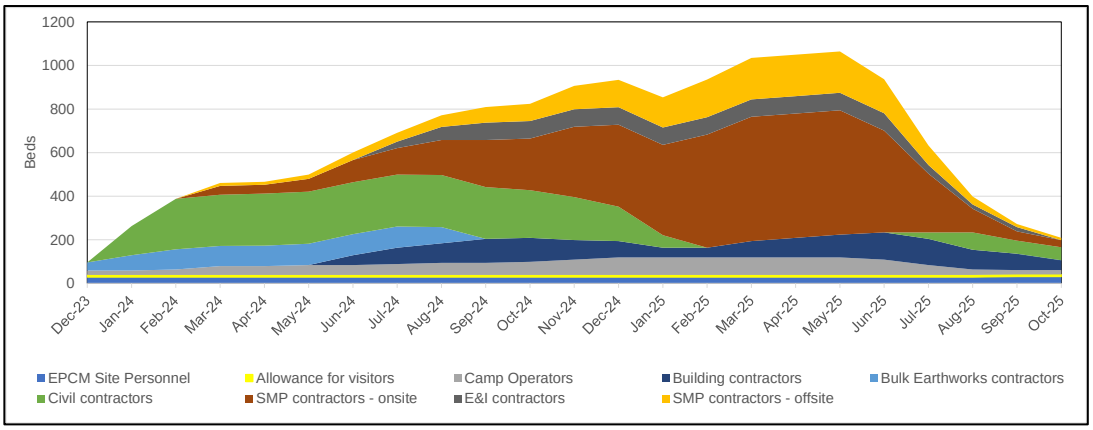
Other activities which require further consideration in the next phase, as they influence multiple areas which are within 30 to 45 days of the critical path, are:

- the volume of concrete requires sequencing of four teams
- completion of the required engineering to finalise IFC documentation to support the SMP contractor fabrication of structural steel, platework and piping spools
- extended electrical equipment delivery periods impacting completion of electrical switchrooms.

Schedule improvement and de-risking opportunities will be reviewed in the next phase by separating the supply and fabrication from the construction contracts.

This schedule will require an average on-site presence of 820 people over the main eight-month period peaking at 890 as shown in Figure 1.14.1.

Figure 1.14.1 – Construction Manning Levels



The bulk of the initial project execution effort will be undertaken in Perth with a gradual transfer of all activities to either the joint Deep Yellow and Ausenco Namibia office or the Site office (or a mixture of both). A summary of the key activities performed from the three project office locations follows:

- Deep Yellow and Ausenco's Perth offices
  - Deep Yellow 's Perth Office will act as the offshore hub for the overall project governance and leadership, manage community, environmental, permitting, local authorities and security.
  - Ausenco's Perth office will act as the offshore hub during the project set-up, engineering design and early international procurement phase. Overall project management will commence in the Perth office and will transition to Swakopmund and then site as the detail design and procurement phases draw to a conclusion. It will also provide ongoing support for the full execution phase.
  - Deep Yellow and Ausenco personnel will be assigned to either office based on best-for-project outcome to coincide with the different project phases to promote a one team culture and optimise interfaces.
- Deep Yellow's office in Swakopmund, Namibia
  - Deep Yellow and Ausenco will establish a local team in a joint Namibian office to manage all local content up to the full transition to the site office.
- Deep Yellow's site office at Tumas Site
  - Deep Yellow and Ausenco will establish a site team utilising the joint office in Swakopmund. This team would then migrate to the site once construction begins. The team will expand as construction activities

intensify up to the point the full project management and construction management team resides on site.

1.15 Capital Costs

The overall capital cost estimate has a base date of the third quarter 2022 (Q3 2022). The estimate has a predicted accuracy range of -10% to +15% for the scope indicated. No escalation is included.

The Tumas Project estimate (Table 1.15.1) covers the development of the open pit mine, installation of a new process plant, a 45 km 132 kV powerline, a 66 km water pipeline, a 13.5 km site access road and support infrastructure such as roads, non-process infrastructure, construction camp, water and fuel services and a solar farm.

The capital cost estimate is based on a project delivered under an EPCM contracting strategy.

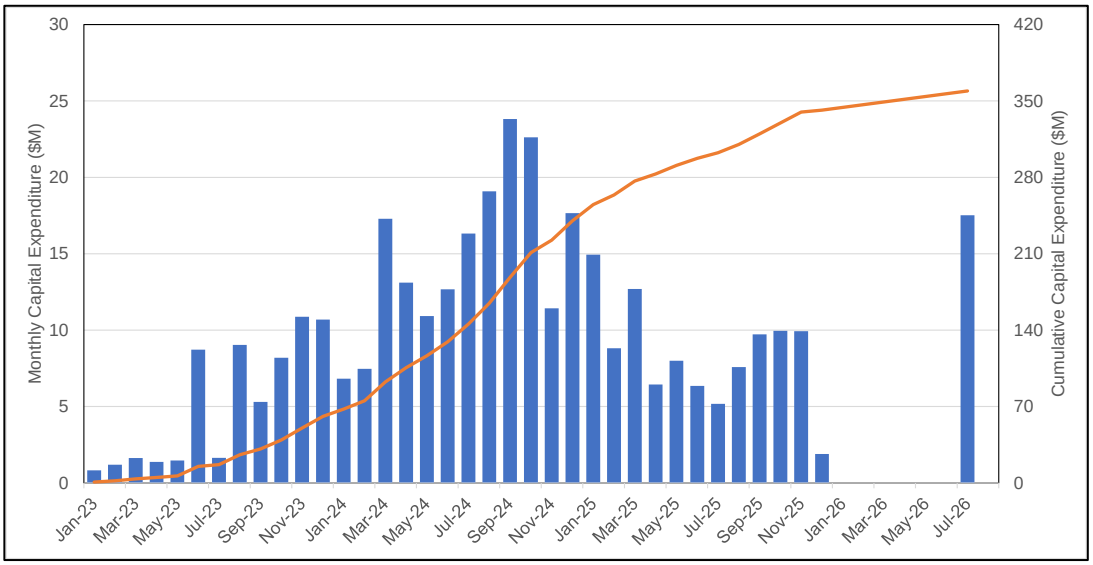
Table 1.15.1 – Total Project Execution Costs Summary

WBS	Description	Cost (US$M)
1000	Mining	12.7
2000	Process plant	223.6
4000	On site infrastructure	20.2
5000	Offsite infrastructure	25.8
6000	Construction indirects	44.1
7000	Project delivery	40.0
8000	Owner's costs	1.0
9000	Provisions	17.7
Grand Total		**385.1**

Based on the results of the Monte Carlo simulation, an Estimate Contingency of 5 % of total direct and indirect costs, excluding mine pre-strip and owner's costs, has been included in the capital cost estimate. This is slightly more conservative than the P_{50} result of 3.9%, which would normally be considered acceptable industry practice.

Figure 1.15.1 illustrates the forecast expenditure of the capital cost estimate over the life of the project based on the scheduling of procurement and installation packages within the project execution schedule.

Figure 1.15.1 – Capital Cost Cash Flow Forecast



A total of $101.6 M is allowed in the financial model for sustaining capital, with an assumption that no sustaining capital will be required for the first or last 6 quarters of operation.

Capitalised pre-production operating costs are developed in the financial model and summarised in Table 1.15.2.

Table 1.15.2 – Capitalised Pre-Production Operating Costs

Cost Area	Cost ($M)
Downstream pre-production capitalised operating costs	-
Mining pre-production capitalised operating costs	48.5
Processing and other pre-production capitalised operating costs	2.7
Royalties and export levies pre-production capitalised operating costs	-
Total	**51.2**

Maximum capital drawdown for the Project is estimated to be $435 M (real).

A provision of $25.0 M has been included for closure costs in the financial model.

1.16 Operating Costs

1.16.1 Overall Operating Costs

The operating cost estimate uses prices obtained in, or escalated to, the fourth quarter of 2022 (Q4 2022). The estimate is considered to have an accuracy of -10 %, +15 % and does not include contingency.

In broad terms, the estimate includes all site-related operating costs associated with the mining and processing of ore to produce uranium yellow cake and vanadium biproduct.

Table 1.16.2 summarises the operating costs for the Tumas operation over the operating LOM (does not include capitalised pre-stripping by the mining fleet), including the cost per tonne of ore processed at the nominated throughput of 4.15 Mt/y. These costs have been developed in the financial model and there may be some variation with cost estimates discussed in this section that were developed in the operating cost model. The reason for this is that the financial model incorporated the variability experienced over the LOM whereas the operating cost model develops costs based on the Project Design Criteria ("**PDC**") values, which are idealised in nature. Where costs are referenced as "LOM" in this section, they refer to the costs developed in the financial model.

Table 1.16.1 – LOM Real Operating Summary

Operating Costs (Real LOM)	LOM	$/t ROM	$/lb U_3O_8
Converter Costs	23.44	0.26	0.37
Transport & Shipping	40.15	0.44	0.63
Mining as incurred during production	921.49	10.17	14.45
Processing	1,167.45	12.89	18.31
Maintenance & Engineering	60.54	0.67	0.95
Site Management and Administration	107.10	1.18	1.68
SHR	16.51	0.18	0.26
Environment	5.13	0.06	0.08
HR	1.88	0.02	0.03
Community Relations	0.86	0.01	0.01
State Royalty	127.40	1.41	2.00
Export Levy	11.83	0.13	0.19
Total Operating Costs as incurred during Production	**2,483.77**	**27.42**	**38.95**
Pre-Production Mining Operating Cost transferred to Inventory	28.57	0.32	0.45
Mining Stockpile Adjustment	-	-	-
Total Operating Costs as Reported under Cash Costs	**2,512.35**	**27.74**	**39.39**

Table 1.16.2 – LOM C1 Operating Summary

C1 Cost	LOM	$/t ROM	$/lb U_3O_8
Revenue from Sales of Payable V_2O_5	(161.67)	(1.79)	(2.54)
Marketing Costs (Product Based)	-	-	-
Transport and Shipping	40.15	0.44	0.63
Convertor Costs	23.44	0.26	0.37
Mining Operating Cost as incurred (incl. Pre-Prod. Operating costs Transferred to Inventory)	950.06	10.49	14.90
Mining Stockpile Adjustment (for process usage)	-	-	-
Processing Operating Cost (including Maintenance and Engineering)	1,227.98	13.56	19.26
Site Management, Administration & Support Services	131.48	1.45	2.06
C1 Cost	**2,211.44**	**24.42**	**34.68**

1.16.2 Mining Costs

Mining costs are derived from tenders received from mining contractors based on an earlier version of the mine plan (though not significantly different to the final schedule.

Table 1.16.3 summarises the mining operating costs for the LOM. The majority of mining costs are considered variable costs as they are directly related to the volume of material to be moved and the distance it is to be moved. Fixed costs include the monthly contract management fee which covers the cost of the contractor supervisory and management team.

Table 1.16.3 – Average Annual Mining Operating Costs Over LOM

Cost Centre	LOM ($M)	$/t ROM	$/lb U_3O_8
Contractor			
Drill and blast	59.79	0.66	0.94
Load and haul	553.52	6.11	8.68
Contractor fixed costs	193.09	2.13	3.03
Primary ROM rehandle	29.00	0.32	0.45
Other	134.58	1.49	2.11
Owners' team	10.09	0.11	0.16
Total	**980.07**	**10.82**	**15.37**

1.16.3 Processing

The design annual processing operating costs are summarised by primary area in Table1.16.4 and illustrated in Figure 1.16.1. Of these costs, labour and maintenance are considered fixed costs and not impacted by variations in throughput or ore. In total, variable costs account for 73.7 % of the total process plant operating costs.

Table1.16.4 – Design Annual Processing Operating Costs Over LOM

Centre	Annual Cost ($M)	$/t ROM	$/lb U_3O_8	% of Total
Company Labour	5.5	1.32	1.83	9
Purchased Water	7.3	1.75	2.42	12
Plant Fuels (HFO)	8.3	1.99	2.70	13
Plant Fuels (Diesel)	0.9	0.22	0.31	1
Other Reagents and Consumables	16.3	3.95	5.51	26
Power	11.2	2.70	3.73	18
Plant Maintenance	5.8	1.40	1.93	9
Maintenance Consumables	1.1	0.27	0.30	2
Mobile Equipment Leasing	0.9	0.22	0.31	1
Laboratory	0.5	0.12	0.17	1
General Expenses	4.5	1.09	1.50	8
Total	**62.3**	**15.05**	**20.76**	**100**

Figure 1.16.1 – Distribution of Processing and General Expenses Operating Costs

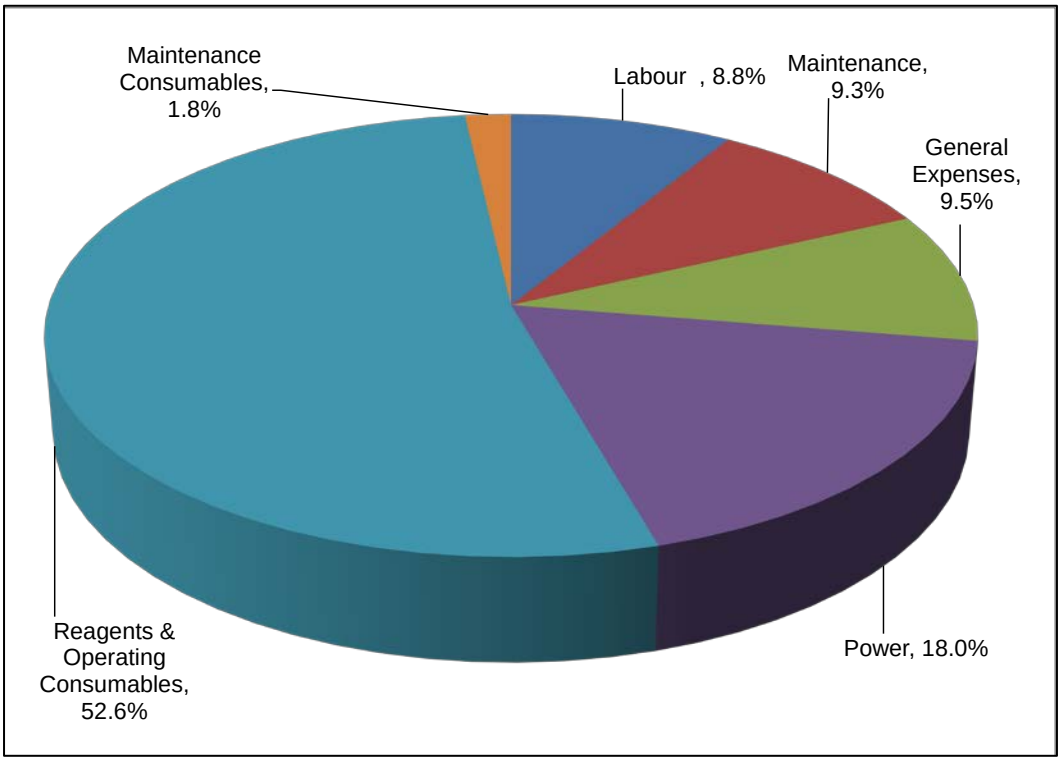


Table1.16.5 presents the cost of the major reagents and consumables (by value) as a percentage of the total reagent and operating consumable costs. HFO accounts for 27 % of the reagent and operating consumable costs. The next largest consumers are sodium carbonate (Na_2CO_3) and water, accounting for 16 % and 22 % respectively. As a result, the processing plant operating costs are most sensitive to consumption and price of Heavy Fuel Oil ("**HFO**") to produce steam, followed by sodium carbonate and purchased water.

Table1.16.5 – Design Annual reagent and Consumable Costs Over LOM

	Annual Cost ($M)	$/t ROM	$/lb U_3O_8	% of Total
Secondary mill ceramic media 5 mm	1.6	0.39	0.53	5
Na_2CO_3	5.1	1.25	1.72	16
Flocculant	2.1	0.51	0.69	6
Coagulant	0.6	0.14	0.20	2
NF membranes	1.1	0.27	0.38	3
CaO	1.8	0.43	0.61	5
Purchased water	7.3	1.75	2.42	22
HFO	8.9	2.14	2.96	27
H_2O_2	0.5	0.12	0.17	1

	Annual Cost ($M)	$/t ROM	$/lb U_3O_8	% of Total
Diesel (including rebated RFA)	1.0	0.23	0.32	3
Other	3.0	0.67	0.91	9
Totals	**32.8**	**7.92**	**10.93**	**100**

1.17 Operating Strategy

The organisational structure for the Tumas Project is based on Deep Yellow managing the process plant and general administration functions while mining is undertaken by a contract miner and the solar farm is on a Build, Own, Operate ("**BOO**") basis.

Table 1.17.1 documents the distribution of the site workforce headcount across the different departments. Shift rosters vary depending on the work area. Most work areas are predominantly day shift only, except for mining, ore processing, some engineering maintenance positions and stores access. A four-panel continuous shift roster is based on an eight-hour shift and applies to those positions that require 24/7 coverage. All work hours and rosters are based on compliance with Namibian labour laws. The mining contractor headcount fluctuates over time, in line with the mine schedule and ore/waste haulage distances.

The Project will source over 95% of the employees needed from the local population, with the majority from the Erongo region.

Table 1.17.1 – Tumas Staffing Distribution

	Staff			Contractors	
	Expatriate	Local	Total	Steady State	Maximum
General Management	1	1	2		
Mining Department	1	11	12	240	360
Process Department	1	97	98		
Engineering Department	1	104	105		
Administration Department	1	47	48	20	28
TOTAL	**5**	**260**	**265**	**260**	**388**

In terms of the operating strategy associated with radiation safety, the Project has been designed to, and will comply with, current best practice and, as a minimum, Namibian legislation. This will be reviewed and updated as and when contemporary best practice changes.

At a practical level, this is reflected in the adoption, from conceptual design through to operation and closure, of structured hygiene measures. The most significant of these measures is the incorporation of a "clean side – dirty side" operating strategy. Under this strategy, any employee who comes into contact with uranium-containing material during their duties will be required to change all clothing and footwear prior

to entering and leaving the "dirty side" (fenced off or demarcated area that may contain uranium).

1.18 Marketing

The global nuclear fuel market is undergoing a fundamental change in response to the 24 February 2022 invasion of Ukraine by Russian military forces. The pervasive threat to not only European energy security but also worldwide concerns in response to the Russian invasion has further elevated commercial nuclear power's position within electricity generating technologies. There is a broad-based recognition that nuclear power is an indispensable component of the Net-Zero Carbon scheme, which has only been enhanced by the changing global geo-political environment.

Recent assessments by highly regarded energy analysis organisations, such as the International Energy Agency ("**IEA**"), have shown that commercial nuclear power is crucial to attain planned Net-Zero Carbon emissions goals. In fact, the IEA has concluded that, without a major contribution from nuclear power, Net-Zero Carbon goals cannot be reached by mid-century.

While the nuclear fuel cycle (natural uranium concentrates (U_3O_8), uranium conversion services, enrichment services and fuel fabrication) was poised for significant improvement more than a decade after the Great Eastern Japan Earthquake (Fukushima), the Russian-Ukraine conflict has hastened the evolution of the nuclear fuel industry.

Western nuclear utility dependency on Russian-sourced nuclear fuel, especially in the European Union (including the United Kingdom and Switzerland) as well as North America and significant parts of the Asia/Pacific region, has led to an increasingly recognised "deglobalisation" pivot as utilities seek out more secure sources of nuclear fuel for their growing fleets of nuclear power reactors.

At the present time, the so-called "Western" nuclear fuel market represents a significant majority (about 70-75%) of global nuclear fuel requirements which is highly likely to transition to non-Russian sourced nuclear fuel between now and the latter years of this decade. This will result in escalating pressure on non-Russian fuel sources across the nuclear fuel cycle, including natural uranium concentrates (Russia currently supplies about 14% of global uranium needs).

While forecasts vary based upon underlying assumptions as to the future role of nuclear power in electricity generation, global uranium requirements are expected to expand significantly between now and 2040-2050. According to the World Nuclear Association ("**WNA**"), the current annual worldwide nuclear reactor industry requires approximately 162.5 Mlbs U_3O_8. Under the Upper Scenario incorporated in the most recent (2021) WNA analysis and forecast ("*Nuclear Fuel Report – Global Scenarios*

for Demand and Supply Availability 2021-2040") that total could reach 257.5 Mlbs by 2030 and then accelerate to as much as 407 Mlbs by 2040, an increase of more than 250%.

Another crucial market factor has been the longstanding uranium procurement practice by utilities of contracting to purchase natural uranium concentrates under multi-year/long-term agreements principally with primary uranium production suppliers. Recent geo-political events have refocused utility fuel procurement on future supply security through diversification of uranium supply sources favouring politically stable regions and specific countries, including Australia, Canada and Namibia. The Republic of Kazakhstan remains the world's largest producer of natural uranium concentrates. Social unrest in January 2022 requiring the involvement of Russian troops and product transportation challenges with railway shipments across Russia to the Port of St. Petersburg (where most of Kazakh-produced natural uranium is exported to Western uranium conversion facilities) have increased utility concerns regarding over-reliance on Kazakhstan for future uranium sourcing.

Post-Fukushima, nuclear utilities de-emphasised long-term uranium contracting in favour of supply arrangements which took advantage of low near-term uranium prices. Uranium commitments increasingly focused on a delivery period extending two to four years forward, rather than long-term purchases covering a forward period of up to ten years or more. One result of that underlying coverage strategy has been greater unfilled uranium requirements. Recent data indicate that over the period 2021-2035, global uranium requirements totalled an estimated 2.7 Blbs while slightly more than half (1.4 Blbs) remained uncommitted (yet to be contracted).

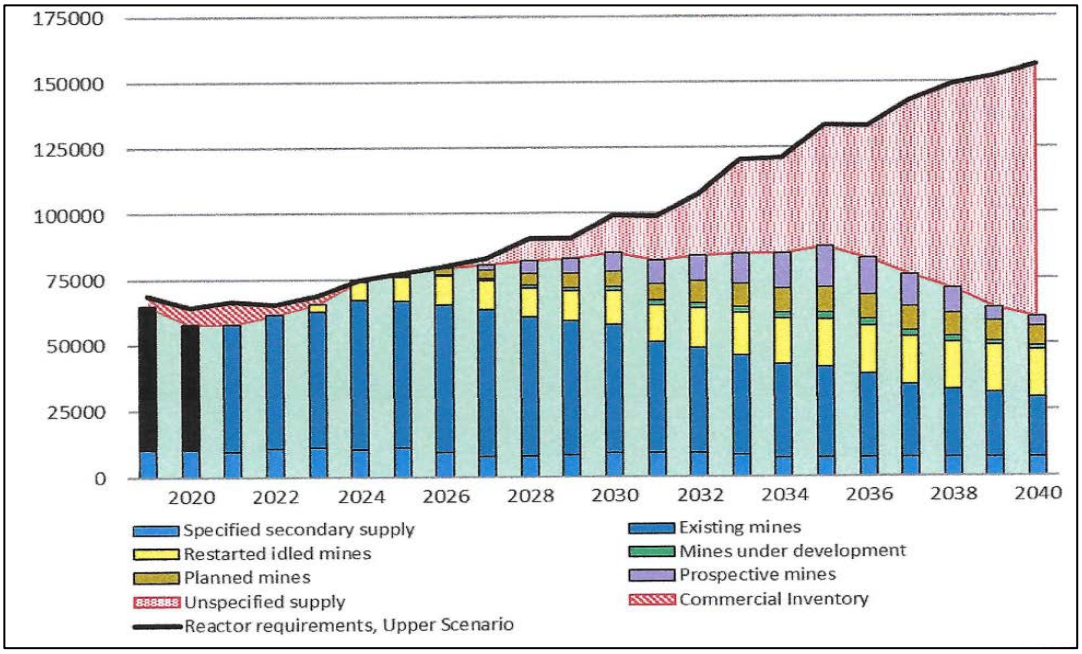
Global natural uranium concentrate production has fallen well short of reactor requirements with secondary sources (e.g., inventoried uranium held by commercial entities as well as governments, nuclear fuel reprocessing, weapons-grade uranium being down-blended to commercial grade) supplying the requisite difference. More recently, persistently depressed uranium prices and the dearth of supportive long-term uranium contracting led to reductions in primary production as well as uranium production facilities being placed in care and maintenance status. Then the COVID-19 pandemic resulted in additional operational contractions placing incremental stress on the uranium production sector. Global primary uranium production peaked at 164.3 Mlbs in 2016 but declined to 124.1 Mlbs by 2020.

While a limited number of production facilities have announced plans to return to operational status, supply chain issues and lack of qualified personnel and management are expected to result in lengthy lead-times while global cost inflation is impacting needed incentivising uranium prices.

The WNA Nuclear Fuel Report (Upper Scenario) indicates that the global natural uranium market could be brought close to balance for a brief period mid-decade

(2025-2026) and then will experience an expanding deficit period when new uranium production facilities are required to support commercial nuclear power programs (Figure 1.18.1). Sustainable uranium prices in the range of $70-80 /lb U_3O_8 are anticipated to be needed to bring forth adequate natural uranium concentrates production.

Figure 1.18.1 – Reference Scenario Supply, tU



(World Nuclear Association – The Nuclear Fuel Report 2021)

1.19 Financial Analysis

The financial model of the Tumas Project seeks to answer key questions surrounding the value of the Project, the potential variability in cashflows if certain key variables change and the quantum of capital required to put the Project into production. The financial model is constructed using real inputs for costs and prices. These real inputs are escalated by a US dollar inflation index (at 1.5%/y to generate nominal cashflows and these nominal cashflows are discounted by a nominal discount rate to derive an NPV. The U_3O_8 price of $65.00 /lb (Trade Tech FAM-2 as a mid-range case and $85/lb as an upside case) is constant in real terms over the life of the model, which means that, in nominal terms, it rises each period with inflation. The treatment of pricing and costs is identical in this respect. Model results are presented in real (un-escalated) terms unless otherwise stated.

The model has been constructed by an independent expert in financial modelling, based on inputs and assumptions provided by Ausenco, Deep Yellow and various other technical consultants associated with the Project.

The model is constructed in quarters with cashflows in US dollars and has the provision for foreign currency sensitivity analysis.

The Project is demonstrated to be financially robust and key financial parameters are detailed in Table 1.19.1. at each of the price points indicated above. The table also provides the PFS model updated reserve data released in October 2021 for reference.

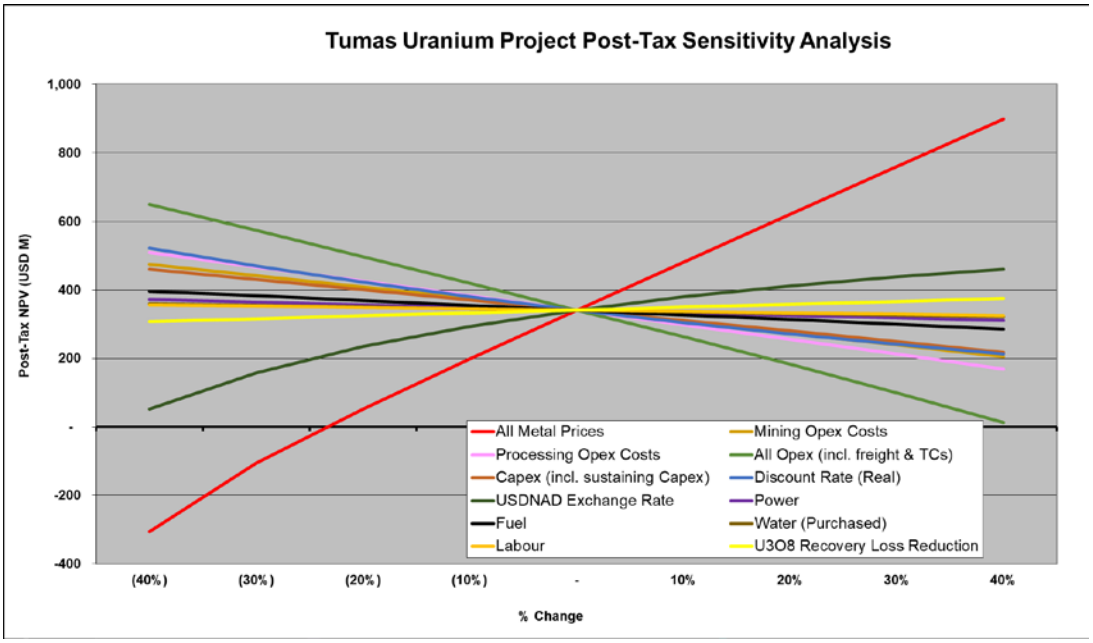
Table 1.19.1 – Key Financial Parameters

Project Financials (Ungeared): Real unless stated	Unit	PFS Ext.	65/lb	FAM-2	85/lb
U_3O_8 Gross Revenue	$M	4,169	4,145	5,039	5,421
V_2O_5 gross revenue	$M	149	162	162	162
Gross revenue: total	$M	4,318	4,307	5,201	5,582
Downstream operating expenses (TC/RCs, freight)	$M	(60)	(64)	(64)	(64)
Site operating expenses	$M	(1,910)	(2,281)	(2,281)	(2,281)
Namibian state royalty & export levy	$M	(140)	(139)	(168)	(181)
Operating margin (EBITDA)	$M	2,208	1,823	2,687	3,057
Initial capital cost	$M	(295)	(385)	(385)	(385)
Capitalised pre-production operating costs	$M	(38)	(51)	(51)	(51)
Sustaining and closure	$M	(83)	(127)	(127)	(127)
Total capital and sustaining capital	$M	(417)	(563)	(563)	(563)
Tax payable	$M	(646)	(473)	(795)	(933)
Undiscounted cashflow after tax	$M	1,141	793	1,333	1,564
C1 cost (U_3O_8 basis with V_2O_5 by-product)	$/lb	28.39	34.68	34.68	34.69
All-in-Sustaining-Cost (U_3O_8 basis with V_2O_5 by-product)	$/lb	31.76	38.72	39.18	39.38
Project NPV (post tax)	$M	410	341	614	754
Project IRR (post tax)	%	23.0	19.2	26.4	31.4
Project payback period from production start	Years	3.8	4.1	3.3	2.8
Maximum project drawdown	$M	315	426	425	424
Profitability index	x	2.4	1.8	2.5	2.9
NPV:drawdown ratio	x	1.4	0.8	1.5	1.9

Breakeven U_3O_8 Price	$/lb	42.40	49.21	49.21	49.21

At $65 /lb, the project materially meets (slightly under on IRR) all the Deep Yellow project development criteria. Under the FAM-2 price deck, the project is now superior to the PFS forecasts.

Figure 1.19.1 – Tumas Project Sensitivity Spider Chart



The project is demonstrated to be most sensitive to uranium prices and US:NAD exchange rates. Risk in the Project may consequently be reduced most effectively by securing long-term offtake agreements for uranium production on suitable terms and ensuring that as many service and supply contracts as are possible are designated in US Dollar terms.

1.20 Project Finance

The funding structure to be adopted for the Tumas Project will be one of project financing to minimise risk to the project, maintaining flexibility and preserving shareholder value. Deep Yellow anticipates that a project finance loan implemented in today's market would attract a total borrowing rate of between 8% to 10%, though the final cost will be dependent on whether global inflationary pressures are contained.

The Deep Yellow team responsible for implementing the project finance facility for the Tumas Project are the same team who previously implemented the project financing for the development of the Kayelekera Uranium Project in Malawi and the

Langer Heinrich Uranium Project in Namibia. Both financings involved a number of international banks and, for the financing of the Kayelekera Uranium Project, the involvement of the Export Credit Insurance Corporation of South Africa.

1.21 Risk

Effective risk management is integral to the capital investment cycle, from evaluation of a business development opportunity through feasibility, project execution, operations and, ultimately, closure and rehabilitation. A structured and thorough understanding of the key risks of the investment allows the project team to focus their attention and better allocate resources.

The objective of the risk management process applied during the Tumas Feasibility Study was to identify risks that could prevent the Project from achieving its strategic, business and operational objectives. In the context of a feasibility study, objectives are defined as delivering a safe, economic and executable project.

During the process development process (Chapter 11), all efforts were made to identify and either remove or mitigate potential risks. The walkaway rehabilitation strategy, a key factor in the design process, was developed specifically to mitigate the potential long term environmental impacts of the Project and to facilitate the EIA approval process.

Risk management during this study encompassed the following analysis of risk:

- project risks, consisting of the identification of threats that could materially impact the achievement of the project objectives and the development of the associated management plans
- technical and operational risks, to inform preliminary engineering and to address the safety, environmental and operability of the facilities
- a quantitative risk analysis ('**QRA**"), conducted as part of the capital cost estimate development process, to determine the project cost contingency and the float for the execution schedule.

A hazard identification ("**HAZID**") exercise was also undertaken to identify engineering design issues to be addressed during the detailed design phase of the Project.

Risk management is a dynamic and continuous process that is performed over the full lifecycle of a project, from scoping to execution. Consequently, the data and information presented in this report is a snapshot of the project risk profile as understood in August 2022. As the risk management process is continuous, risks currently remain open and will be addressed in subsequent project phases.

Table 1.21.1 summarises the residual risk ratings for the risks and hazards identified.

Table 1.21.1 – Residual Risk Ratings

Risk Rating	Project Risks	HAZID Risks
Extreme		
High	7	
Medium	31	60
Low	5	20

Seven risks identified during the risk assessment process have a High residual risk ranking as they include the potential for a delay to the project implementation schedule of more than a month or may result in a fatality or serious personnel injury. These are:

- five risks are associated with delays to the project schedule with mitigating actions focussing on the development of the appropriate management plans and an operational readiness plan, ensuring that an experienced engineer is undertaking the EPCM tasks and the owners' team contains extensive uranium operating experience
- one risk, associated with the total budget being exceeded by more than 10% due to poor contractor performance or changing market conditions, is to be mitigated by developing a strong owners' team with appropriate experience and employing an EPCM engineer with a sound reputation and strong experience in project definition
- one risk, associated with external influences (such as uranium price, sovereign risk, legislation changes, pandemic) impacting on project viability, is to be mitigated through project financial sensitivity analysis.

Hazards identified during the HAZID process have a medium to low residual risk ranking and can be appropriately mitigated with actions associated with appropriate training, standard operating procedures and using the right equipment and personal protective equipment ("PPE").

1.22 Future Work Plan

The next phase of the Tumas Project, the EPCM Interim phase, covers the pre-funding approval period from the completion of the Feasibility Study to the scheduled start of the FEED in Q2 2023. It will enable Deep Yellow to take advantage of cost-saving opportunities identified late in the feasibility study. This work will be undertaken by the core design team, ensuring continuity between the feasibility study and FEED. The opportunity will be taken to address questions raised during the feasibility study but not completed in time to be incorporated.

Annexure 2

APPENDIX 1 - MINERAL RESOURCES AND ORE RESERVE ESTIMATES

Table 1: Total Mineral Resources

Deposit	Category	Cut-off (ppm U_3O_8)	Tonnes (M)	U_3O_8 (ppm)	U_3O_8 (t)	U_3O_8 (Mlb)	Resource Categories (Mlb U_3O_8) Measured	Indicated	Inferred
BASEMENT MINERALISATION									
Omahola Project - JORC 2004									
INCA Deposit ♦	Indicated	250	7.0	470	3,300	7.2	-	7.2	-
INCA Deposit ♦	Inferred	250	5.4	520	2,800	6.2	-	-	6.2
Ongolo Deposit #	Measured	250	7.7	395	3,000	6.7	6.7	-	-
Ongolo Deposit #	Indicated	250	9.5	372	3,500	7.8	-	7.8	-
Ongolo Deposit #	Inferred	250	12.4	387	4,800	10.6	-	-	10.6
MS7 Deposit #	Measured	250	4.4	441	2,000	4.3	4.3	-	-
MS7 Deposit #	Indicated	250	1.0	433	400	1	-	1	-
MS7 Deposit #	Inferred	250	1.3	449	600	1.3	-	-	1.3
Omahola Project Sub-Total			**48.7**	**420**	**20,400**	**45.1**	**11.0**	**16.0**	**18.1**
CALCRETE MINERALISATION Tumas 3 Deposit - JORC 2012									
Tumas 3 Deposits ♦	Indicated	100	78.0	320	24,900	54.9	-	54.9	-
	Inferred	100	10.4	219	2,265	5.0		-	5.0
Tumas 3 Deposits Total			**88.3**	**308**	**27,170**	**59.9**			
Tumas 1 & 2 Project – JORC 2012									
Tumas 1 & 2 Deposit ♦	Indicated	100	54.1	203	10,987	24.2	-	24.2	-
Tumas 1 & 2 Deposit ♦	Inferred	100	2.4	206	503	1.1	-	-	1.1
Tumas 1 & 2 Project Total			**56.5**	**203**	**11,499**	**25.3**			
Tumas 1E Project – JORC 2012									
Tumas 1E Deposit ♦	Indicated	100	36.3	245	8,873	19.6		19.6	
Tumas 1E Deposit ♦	Inferred	100	19.4	216	4,189	9.2			9.2
Tumas 1E Deposit Total			**55.7**	**235**	**13,061**	**28.8**			
Sub-Total of Tumas 1, 2 and 3			**200.6**	**258**	**51,736**	**114.1**			
Tubas Red Sand Project - JORC 2012									
Tubas Sand Deposit #	Indicated	100	10.0	187	1,900	4.1	-	4.1	-
Tubas Sand Deposit #	Inferred	100	24.0	163	3,900	8.6	-	-	8.6
Tubas Red Sand Project Total			**34.0**	**170**	**5,800**	**12.7**			
Tubas Calcrete Resource - JORC 2004									
Tubas Calcrete Deposit	Inferred	100	7.4	374	2,800	6.1	-	-	6.1
Tubas Calcrete Total			**7.4**	**374**	**2,800**	**6.1**			
Aussinanis Project - JORC 2004									
Aussinanis Deposit ♦	Indicated	150	5.6	222	1,200	2.7	-	2.7	-
Aussinanis Deposit ♦	Inferred	150	29.0	240	7,000	15.3	-	-	15.3
Aussinanis Project Total			**34.6**	**237**	**8,200**	**18.0**			
Calcrete Projects Sub-Total			**276.6**	**248**	**68,536**	**150.9**	**-**	**105.5**	**45.3**
GRAND TOTAL RESOURCES			**325.3**	**273**	**88,936**	**196.0**	**11.0**	**121.5**	**63.4**

Notes: *Figures have been rounded and totals may reflect small rounding errors.*
XRF chemical analysis unless annotated otherwise.
♦ eU_3O_8 - equivalent uranium grade as determined by downhole gamma logging.
 # Combined XRF Fusion Chemical Assays and eU_3O_8 values.
Where eU_3O_8 values are reported it relates to values attained from radiometrically logging boreholes.
Gamma probes were originally calibrated at Pelindaba, South Africa in 2007. Recent calibrations were carried out at the Langer Heinrich Mine calibration facility in July 2018 and September 2019.
Sensitivity checks are conducted by periodic re-logging of a test hole to confirm operations.
During drilling, probes are checked daily against standard source.

Table 2: *Tumas Project Ore Reserves*

Classification	U_3O_8 Cut-off ppm	Tonnes Mt	U_3O_8 ppm	U_3O_8 Metal Mlb
Proved	150	0.0	0	0.0
Probable	150	88.4	345	67.3
Total	**150**	**88.4**	**345**	**67.3**

Annexure 3

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	• Commentary
Sampling techniques	• *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	• The recent (2018-2021) drilling relies on down hole gamma data from calibrated probes which were converted into equivalent uranium values (eU_3O_8) by experienced DYL personnel and have been confirmed by a competent person (geophysicist). Geochemical assays were used to confirm the conversion results. • Appropriate factors were applied to all downhole gamma counting results to make allowance for drill rod thickness, gamma probe dead times and incorporating all other applicable calibration factors. **Total gamma eU_3O_8** • 33 mm Auslog total gamma probes were used and operated by Company personnel. • RMR's gamma probes were calibrated by a qualified technician at Langer Heinrich Mine in July 2018 (T003, T029, T030, T164 and T165) and in September 2019 (T029, T030, T161, T162, T164 and T165). • During drilling, the probe was checked daily using sensitivity checks against a standard source. • Gamma measurements were taken at 5cm intervals at a logging speed of approximately 2m per minute. • Probing was done immediately after drilling mainly through the drill rods and in some cases in the open holes. Rod factors were established to compensate for reduced gamma counts when logging through the rods. • The gamma measurements were recorded in counts per second (c/s) and were converted to equivalent eU_3O_8 values over 5cm

Criteria	JORC Code explanation	Commentary
		intervals using probe-specific K-factors. These intervals were subsequently composited to 1m intervals. • Disequilibrium studies done in 2008 on 22 samples derived from the nearby Tumas 1 and 2 zones by ANSTO Minerals indicated that the U^{238} decay chains of the wider Tumas deposit, of which Tumas 1E is part, are within an analytical error of ± 12% and considered to be in secular equilibrium. **Chemical assay data** • Geochemical samples were derived from Reverse Circulation (RC) drilling at intervals of 1m. Samples were split at the drill site using a riffle splitter to obtain a 1kg sample from which 120g was pulverized to produce a subset for XRF-analysis. • Prior to 2020, drill samples were dispatched to ALS in Johannesburg, South Africa for uranium and sulphur analysis using pressed powder pellet XRF and Leco Furnace and Infrared Spectroscopy, respectively. 15% of all uranium mineralised intersections were analysed. • For the 2021 drilling program close to 80% of uranium mineralised intersections were analysed by handheld XRF in-house in the RMR laboratory. The instrument was regularly checked by analysing standards. • The samples were taken for confirmatory assay to be compared to the equivalent uranium values derived from down-hole gamma logging. • Previous assay results from the area have confirmed the equivalent uranium grades and are within an acceptable statistical error margin of 10%.
Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• RC infill drilling was used for the Tumas 1E campaign. • All holes were drilled vertically, and intersections measured present true thicknesses.

Criteria	JORC Code explanation	• Commentary
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• Drill chip recoveries were good, generally greater than 90%. • Drill chip recoveries were assessed by weighing 1m drill chip samples at the drill site. Weights were recorded in sample tag books. • Sample loss was minimised by placing the sample bags directly underneath the cyclone. • Drilling air pressures were monitored during the drilling program
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.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	• All drill holes were geologically logged. • The logging was qualitative in nature. A dominant (Lith1) and a subordinate lithology type (Lith2) was determined for every sample representing a 1m interval with assessment of ratio/percentage. • Other parameters routinely logged include colour, colour intensity, weathering, oxidation, alteration, alteration intensity, grain size, hardness, carbonate ($CaCO_3$) content, sample condition (wet, dry) and a total gamma count was derived from a Rad-Eye scintillometer. • In the most recent drilling program, 6,982m were geologically logged, which represents 100% of metres drilled. The full Tumas 1E dataset contains 8,280 logged intervals amounting to 13,312m. • Lithology Codes for palaeochannel lithologies used are: AL=Alluvion, AG=Gravel, AGS=Gravel silty sandy, SAT=Silty sand, SR=Red sand, CA=Calcrete un-differentiated, CAW=Calcrete whitish, CAB=Calcrete brownish, CAF=Calcrete pale red _Fine grained, SS=Sandstone, SC=Conglomerate, SA=Sand, SSF=Sandstone fine_CaCO3 cement, GY=Gypsum, CH=Chert, SSD=Dolomitic sandstone, QCO=Quartzitic conglomerate, CY=Clay, SH=Shale, REW=Reworked bedrock & calcrete. • Lithology Codes for the channel floor or basement lithologies used are: SD=Dolomite, ST=Siltstone, SM=Mudstone, GG=Granite, ALAS=Alaskite, PQM=Micaceous quartzite,

Criteria	JORC Code explanation	• Commentary
		MS=Micaschis, MB=Marble, PSAM=Psammite, MPEL=Metapelite, HQ=Vein quartz, GZ=Pegmatite, PZ=Biotite gneiss, PQ=Quartzite, PG=Gneiss undifferentiated, PR=Magnetite gneiss, PT=Granitised gneiss, OD=Dolerite, HS=Skarn, PA=Amphibolite, BU=Mafic extrusive, MM=Massive magnetite, GD=Granodiorite, BI=Massive biotite, SB=Breccia, BR=Bedrock, PX=Calc-silicate, PK=Calc-silicate gneiss
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• Sample splitters used were a 2-tier riffle splitter mounted on the rig giving an 87.5% (reject) and a 12.5% sample (assay sample) and a portable 2-tier (75%/25%) splitter for any oversize assay samples. All sampling was dry. • The sampling techniques are common industry practice. • Sample sizes are considered appropriate to the grain size of the material being sampled. • Standards were inserted after each 23rd primary sample, followed by a duplicate of the 22nd primary sample. • Blanks were inserted randomly, but commonly following a high-grade primary sample determined by gamma scintillometer. • RMR uses two different standards, (AMIS0087 = alaskite, Goanikontes) and (AMIS0092 = calcrete, Langer Heinrich Uranium Mine). Previously AMIS0087 standards reported within two standards deviation at an average of 207ppm U_3O_8 while the expected value is 205ppm U_3O_8; Previously AMIS0092 standards also performed within the acceptable limits of the two standard deviations at an expected value of 338ppm U_3O_8, against an average derived assay of 339ppm U_3O_8.
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.*	• The analytical method employed was ICP-MS (Lithium Borate Fusion). The technique is industry standard and considered appropriate. • In-house XRF measurements were taken by a Hitachi X-MET8000 Expert Geo instrument.

Criteria	JORC Code explanation	• Commentary
	• *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• AUSLog downhole gamma tools were used as explained under 'Sampling techniques. This is the principal evaluating technique. • 15% of mineralised holes will be sent for analysis to ALS during the most recent infill drilling programme. • In general the quality control standards analysed with the mineralised samples from the previous drill programmes performed well and did not show any bias. • Comparison between the assayed samples from previous drilling programs in th area and equivalent composited gamma data showed an acceptable correlation on a metre-by-metre basis and a good correlation based on population distribution. The comparison confirms that the gamma derived values are appropriate for use in the MRE.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• The geology logs were recorded in the field using tablets and secured Microsoft Excel logging spreadsheets. Logging codes are derived from pre-defined pulldown menus minimizing mis-logging and misspelling. All digital information was downloaded to a server and validated by the geologist at the end of every drill day. • Sample tag books were utilized for sample identification. • The field drill data of those logs and tag books (lithology, sample specifications etc.) is validated by the relevant project geologist before dispatching for import into a geological database. • Twinning of RC holes was not considered due to the nuggetty nature of the mineralisation. • Data was uploaded onto a file server following a strict validation protocol. • Equivalent eU_3O_8 values are calculated from raw gamma files by applying calibration, casing factors where applicable and deconvolution.

Criteria	JORC Code explanation	• Commentary
		• The factors applied to individual logs are stored in a database on a file server. • Equivalent U_3O_8 data is composited from 5cm to 1m intervals. • The ratio of eU_3O_8 versus assayed U_3O_8 for matching composites is used to quantify the statistical error. It was found that they all lie within statistically acceptable margins.
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• The collars were surveyed by an in-house surveyor using a differential GPS. • All drill holes are vertical and shallow; therefore no down-hole surveying was deemed necessary. • The grid system is World Geodetic System (WGS) 1984, Zone 33.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	• The data spacing and distribution is optimised along the Tumas palaeochannel direction. North-South drill line spacing is 50m with 100m hole spacings offset by 50m on alternate drill lines achieving an overall 70m by 70m hole spacing. • The drill pattern is considered sufficient to establish an Indicated Mineral Resources. • The total gamma count data, which is recorded at 5cm intervals, is converted to equivalent uranium value (eU_3O_8) and composited to 1m intervals.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• Uranium mineralisation is strata bound and distributed in a fairly continuous horizontal layer. Holes were drilled vertically and mineralised intercepts therefore represent the true width. • All holes were sampled down-hole from surface. Geochemical samples were collected at 1 m intervals. Total-gamma count data was collected at 5 cm intervals.
Sample security	• *The measures taken to ensure sample security.*	• 1m RC drill chip samples were prepared at the drill site. The assay samples were stored in plastic bags. Sample tags were placed inside the bags. The samples were placed into plastic crates and transported from the drill site to RMR's site premises in Swakopmund by Company personnel. Sample preparation for

Criteria	JORC Code explanation	• Commentary
		dispatch to ALS laboratories in South Africa was done at RMR's own prep-lab facility. • Upon completion of the preparation work the remainder of the drill chip sample bags for each hole was packed back into crates and then stored in designated containers in chronological order, locked up and kept safe at RMR's sample storage yard at Rocky Point located outside Swakopmund.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• Dr J Corbin from GeoViz Consulting Australia undertook a drilling data review. He concluded his audit commenting: "Overall, the data available is of reasonably good quality and easily accessible."

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• The work to which the Exploration Results relate was undertaken on exclusive prospecting grant EPL3496 and EPL3497 • The EPLs were originally granted to Reptile Uranium Namibia (Pty) Ltd (RUN) in June 2006. RUN is a wholly owned subsidiary of Reptile Mineral Resources and Exploration (Pty) Ltd (RMR), the latter being the operator. The EPLs are in good standing. A renewal application was submitted to the Ministry of Mines and Energy within the legislated timeframe. • A Mining Lease application including the Tumas Resources was submitted to the Ministry of Mines and Energy on 21 July 2021. • The EPL is located within the Namib-Naukluft National Park in Namibia. • There are no known impediments to the Project beyond Namibia's standard permitting procedures.

Criteria	JORC Code explanation	Commentary
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Prior to RMR's ownership of these EPLs, some work was conducted by Anglo American Prospecting Services (AAPS), General Mining Corporation and Falconbridge in the 1970s. • Assay results from the historical drilling are incomplete and available on paper logs only. There are no digital records available from this period. Data from this historical information does not form part of the Mineral Resource dataset.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• Tumas mineralisation occurs as secondary carnotite enrichment of variably calcretised palaeochannel and sheet wash sediments and adjacent weathered bedrock. • Uranium mineralisation at Tumas is surficial and strata-bound in Cenozoic sediments, which include from top to bottom scree, sand, gravel, gypcrete, various intercalated calcareous sand and calcrete horizons overlying discordant Damaran age folded sequences of meta-volcanics and meta-sediments. Predominant basement stratigraphy is Nosib-Swakop Group with Chuos Fm being the highest lithostratigraphic level in the project area exposed. East of Tumas 3 is Kuiseb Fm exposed forming the highest lithostratigraphic levels. All sequences are highly metamorphosed and characterized by isoclinal folding in partly over thrusted sheets lying staggered on top of each other. Strike is generally NE-SW to NNE-SSW, mostly steep dipping. Three different folding events are observed. • The majority of the mineralisation in the project area is hosted in calcrete. Locally, the underlying Proterozoic bedrock shows traces of mineralisation in weathered contact zones of more schistose basement types; this however seldomly occurs.
Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* ○ *easting and northing of the drill hole collar* ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* ○ *dip and azimuth of the hole*	• 1,473 RC holes were drilled over 24,942m in the 2021 infill drilling program. • All relevant drilling on Tumas 3 and 1E was carried out between February 2021 and August 2021. • All holes were drilled vertically, and intersections measured present true thicknesses.

Criteria	JORC Code explanation	Commentary
	○ *down hole length and interception depth* ○ *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• 5cm gamma intervals were composited to 1m intervals. • 1m composites of eU_3O_8 were used for the estimate. • No grade truncations were applied.
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	• The mineralisation is sub-horizontal and all drilling vertical, therefore, mineralised intercepts are considered to represent true widths.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• All relevant intercepts were included within the text and appendices of previous releases.
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• Comprehensive reporting, including two previous announcements of Exploration Results of the 2021 program covering the Tumas 1E project area, were practised throughout the drilling program.
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.*	• The wider area of the Tumas palaeochannel was subject to some drilling from the 1970s on by Anglo American Prospecting Services, Falconbridge and General Mining Corporation. • Downhole gamma-gamma density logging for bulk density was derived from recent work at Tumas 1, 2 and 3 and in analogy to

Criteria	JORC Code explanation	Commentary
		Langer Heinrich Uranium Mine mining in the same lithologies and geological settings East and North-East of Tumas Zone 3. • 500 in house bulk density determinations were carried out on core samples from Tumas 1, 2 and 3. Additionally 50 samples were sent to ALS in Johannesburg for verification of the results.
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• The palaeochannel mineralisation continues westwards into Tumas 1 and 2.

Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* • *Data validation procedures used.*	A set of SOPs (Standard Operating Procedures) was defined that safeguard data integrity which covers the following aspects: • Capturing of all exploration data; geology and downhole probing; • QA/QC of all drilling, geophysical and laboratory data; • Data storage (database management), security and back-up; • Reporting and statistical analyses used industry standard software packages including Micromine and GS^3.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• During all drilling programs regular site visits were conducted by the Company's Competent Person who signed off on all exploration data. • More recently, the Company's current Competent Person has undertaken regular visits with the most recent visit being in June 2021. • The Competent Person for Mineral Resources has visited the site numerous times with the most recent being in 2017.
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.*	• Confidence in the geological interpretation and modelling of the sedimentary channel-fill is very high. This type of geology is well known and readily recognised in the RC drill chips. The factors affecting grade distribution are channel morphology and bedrock profile, with bedrock "highs" indicative forming areas of mineralisation traps.

Criteria	JORC Code explanation	Commentary
	• *The factors affecting continuity both of grade and geology.*	
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 infill drilled mineralisation in Tumas 3 and 1E has a total strike length of approximately 20km, 100 to 1,200m wide, 0 to 30m deep. The main mineralised calcrete reaches from a shallow depth below surface of -1 to -2m deep down to -25m
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 computer software and parameters used.* • *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* • *The assumptions made regarding recovery of by-products.* • *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).* • *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* • *Any assumptions behind modelling of selective mining units.* • *Any assumptions about correlation between variables.* • *Description of how the geological interpretation was used to control the resource estimates.* • *Discussion of basis for using or not using grade cutting or capping.* • *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	• The present estimates are based on grade domains controlling the interpolations into block estimates. Block sizes used are 50m East x 50m West x 3m elevation. • Estimation of block values used Multi Indicator Kriging (MIK). Mineralisation surfaces were derived around an 80ppm eU3O8 minimum value. • As the estimate was based on MIK no grade capping was applied. • The MIK estimate was based on a total of 14 indicator bin values representing 10% probability increments up to 70% then 5% increments to 95% then 97% and 99% in order to more reasonably model the high-grade component of the dataset. • Directional variograms based on 14 indicator bins are used in the current estimates. • A maximum search distance of 200m x 200m x 10.4m was used within the estimate. Panel proportions were limited by the modelled basement profile as any basement hosted mineralisation is not considered for processing. • Block validation was done using qualitative drill hole displays over block estimates. The current block estimate throughout correlates well with composited eU3O8 GT (Grade-Thickness) data. • No correction for water was made other than any that may have been applied during the calculation of downhole equivalent uranium values. • A block support correction was applied to the MIK estimate to derive final block proportions and grades. This correction value adjusts the tonnes and grade for each panel based on the likely mining and grade control parameters. The general progression of this process is to increase overall tonnes and reduce overall grades. Final smu sizes

Criteria	JORC Code explanation	Commentary
		were set at 4m x 4m x 3m with a target grade control spacing of 4m x 4m x 1m. • The MIK estimate is considered to be a recoverable Mineral Resource. • There is potential to recover the vanadium that is a component of the mineralisation (from carnotite) however this has not been considered as part of this MRE. • Average drill spacing is a staggered 100m x 50m and the Mineral Resource panels are centred on alternating drill holes.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• An visual assessment of sample material was done during the sampling process and samples were classified as either "dry" or "wet". The current drilling program did intersect water at times. As the majority of grade values applied within the MRE are based on downhole logging whether the sample is wet or dry is not considered material. • Tonnages are estimated dry.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• Composites less than 0.75m were excluded from the estimation process. This only relates to samples at the start or end of drill holes. • The final MRE was reported at a range of cut-off grades starting at 100ppm $U_3O_8$and going up to 900ppm U_3O_8. • Based on previous mining studies a cut-off grade of 100ppm was selected for the reporting of the MRE.
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.*	• Potential mining scenarios will be open cast mining using three-metre high flitches; after stripping of unconsolidated sandy grits and screes (expected to be free-digging). • The MRE has been limited by the application of a basement profile derived from drill hole logging as it is expected that any basement hosted mineralisation would not be recoverable using the expected processing flowsheet. • Block support corrections applied to the MRE follow the expected mining process. • The MRE was assessed for reasonable prospects for eventual economic extraction and the reported estimate reflects the outcome.

Criteria	JORC Code explanation	Commentary
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.*	• More detailed mineralogical characterisation tests were conducted from the lower Tumas areas which presents the Company with a sound understanding of how a calcrete ore from Tumas would respond to beneficiation and further downstream processing. • Currently metallurgical test work is underway in Perth, Australia using drill core drilled in 2019 and 2020. • Also, the nearby Langer Heinrich uranium mine has successfully mined and processed calcrete ore for almost a decade. Although it is under care and maintenance and its calcrete grade is higher; the mineralogical characteristics remain very similar.
Environmen-tal 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.*	• SoftChem, as independent consultant, completed a scoping level Environmental Impact Assessment for the Tumas Project in 2013. • With mining progressing along the channel parameter, waste material will be backfilled into mined-out areas so to provide for ongoing rehabilitation of the mined-out areas progressively throughout the life of the mine. Any remaining waste rock stockpiles will be shaped and contoured to blend into the surrounding environment.
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.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• Bulk density was derived from borehole density logging (gamma-gamma) from drilling at Tumas 1 and 2 in 2014. • Further borehole density logging (gamma-gamma) from recent drilling at Tumas 1, 2 and 3 was carried out in 2020. • In 2020 bulk density determinations were carried out in-house and by ALS in Johannesburg. • At the Langer Heinrich mine bulk density is defined at an SI of 2.40 (after mining geologically equivalent material for 10 years). • Evaluation of all data resulted in an average density of 2.35. • The current estimate is using an SI of 2.35. • Due to differences between the bulk density values derived from the in-house measurement process and that from both the ALS checks and downhole density logging the MRE has been classified as Indicated. It is expected that the Company will carry out additional bulk density

Criteria	JORC Code explanation	Commentary
		determinations in order to provide for a more definitive density value to be applied to the MRE.
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.* • *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* • *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• This MRE reflects an Indicated Mineral Resource. • Semi-variography modelling indicates long range grade continuity of greater than 100m. • Maximum search ranges used were set to maximum of 200m. • A primary horizontal search of 55m (4 sectors and 16 samples) was used to assign a first eU_3O_8 block estimate; 75m (4 sectors and 16 samples) was used for the second search pass and these broadly equate to Indicated Mineral Resources. A third pass search of 100m (4 sectors and 16 samples) was used to allocate Inferred Mineral Resources with a final search pass of 200m (2 sectors and 8 samples). Vertical search components were 3m, 4.1m, 5.2m and 10.4m respectively. • The average mineralised thickness is in the order of 2m to 10m. • The Competent Person is satisfied that the applied methodology is appropriate for reporting an Indicated Mineral Resource and that the resulting block estimates are true reflections of the underlying drilling data.
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• No additional reviews were conducted beyond those carried out by the various Competent Persons over time.
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.*	• The applied geostatistical approach applied to arrive at the current Indicated Mineral Resource is considered sound and is appropriate to the style of mineralisation contained within the deposit. The same estimation methodology has been successfully applied at the nearby Langer Heinrich mine for a period of over 15 years. • The presented block model is considered to be a reasonable representation of the underlying sample data. • It is this Competent Person's opinion that the classification of portions of this Indicated Mineral Resource could be improved to measured status by confirming the validity of the currently available bulk density information.

Criteria	JORC Code explanation	Commentary
	• *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	

Section 4 Estimation and Reporting of Ore Reserves

(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

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 Reserve.* *Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.*	The Mineral Resource estimates for the Tumas 3, Tumas 1&2 and Tumas 1E deposits used as a basis for conversion to the Ore Reserve estimate reported here was compiled by David Princep of Gill Lane Consulting using data supplied by Deep Yellow. The data included drilling and assay data, geological interpretation, density checks and comparisons to independent check estimates. The September 2021 Tumas Mineral Resource is inclusive of the September 2021 Ore Reserves.
Site visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* *If no site visits have been undertaken indicate why this is the case.*	The Competent Person (CP) has not attended a site visit to this location due to prevailing travel restrictions relating to the enduring pandemic. The CP has relied on DYL personnel to relate site specific information. Furthermore, the CP has knowledge of the country having worked there for 5 years and had also previously attended a site visit to the Langer Heinrich site situated very close to the Tumas project and is also analogous in relation to the orebody presentation and style of proposed mining.
Study status	*The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.* *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 Tumas Uranium Project was the subject of a pre-feasibility study (PFS) including the estimation of a Mineral Resource and Ore Reserve for the Tumas open pits and treatment facility. The January 2021 Ore Reserve has included all aspects of the PFS study. Operational costs and modifying factors have been applied in optimisation and design of the Reserve pit. These updated Ore Reserves are based on the same assumptions as those derived within the PFS study with the exception of the resource models for Tumas 3 and Tumas 1E which have been updated as discussed in the preceding sections of this table. DYL has provided written assurance to the

Criteria	JORC Code explanation	Commentary
		CP that there are no material factors differing from those derived within the PFS Study which may influence the updated Ore Reserves estimation.
Cut-off parameters	*The basis of the cut-off grade(s) or quality parameters applied.*	A lower MIK block cut-off grade of 150ppm U_3O_8 has been applied in estimating the Ore Reserve. Due to strategic objectives of target feed grades, this lower cut-off is slightly elevated from the calculated cut-off grade of 121ppm U_3O_8. .
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).* *The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.* *The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc), grade control and pre-production drilling.* *The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).* *The mining dilution factors used.* *The mining recovery factors used.* *Any minimum mining widths used.* *The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.* *The infrastructure requirements of the selected mining methods.*	The Resource model which formed the basis for estimation of the Ore Reserve was used in an open pit optimisation process to produce a range of pit shells using operating costs and other inputs derived from as part of the PFS. The resultant optimal shell was then used as a basis for detailed design. The mining method assumed in the Ore Reserve study is open cut with conventional excavator and truck fleets. The open pits will be developed using single staged designs. Geotechnical recommendations made by independent consultants have been applied in optimisation and incorporated in design, although these have minimal impact on the pit designs due to their very flat and shallow nature. No additional mining dilution and recovery factors have been applied to the MIK estimated resources since they are considered to be a recoverable resource and include the estimation of an information effect. No Inferred Mineral Resources are included in the Ore Reserve estimation and reporting process and are therefore not included in any revenue estimates and are treated as waste in the estimation of Ore Reserves.
Metallurgical factors or assumptions	*The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.* *Whether the metallurgical process is well-tested technology or novel in nature.* *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 metallurgical process proposed for the treatment of the Tumas Ore is similar to that used at the nearby Langer Heinrich Mine which operated from 2007 to 2018 when it was placed into care and maintenance due to depressed uranium prices. The process consists of: 1. beneficiation through scrubbing and classification by size, with barren coarse material rejected to tailing; 2. alkali (carbonate/bicarbonate) leaching at elevated temperature; 3. CCD washing of the leach discharge;

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	Any assumptions or allowances made for deleterious elements. *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.* *For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?*	4. membrane concentration of the pregnant liquor from the CCD circuit; 5. recovery of vanadium as V_2O_5 (red cake) from the membrane retentate liquor; 6. recovery of uranium as UO_3 (yellow cake) from the vanadium recovery section barren liquor; and 7. disposal and permanent storage of process tailings into in-pit tailings storage facilities. The metallurgical process includes some aspects that are novel. In particular: 1. the use of membranes to concentrate the pregnant liquor is a novel application for the uranium extraction industry, but is commercially established in the broader contemporary minerals extraction industry; 2. the method used to recovery vanadium is also novel, but relies on chemistry that is well described in literature; and 3. some aspects of reagent recycling in the metallurgical process are novel to the uranium extraction industry, but commercially established elsewhere. The remaining elements of the metallurgical process are based on well-tested technology. Metallurgical testing has been undertaken on representative samples of the Tumas Ore. Two bulk composite samples were generated using 5 separate primary Reverse Circulation (RC) drilling samples (~30kg) and 13 diamond core samples (whole PQ core, ~540kg). This metallurgical testwork was limited to the beneficiation and leaching aspects of the samples tested only, as the hydrometallurgy is well understood. The only economic mineral present in the Tumas Ore is carnotite, which is a carbonate mineral of uranium and vanadium. Two separate ore types have been identified in the Tumas Ore and no material variation in processing performance has been identified. The same overall metallurgical recovery of 93.8% is appropriate for both ore types.

Criteria	JORC Code explanation	Commentary
		The only potentially deleterious element in the Tumas Ore is vanadium and the metallurgical process has been developed to remove (as a by-product) the vanadium that is co-leached with the uranium.
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.*	An Environmental Impact Assessment (EIA) is being undertaken for Tumas. Tumas is located in Namibia, which has a long and continuous (since the 1970s) history of uranium mining and export. Waste rock has been determined as non-acid generating and will be stored both in-pit and in surface waste rock dumps. A mining licence application has been lodged (MLA 176), the approvals process for which will consider the appropriateness of the storage methods proposed.
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 region in which the Tumas Project is located has: 1. established road (tarmac-covered road within 10km of the proposed treatment plant site) access; 2. established residential towns suitable for the projected needs of the Project within 70km of the Project location; 3. established power (10km from the proposed treatment plant site) and water (~30km from the proposed treatment plant site) infrastructure; 4. an established class 7 port (suitable for the export of uranium concentrates) ~70km from the proposed treatment plant site; 5. an international airport ~60km from the proposed treatment plant site; and 6. an established telephone communication network.
Costs	*The derivation of, or assumptions made, regarding projected capital costs in the study.* *The methodology used to estimate operating costs.* *Allowances made for the content of deleterious elements.* *The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co- products.* *The source of exchange rates used in the study.* *Derivation of transportation charges.*	The estimated capital costs for the development of the Tumas Project have been developed by a Ausenco Services Pty Ltd and have a stated accuracy of ±25%. Plant capital costs were developed using a mixture of supplier quotations (major mechanical equipment) and relevant factoring. The total capital cost, including capital expenditure estimates for mining, process plant, infrastructure, spares, first fills, construction indirects, EPCM, commissioning, owner's costs, capitalised pre-production costs and contingency, is US$320M. Operating costs for the Project have been developed based on a detailed metallurgical balance, supplier published or quoted utility, reagent and consumable costs, local labour market rates and limited factoring. The

Criteria	JORC Code explanation	Commentary
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc. *The allowances made for royalties payable, both Government and private.*	operating cost estimate has a stated accuracy of ±10% and an effective date of December 2020. The uranium price used (US$65/lb U_3O_8 flat) for the financial analysis is based on a report obtained from an independent third-party uranium marketing expert and has been set at 3%. The vanadium price used (US$7/lb V_2O_5) is based on published market rates as used in the PFS. The currency exchange rate assumed (N$:US$ = 16.75) is based on the average published exchange rate for the first 10 months of 2020. Transport charges have been based on local contractor rates in the case of road transport and established shipping and handling charges for uranium concentrate. Converter charges are based on established converter rates and no allowance has been made for product specification penalties. All royalties and export levies payable in Namibia have been included in the cost estimates.
Revenue factors	*The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.* *The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.*	The uranium price used (US$65/lb U_3O_8 flat) for the financial analysis is based on a report obtained from an independent third-party uranium marketing expert. The vanadium price used (US$7/lb V_2O_5) is based on published market rates as used in the PFS The currency exchange rate assumed (N$:US$ = 16.75) is based on the average published exchange rate for the first 10 months of 2020. Transport charges have been based on local contractor rates in the case of road transport and established shipping and handling charges for uranium concentrate. Converter charges are based on established converter rates and no allowance has been made for product specification penalties. All royalties and export levies payable in Namibia have been included in the cost estimates.
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.*	A marketing report obtained from an independent third-party uranium marketing expert that considered current and forecast nuclear electricity production, installed commercial nuclear generating capacity, secondary uranium supplies, primary uranium production, the global uranium market

Criteria	JORC Code explanation	Commentary
	A customer and competitor analysis along with the identification of likely market windows for the product. *Price and volume forecasts and the basis for these forecasts.* *For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.*	balance and price outlook and marketing and logistics was commissioned to provide the basis for uranium price and volume forecasts. The vanadium price used was based on current published prices for red cake as used in the PFS. Vanadium is a bi-product of uranium extraction in the process and has little impact on Project economic outcomes, so a more detailed analysis was not considered to be warranted at this stage.
Economic	*The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.* *NPV ranges and sensitivity to variations in the significant assumptions and inputs.*	The financial model as developed for the PFS for the assessment of the Tumas Project was created by an independent third-party expert. Revenues and costs are captured in the model in real US dollars (in some cases converted from real Namibian dollars at the base case starting exchange rate). Sensitivity analysis is applied to the real US dollar cashflows. The subsequent cashflows are inflated in summary form to perform both tax and working capital calculations. Valuation cashflows are shown as both nominal and real US dollars and the user can decide whether to apply a real or nominal US dollar discount rate to determine value. The model carries inflation indices for both US dollars and Namibian dollars. The assumed rate of annual inflation is 1.5% for US dollars and 5% for Namibian dollars. A cumulative index is created for inflation in each currency as a time series. The index representing the cumulative inflation difference between US dollar and Namibian dollar inflation is that predicted by 'Purchasing Power Parity' theory. Capital and operating costs as well as revenue streams were developed as described above and suitable allowances were made for the required product inventory build in the marketing process. Sensitivity analysis is conducted in the model on a deterministic basis by changing each variable in isolation through a range of – 40% to +40% in increments of +10%. Inputs are grouped into the following categories for the purposes of sensitivity analysis: • U_3O_8 Price; • V_2O_5 Price; • Mining Costs; • Processing Costs & G&A Costs; • Downstream Costs (excluding Royalties); • Capex and Sustaining Capex; • Discount Rate; and • USD/NAD Exchange Rate.

Criteria	JORC Code explanation	Commentary
		The project was shown to be sensitive to uranium price, with a 10% increase in price lifting the $NPV_{8.6}$ from US$204M to US$278M (36%). It was moderately sensitive to N$:US$ exchange rate with a 10% increase lifting the $NPV_{8.6}$ from US$204M to US$226M (11%) and total operating cost (including freight and TC's with a 10% increase dropping the $NPV_{8.6}$ from US$204M to US$167M (18%), but relatively insensitive to other factors that were analysed including individual operating cost elements.
Social	*The status of agreements with key stakeholders and matters leading to social licence to operate.*	As part of the EIA that is underway, initial meetings with all stakeholder groups have been undertaken and further meetings will be undertaken as this process continues.
Other	*To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:* *Any identified material naturally occurring risks.* *The status of material legal agreements and marketing arrangements.* *The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the 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.*	The production of uranium concentrate involves risk specific to that commodity. These risks are being and will be actively managed. To date, no marketing arrangements have been established for the proposed production. All mineral permits associated with the Ore Reserves Estimate are in good standing and the company is currently in the process of completing an EIA in order to obtain an Environmental Clearance Certificate (ECC) for the proposed development. An application for a Namibian Mining Licence (ML) was lodged in July 2021. There is a reasonable expectation that the ECC and ML will be issued well within the timeframe required for the proposed mining development. Other than the satisfactory completing of a future feasibility study, securing suitable financial backing for capital, the ECC and ML, there are no other known unresolved matters that are dependent on a third party that may materially impact the future exploitation of the reserve.
Classification	*The basis for the classification of the Ore Reserves into varying confidence categories.* *Whether the result appropriately reflects the Competent Person's view of the deposit.* *The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).*	The classification of the Tumas Ore Reserve has been carried out in accordance with the recommendations of the JORC code 2012. It is based on the density of the drilling, estimation methodology, the orebody experience and the mining method to be employed. Results of optimisation and design reasonably reflect the views held by the Competent Person of the deposit. All Probable Ore Reserves have been derived from Indicated Resources.

Criteria	JORC Code explanation	Commentary
Audits or reviews	*The results of any audits or reviews of Ore Reserve estimates.*	No external audits or reviews of the Ore Reserve estimate have been undertaken.
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 statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* *Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.* *It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	Whilst appreciating that reported Ore Reserves are an estimation only and subject to numerous variables common in mining operations, it is the opinion of the Competent Person that there is a reasonable expectation of achieving the reported Ore Reserves commensurate with the classification.