Updated Reward Gold Project PFS demonstrates even stronger economics and builds a robust base for future growth.

ASX Announcement 26th FEBRUARY 2024

High Grade Reward Gold Mine PFS update delivers outstanding results including 18% increase in NPV, 43% increase in IRR, 15% increase in free cash flow, and a decrease in pre-production CAPEX by 40% and payback period by 6 months[1]

PFS HIGHLIGHTS:

Project Life 2 years of minerals processing activities	**Gold Production** 49,890 ounces	**Gross Revenue** $150 million
Capital Expenditure $17 million Pre-production	**AISC** $1,833 per ounce	**Total Employment** 70 Full time employees
Free Cashflow $41 million pre tax	**NPV at 7%** $33.3 million pre tax	**IRR** 110% pre tax

All dollars are Australian Dollars ($) unless stated otherwise.

Key Parameters

- Life of mine pre-tax cash of $41 million at $3,000/oz gold price.
- 6-month payback[1]
- Average monthly gold production of 2,169 oz over 23 months with 92% gold recovery.
- 26,000 oz of gold produced per year on an annualised basis.
- Mine design based on mechanised mining methods. Long hole open stoping with remotely operated loaders was selected as the primary stoping method.
- Planned processing of 181kt of material at a head grade of 9.3 g/t for 49,890 ounces of gold recovered.
- $17m of capital required prior to production. Savings achieved in purchase of Morning Star Plant and through deferment of discretionary expenditures where possible.
- Owner operator with a focus on grade not tonnes.
- Only 2 operators required to run the plant on any shift.

Maiden Ore Reserve

- Probable Ore Reserve of 130kt at 9.7 g/t Au, containing 40,900 ounces of gold.
- Reserve represents 75% of LOM metal production.

Mineral Resource

- Production schedules and financial estimates are based on Indicated Mineral Resources (~75% of Au) and Inferred Mineral Resources (~25% of Au).
- Combined Mineral Resource Estimate (MRE) for the Reward gold deposit at Hill End stands at 419,000 tonnes at 16.72g/t Au for 225,200oz Au *(VTX Announcement 21 June 2023*)

Table 1 – Reward Resource Estimate

Classification	Cut-off	Tonnes	Au (g/t)	Ounces
Indicated	4	141,000	15.54	70,500
Inferred	4	278,000	17.28	154,700
Total	**4**	**419,000**	**16.72**	**225,200**

- The best platforms for further exploration drilling are from the underground mine due to the rugged terrain of the area (see Figure 2). The proposed development provides access to explore down dip and along strike.
- Mine development provides the best opportunity efficiently diamond drill and to add to the resource base (size and confidence category) and potentially extend life of mine. (refer Table 3)

Mineral Processing

The major changes between the new build PFS plant and the re-engineered acquired plant are listed below:

- Flowsheet changes,
  - ✓ 3 stage crushing instead of 2 stages.
  - ✓ Slightly lower nominal throughput rate
  - ✓ Smaller but multiple Gold Centrifuges
  - ✓ Smaller regrind Mill (ML1500 instead of ML3000)
  - ✓ InLine Pressure Jig instead of Spirals
- Water and Power Demand changes
  - ✓ Raw Water demand dropped to 10 m^3/h from 35 m^3/h
  - ✓ Installed power has reduced from 688 kW to 365 kW.
- CAPEX changes
  - ✓ Lower Capex
  - ✓ Refurbishment and re-use of various fixed plant from both the Reward and Morningstar Plants
- OPEX Changes
  - ✓ Power consumption and maintenance requirements have been changed to suit the new flowsheet and throughput.
- Reduced Build Time
- Gold recovery of 92% achieved using gravity separation techniques. No requirement for the use of cyanide or other chemicals.
- Planned plant throughput of 110 ktpa is optimised to match underground production schedule.
- Capital expenditure to procure, refurbish, transport and re-build the processing plant of $3.6 million.

The Reward gold mine is well placed for a simple start –up:

- The new processing plant will be constructed adjacent to the underground mine portal (640 Level) and the Company plans to increase throughput up to 110 ktpa.
- The 640 Level extends into the resource and stripping and refurbishment of this development is required.
- Second egress in place with existing ladder way from 640 Level to surface.
- Some underground fleet and utility services are already owned by Vertex.
- Mining Licence and DA in place for the processing plant, stockpile processing and the underground mining.
- Permitted residue storage has the capacity for the commencement of operations.
- The New plant will be utilising the existing services and infrastructure:
  - ✓ Gold Room
  - ✓ Water systems
  - ✓ Power generation
  - ✓ Offices
  - ✓ Change Rooms
  - ✓ Workshop
  - ✓ Storeroom
  - ✓ Crib Room
  - ✓ Jaw Crusher
  - ✓ Access Roads
  - ✓ Security System

[1] Payback period from commencement of gold production

Vertex Minerals Limited (ASX:VTX) ("Vertex" or the "Company") is pleased to publish the updated Pre-Feasibility Study (PFS) for the high-grade gold operation at the Reward Gold Mine, Hill End NSW.

The Indicated and Inferred Mineral Resource Estimate (MRE) for the Reward gold deposit at Hill End totals 419,000 tonnes at 16.72g/t Au for 225,200oz Au. The Indicated Mineral Resource contains 70,500 ounces of gold while the Inferred Mineral Resource contains 154,700 ounces (VTX ASX Announcement 21 June 2023).

The Board of Directors recognise that the conversion of the Inferred Resource to an Indicated Resource through more drilling would significantly enhance the Project's key financial metrics. The decision to undertake a PFS on the current resource base reflects the significantly improved exploration drilling outcomes that will be achieved through drilling from new development within the underground mine. The Project topography limits drill platforms, and the existing underground workings are all within the mineralised corridor. The workings do not provide sufficient access to the hanging wall to provide good exploration drill locations.

The positive financial outcome from the PFS provides a justification for the development of a mine plan that will significantly enhance the ability for the Company to upgrade the Inferred Mineral Resource by way of improved access. Importantly, this also allows more effective exploration of the mineralised corridor below and on strike of the existing mineral resource. Whilst exploration success is not guaranteed, it is the Board's opinion that this strategy provides the most effective way to increase mine life.

Whilst alternative development options were considered, the pathway outlined in the updated PFS provided a significantly more robust financial outcome and maximised the extraction of the Indicated Mineral Resource. Whilst the PFS included some Inferred Mineral Resource in the mine plan and financial

models, this material was coincidental to the stope and development designs. The mine design targeted the Indicated Mineral Resource.

It is the Board's opinion that development of the mine in parallel with underground exploration drilling will provide the best opportunity to improve the Project's financial outcome.

Executive Chairman, Roger Jackson commented:

"Given the recent acquisition of the Morningstar Gravity Gold plant we *are pleased to have completed an updated Pre-Feasibility Study for the Reward gold mine, which lowers Capex and the payback time and increases cash flow, NPV and IRR. The PFS only represents 2 years of processing, however we believe we can build our high-grade gold inventory whilst mining, to add to this mine life. As previously discussed, in determining the parameters for this study, the decision was taken to base the projected figures on the Indicated resource achieved to-date. The Board remains firmly of the view that this is the most commercially prudent way to develop the mine, given the cost and logistical benefits that can be achieved by carrying out further drilling from underground alongside mining activities. Pleasingly, the numbers outlined in this updated PFS already demonstrate the strong projected economics of the Reward gold mine based on the existing Indicated resource, notwithstanding the clear potential for further significant resource upgrades as mining operations get underway, as we have high grade exploration targets sitting alongside and below the mining envelope. Further, Reward will be one of Australia's most environmental and sustainable gold mines. We expect that the use of cyanide and other chemicals is not required for ore processing. We plan to recycle and re-use our water. We plan to dry stack the sand residue from processed ore and our plant design has very low energy requirements.*

Cautionary Statement

The production target and forecast financial information referred to in this announcement comprise Indicated Mineral Resources (~75%) and Inferred Mineral Resources (~25%). There is a lower level of geological confidence associated with the Inferred Mineral Resource and there is no certainty that further exploration work will result in an upgrade to an Indicated Mineral Resource or that the production target will be achieved.

The study documented in this announcement is considered to have a +/-25% PFS level of accuracy.

The Pre- Feasibility Study referred to in this announcement is based on a JORC Mineral resources Estimate (Refer ASX Release: Vertex Reward Gold Resource Upgrade estimate 21 June 2023) the Ore Reserves and Mineral resource estimate underpinning the PFS have been prepared by Competent Persons in accordance with the 2012 JORC Code.

The Company advises that the Probable Ore Reserve provides 76% of the total milled tonnage and 75% of the total contained gold metal. The production target referred to is based on Mineral Resource estimates which are classified as Indicated (76.6%) and Inferred (23.4%)

The Pre-Feasibility Study is based on the material assumptions outlined below. These include assumptions about the availability of funding. While Vertex considers all of the material assumptions to be based on reasonable grounds, there is no certainty that they will prove to be correct or that the range of outcomes indicated by the Pre-Feasibility Study will be achieved. To achieve the range of outcomes indicated in the Pre-feasibility Study, funding in the order of $22 million will likely be required. Investors should note that there is no certainty that Vertex will be able to raise that amount of funding when needed. It is also possible that such funding may only be available on terms that may be dilutive to or otherwise affect the value of Vertex's existing shares. Given the uncertainties involved, investors should not make any investment decisions based solely on the results of the Pre-Feasibility Study.

HILL END GLOBAL RESOURCE

Table 2: Global Mineral Resource estimate for the Hill End & Hargraves Gold Project

Hill End Project Mineral Resource Estimate				
Deposit	**Classification**	**Tonnes (kt)**	**Grade Au (g/t)**	**Contained Au (koz)**
Reward Gold Mine				
	Indicated	141	15.5	71
	Inferred	278	17.3	155
Sub Total		419	**16.7**	225
Hargraves Project				
	Indicated	1,109	2.7	97
	Inferred	1,210	2.1	80
Sub Total		**2,319**	**2.4**	**178**
Red Hill Project				
	Indicated	413	1.4	19
	Inferred	1,063	1.8	61
Sub Total		**1,476**	**1.7**	**80**
Project Total				
	Indicated	1,663	3.5	187
	Inferred	2,551	3.6	296
Grand Total		**4,214**	3.6	**483**

FOSTERS EXPLORATION TARGET

Table 3: Exploration Target for Fosters (adjacent to Reward Gold Mine)

Deposit	Range	Tonnes (kt)	Au (g/t)	Ounces Au (koz)
Fosters	Lower Range	524	12.5	211
	Upper Range	524	19	320

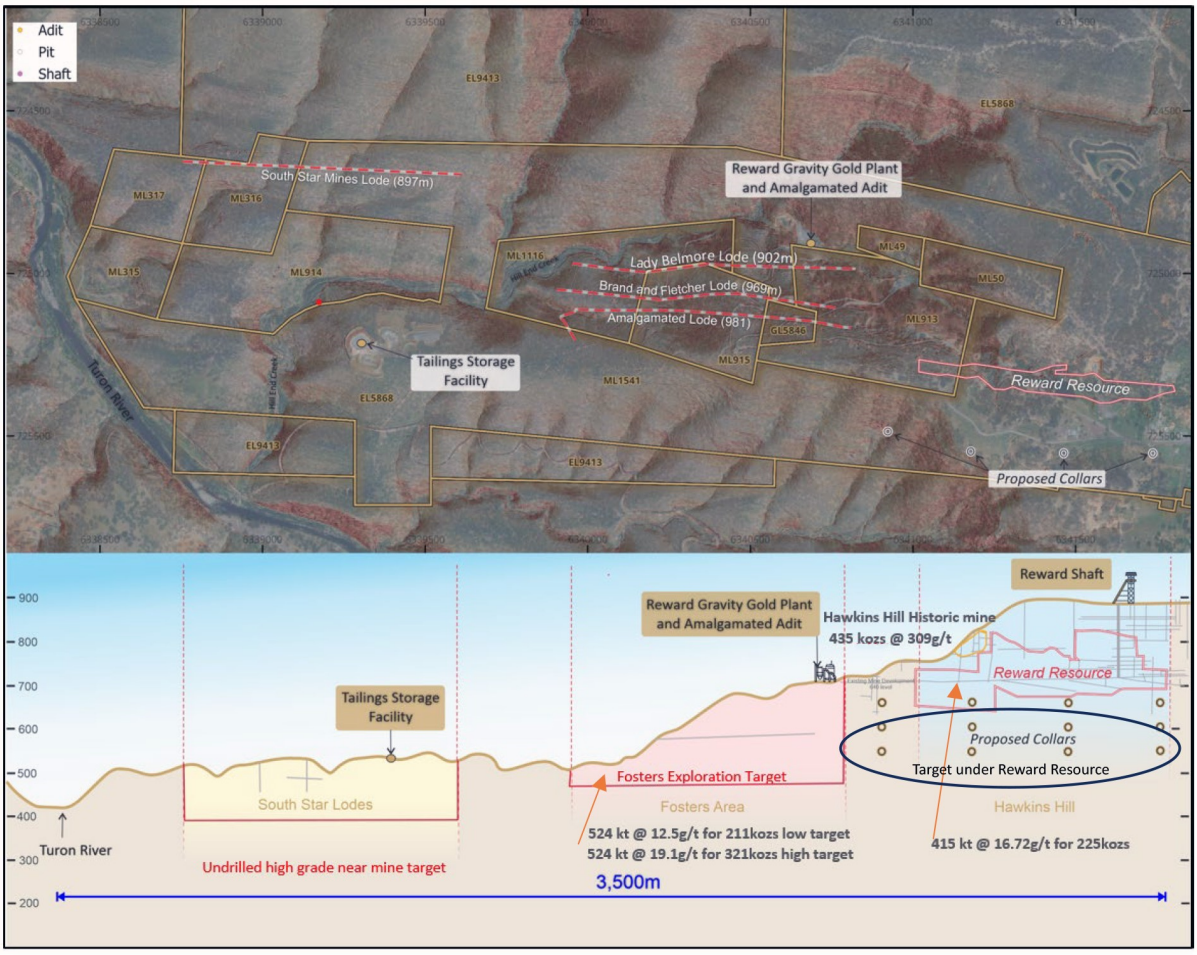
VTX Announcement High Grade Exploration Target Estimate at hill End 29th of August 2023

Cautionary Statement

The Exploration Target is conceptual in nature as there has been insufficient exploration to define a Mineral Resource. It is uncertain if further exploration will result in the determination of a Mineral Resource under the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, the JORC Code" (JORC 2012). The Exploration Target is not being reported as part of any Mineral Resource or Ore Reserve.

Figure 1: On-site workers in Amalgamated Adit (640 Level), main access for the Reward gold mine

Figure 2 – Plan View of tenements and long section showing the key locations. The PFS mining will be within the Reward Resource envelope. Note location of Plant to where the Reward resource sits. Also note the location of the Fosters Exploration target to the plant and infrastructure.



Competent Persons Statements

The information in this report that relates to Exploration Results and Exploration Targets is based on information compiled by Mr. Roger Jackson, a Director and Shareholder of the Company, who is a 25+ year Fellow of the Australasian Institute of Mining and Metallurgy (FAusIMM), Fellow of the Australian Institute of Geoscientists (FAIG) and a Member of Australian Institute of Company Directors. Mr. Jackson has sufficient experience which is relevant to the style of mineralisation and type of deposits under consideration and to the activity which 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". Mr. Jackson consents to the inclusion of the data contained in relevant resource reports used for this announcement as well as the matters, form and context in which the relevant data appears.

The information in this report that relates to Ore Reserves, production targets, assumptions on Modifying Factors and evaluation of other relevant parameters is based, and fairly represents information and supporting documentation that has been compiled under the supervision of Mr. Declan Franzmann B Eng (Mining), a Competent Person who is a Fellow of the Australasian Institute of Mining and Metallurgy (FAusIMM). Mr. Franzmann is a director and security holder of Vertex Minerals Limited. Mr. Franzmann has reviewed and approved the technical content of this announcement. Mr. Franzmann has sufficient experience which is relevant to the style of mineralisation and type of deposits under consideration and to the activity which 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". Mr. Franzmann consents to the inclusion of the data contained in report of the matters based on his information in the form and context in which the relevant data appears.

Forward Looking Statements and Important Notice

This report contains forecasts, projections, and forward-looking information. Although the Company believes that its expectations, estimates and forecast outcomes are based on reasonable assumptions it can give no assurance that these will be achieved. Expectations and estimates and projections and information provided by the Company are not a guarantee of future performance and involve unknown risks and uncertainties, many of which are out of Vertex Minerals' control.

Actual results and developments will almost certainly differ materially from those expressed or implied. Vertex Minerals has not audited or investigated the accuracy or completeness of the information, statements and opinions contained in this announcement. To the maximum extent permitted by applicable laws, Vertex Minerals makes no representation and can give no assurance, guarantee or warranty, express or implied, as to, and takes no responsibility and assumes no liability for the authenticity, validity, accuracy, suitability or completeness of, or any errors in or omission from, any information, statement or opinion contained in this report and without prejudice, to the generality of the foregoing, the achievement or accuracy of any forecasts, projections or other forward looking information contained or referred to in this report.

Investors should make and rely upon their own enquiries before deciding to acquire or deal in the Company's securities.

LOM KEY HIGHLIGHTS

This report details an economic assessment for the Reward Gold Project over a 32-month mine life and is summarised in Table 4.

Table 4 – Key Metrics

Project Life 3 years Processing Life 2 years	Gold Production 49,890 ounces	Gross Revenue $150 million
Capital Expenditure $17 million Pre-production	AISC $1833 per ounce	Total Employment 70 Full time employees
Free Cashflow $41 million Pre tax	NPV at 7% $33.3 million Pre tax	IRR 110% Pre tax

Table 5 – PFS Outcomes and Assumptions

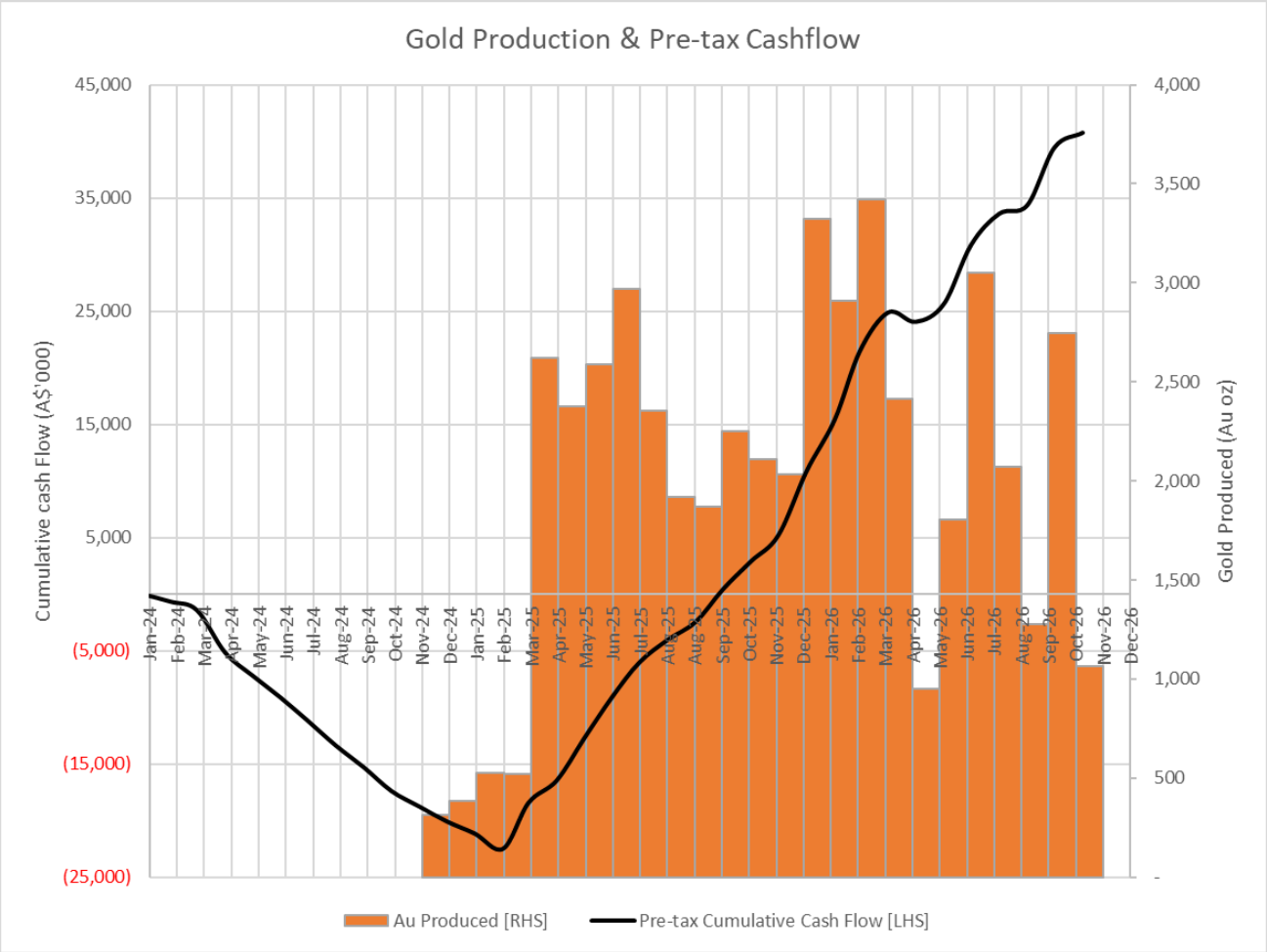
Parameter	Unit	Amount
PHYSICALS		
Mill throughput (design)	ktpa	110
Life of mine[2]	years	3
Ore processed	kt	181
Head grade	Au g/t	9.3
Contained Gold	Au koz	54
Metal recovered for sale	Au koz	50
Metallurgical recovery	%	92%
FINANCIAL		
Revenue	$m	150
Operating Expense	$m	(75)
Royalties	$m	(6)
Sustaining Capital	$m	(10)
AISC[3]	$/oz	1,833
Capital (pre-production)	$m	(17)
AIC[3]	$/oz	2,182
Pre-tax cashflow	**$m**	**41**
NPV @ 7%	**$m**	**33.3**
IRR	**%pa**	**110%**
ASSUMPTIONS		
Au Price	USD/oz	1,950
Exchange rate	AUD:USD	0.65
Au Price	AUD/oz	3,000
Discount rate	%	7%

Corporate tax	%	30%

Notes:

- [2] Life of mine is calculated on commencement of underground development to the cessation of processing activity.
- [3] All in sustaining costs (AISC) includes all onsite costs associated with mining, processing, administration, royalties and sustaining capital. All in costs (AIC) is the AISC with the addition of pre-production capital.

Figure 3 – Production and cashflow profile



The Study team comprised:

- Study Compilation - Vertex
- Geology - Vertex
- Resource Estimation - HGS Australia
- Geotechnical - Ground Control Engineering
- Hydrogeological - Ground Control Engineering
- Mining Engineering - Ground Control Engineering
- Mining Costing - Vertex
- Metallurgy - Gekko Systems
- Process Engineering - Gekko Systems
- Tailings Storage - Vertex
- Power Supply - Vertex

- Environmental - Vertex
- Heritage and Native Title - Vertex
- Social and Community - Vertex
- ESG - Vertex
- Risk, Health -Vertex
- Financial Model Ground Control Engineering – Vertex

KEY PROJECT PARAMETERS

The PFS is based on the following key project parameters:

- Indicated Mineral Resource makes up 75% of LOM gold production with 25% of LOM gold production from Inferred Mineral Resource.
- Probable Ore Reserve estimated at a gold price $3,000/oz.
- 92% gold recovery using gravity separation at the Hill End Gold Plant.
- 10-month mine development timeframe.
- 6-month processing plant upgrade.
- Underground mining to be undertaken by Vertex to focus on quality production.
- Processing plant operation to be undertaken by Vertex.
- Infrastructure to be managed by Vertex.
- Project implementation to be undertaken by Vertex.
- Ready for commencement after securing funding.

PROJECT SETTING

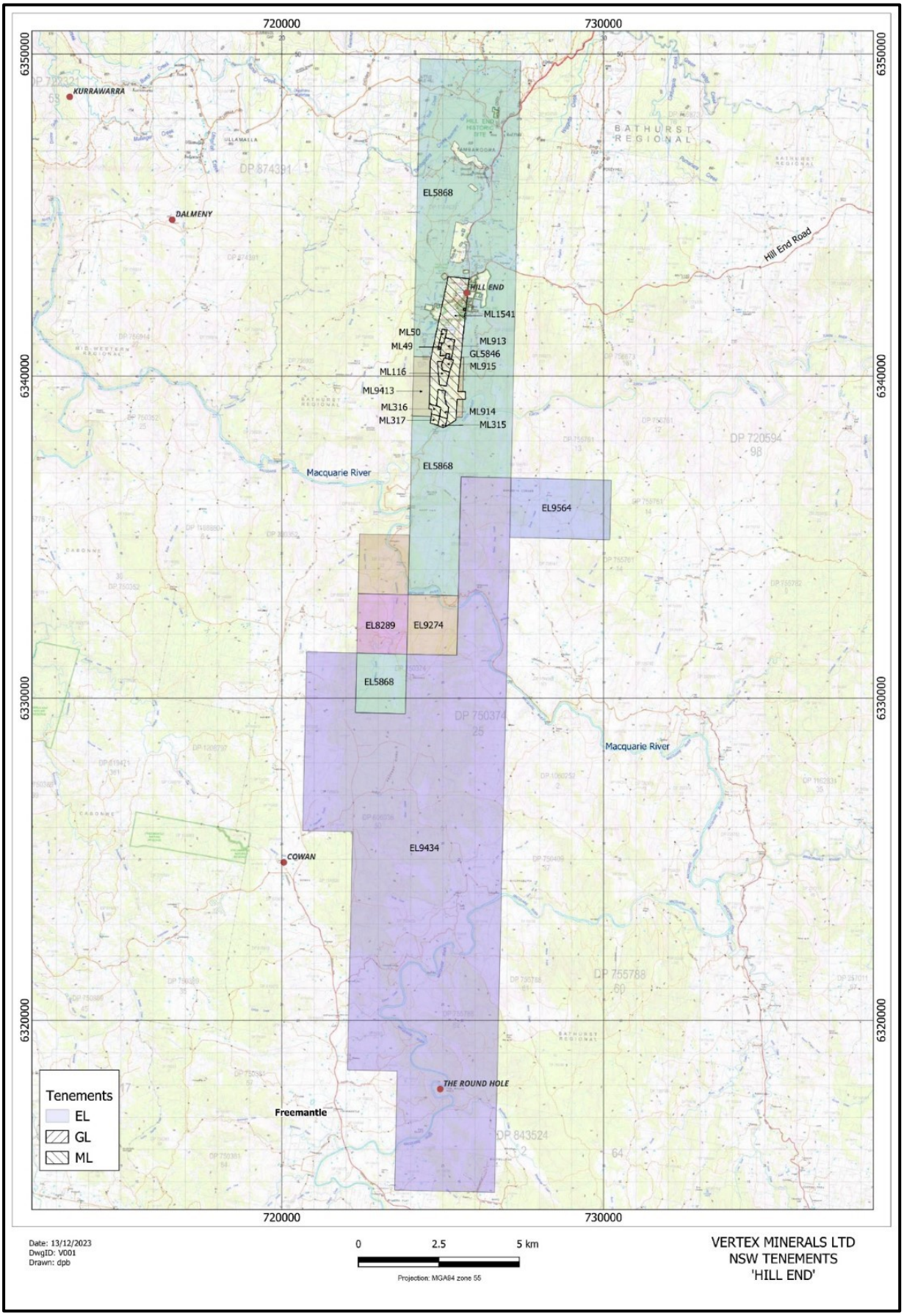
Hill End, population 111 (2021 Census), is a gold mining town located in the Bathurst Regional Council in New South Wales, Australia. The town was originally a part of the Tambaroora area and was known as Bald Hills in the 1850s. In 1860, a village was proclaimed, first as Forbes, then in 1862 it was altered to Hill End. The town's peak population was estimated at 8,000 served by two newspapers, five banks, eight churches, and twenty-eight pubs.

Economic quantities of gold were first discovered at Hill End in 1851 and were famed for their richness and coarse-grained nature. During the early history of the Hill End goldfield, as much as 50t's of gold was produced (Wilkins & Quales 2021). Hill End was made particularly famous following the discovery of the 286kg Beyers-Holtermann Nugget in 1872, the largest non-alluvial gold specimen ever mined.

Mining operations, specifically The Reward Mine, by Hill End Gold Limited ("HEGL") during 2007 to 2010, allowed underground access to unmined, mineralised vein systems for the first time in more than 100 years before high operating costs relative to the value of gold forced the mine to close.

Today, Hill End is a well-preserved gold mining town, regional arts precinct and camping/tourist attraction. The Historic Site can be accessed either via Mudgee from the north (66 km) or Bathurst from the south (71 km).

Figure 4 – Vertex tenements around Hill End



EXISTING PROCESSING PLANT AND INFRASTRUCTURE

The existing gravity gold recovery plant has a nominal capacity of 35,000tpa and includes a ROM bin with grizzly, jaw crusher, screens, vertical shaft impact crusher, 30" Knelson Centrifugal Bowl Concentrator, spirals, ball mill, gold room Wilfley and Wave table, furnace and the associated conveyor belts, hoppers, pumps and pipelines. A tails storage facility was also constructed to contain the residue from the processing of ore from trial mining activities.

The Hawkins Hill and Reward deposits have been developed from the Amalgamated Adit at the 650RL level over a strike length of approximately 800m. A 230m raise bore shaft was developed in 2008 to provide access to ten development levels, provide a second means of egress to the 640 Level and facilitate ventilation for underground operations. No work has been completed underground since May 2010. The new plant will be constructed alongside the below existing infrastructure.

- ✓ Gold Room
- ✓ Water systems
- ✓ Power generation
- ✓ Offices
- ✓ Change Rooms
- ✓ Workshop
- ✓ Storeroom
- ✓ Crib Room
- ✓ Gold Plant
- ✓ Sumps
- ✓ Settling tanks
- ✓ Access Roads
- ✓ Security System

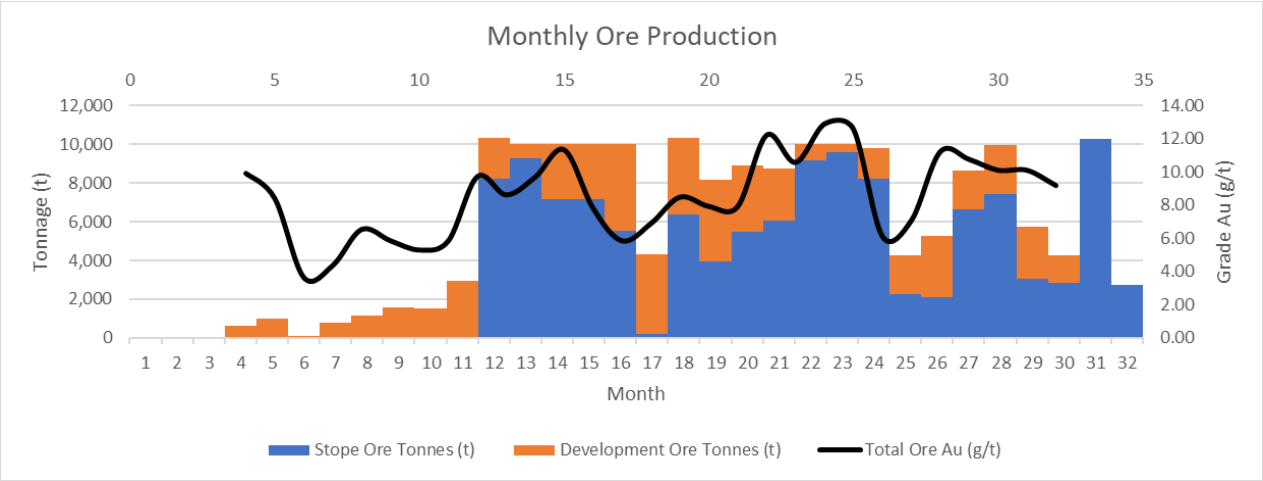
MINING

These key metrics are based on establishing a modern, mechanised mine, utilising long hole open stoping with waste rock as a backfill medium. Capital and operating development consists of level and inclined drives and crosscuts 3.5m wide by 3.5m high.

Commencement of mining activities requires the stripping of existing Amalgamated Adit from around 2.4m wide by 2.4m high to 3.5m x 3.5m to facilitate access for suitably sized loaders and trucks.

Figure 5 illustrates the production profile showing development and stope tonnages. The first stope production occurs 12 months after the commencement of development activities. There is sufficient ore from development to commission the processing plant around Month 10.

Figure 5 – Mine Production Profile



The physical and economic analysis included a Probable Reserve containing 40,900 ounces of gold and additional material, referred to as mining inventory, which contained an additional 13,300 ounces of gold. This mining inventory represented the Inferred Resource contained within the stopes and development drives created from an optimisation targeting the Indicated Resource. The economic analysis included all material summarised in Table 5. The breakdown of production from the mining inventory and the Probable Reserve is shown in Figure 6 and detailed by quarters in **Error! Reference source not found.**.

Figure 6 – Gold mined by resource category.

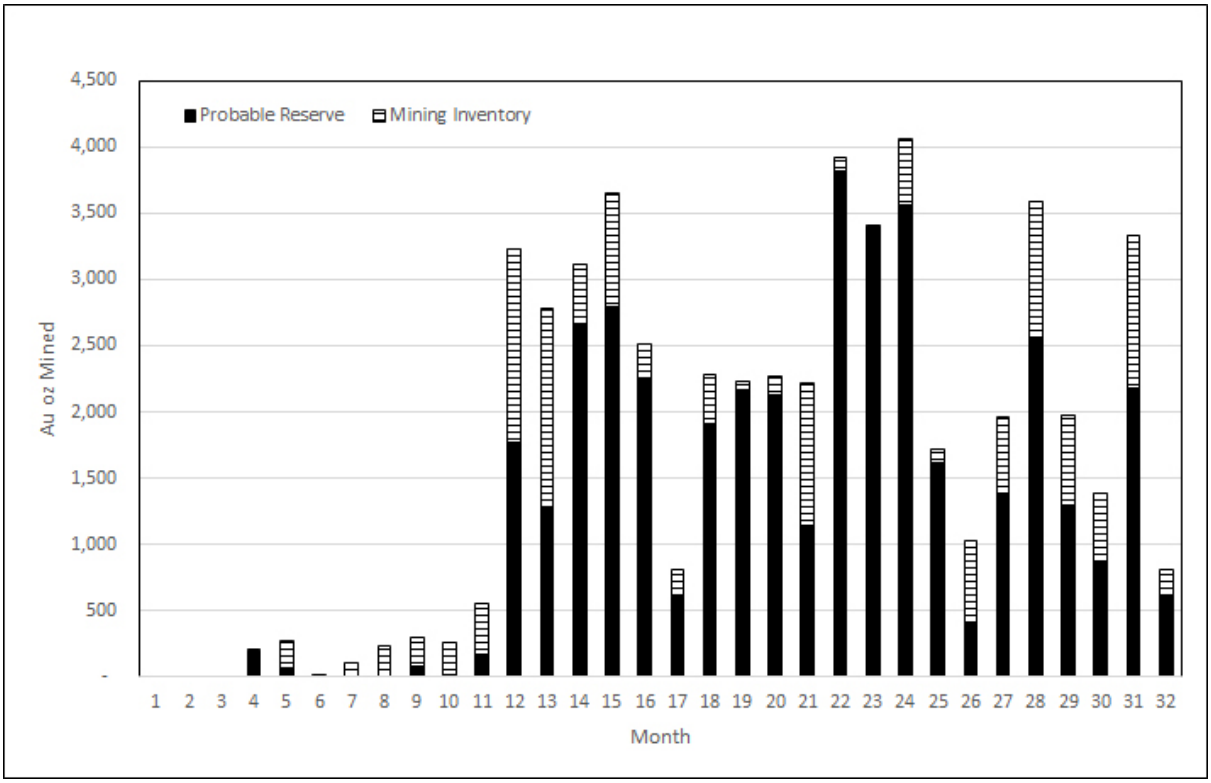


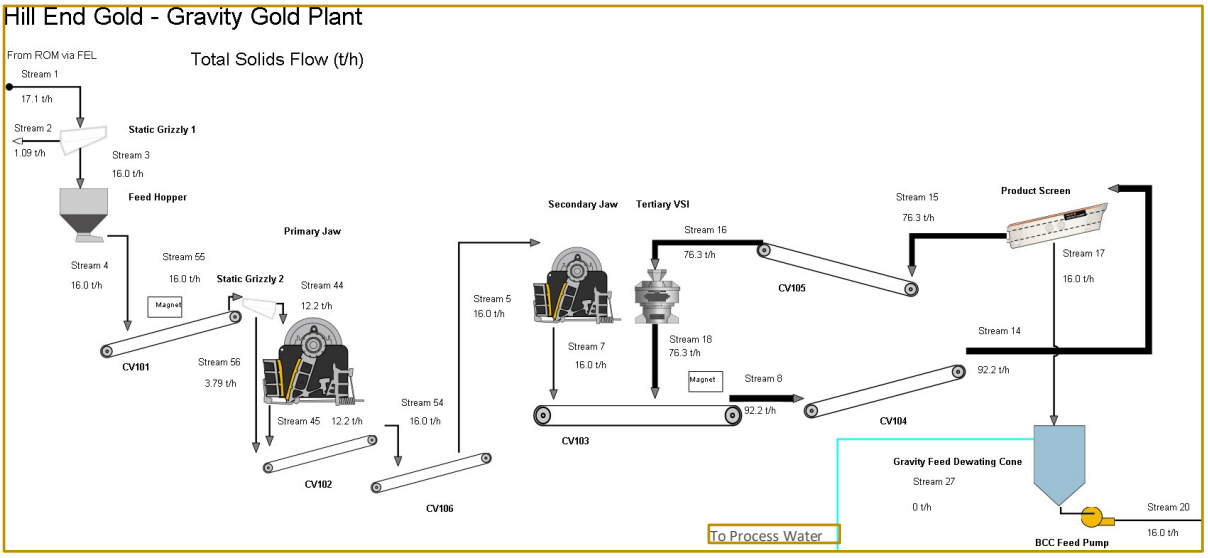
Table 6 – Mining Inventory and Probable Reserve

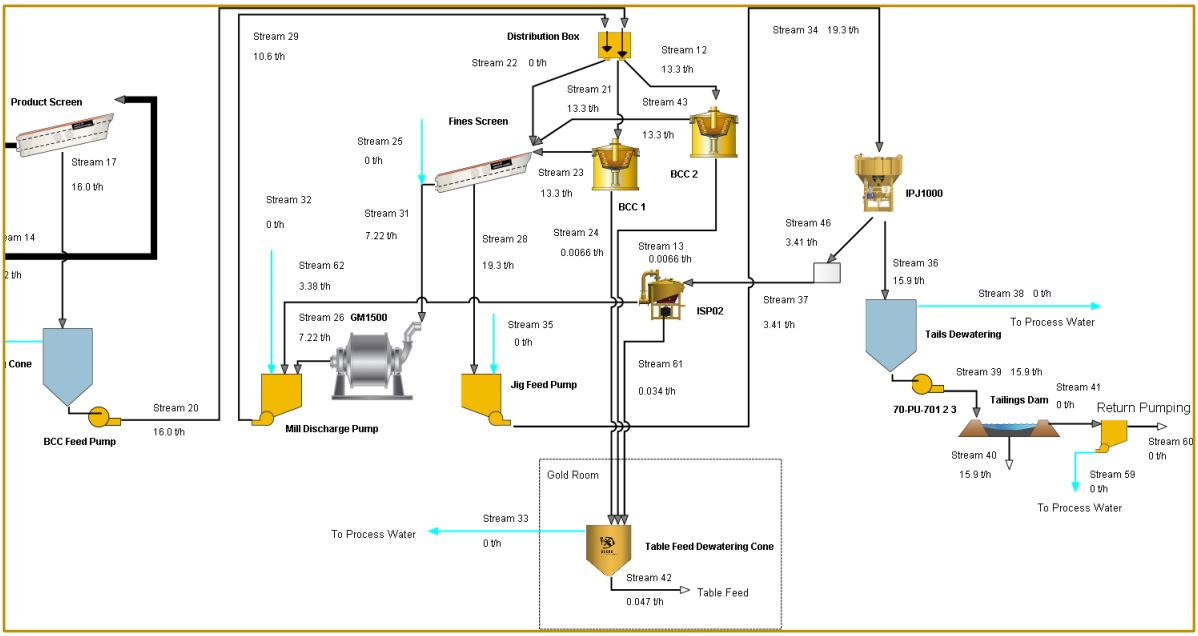
Item	Probable Reserve	Mining Inventory
Material tonnes	130,722	50,753
Gold Grade g/t	9.74	8.14
Contained Gold oz	40,936	13,289

PROCESSING

The preferred processing route for the Project involves crushing and grinding to 600 micron and then separating gold from the ore stream in batch centrifugal concentrators (BCC) and scavenging in an InLine Pressure Jig (IPJ), as illustrated in figure 7. Processing only utilises gravity methods, and no cyanide or other leachate is used. The concentrate from the BCC is passed directly to the gold room, where the BCC concentrate is passed over a Wilfley Table to further clean the concentrate ready for direct smelting.

A feature of the Reward Deposit is excellent recoveries of around 92% at the grind size contemplated in this flow sheet.





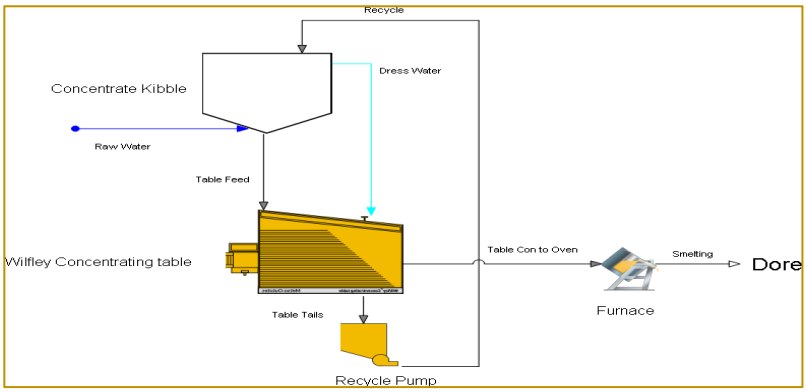


Figure 7 – Processing Flowsheet

The capital cost of the processing plant was estimated to be $3.5 million, with operating costs of $33.52 per tonne processed.

The coarse grind size means that residual material from processing is a fine sand that can be easily dewatered and dry stacked. The cost of tailing management was estimated to be $6.65, bringing total processing costs to $40.17 per tonne of ore processed.

ORE RESERVE

The PFS established the maiden Ore Reserve for the Reward Gold Mine, with the Probable Ore Reserve estimated to be 130,722 tonnes at 9.7g/t Au and containing 40,936 ounces of gold.

The estimated Ore Reserve is derived from Indicated Mineral Resources and dilution material. Dilution material comprises either low grade Indicated Mineral Resources or material with no noticeable grade. No Measured Mineral Resources have been established for this deposit. The classification of resources relies on evaluating geological confidence considering geological and mineralisation continuity.

Table 7 – Probable Ore Reserve Estimate

Classification	Tonnes	Au (g/t)	Contained Au (Oz)
Proved Ore Reserve	-	-	-
Probable Ore Reserve	130,722	9.74	40,936

Note:
Ore reserves are susceptible to economic, geotechnical, permitting, metallurgical, and other factors. Lower production rates can increase costs and cutoff grades, reducing reserves. Geotechnical challenges may elevate cutoff grades, further impacting Ore reserves.

MINERAL RESOURCE

The Minerals Resource Estimate for the Reward Gold Project was completed by HGS Australia (HGS) in June 2023, and summarised in

Table 8.

Table 8 – Mineral Resource Estimate

Classification	Cut-off g/t	Tonnes	Au (g/t)	Ounces
Indicated	4.0	141,000	15.54	70,500
Inferred	4.0	278,000	17.28	154,700
Total	4.0	**419,000**	**16.72**	**225,200**

The mineral resource estimate is based on the following factors and assumptions:

- The data was supplied by Vertex including an access database with all original sample files, previous model and interpretations, historical mine development, surface contours, and reports.
- All past validation work was considered and used in this report.
- Mineralised outlines were interpreted by HGS within the coordinates:

  6341000N to 6341800N,
  725220E to 725400E and
  550RL to 1000RL.

- A new interpretation to minimum 1m width was used in compositing the sample data.
- Sample data was composited over 0.25m intervals for drill gold assays.

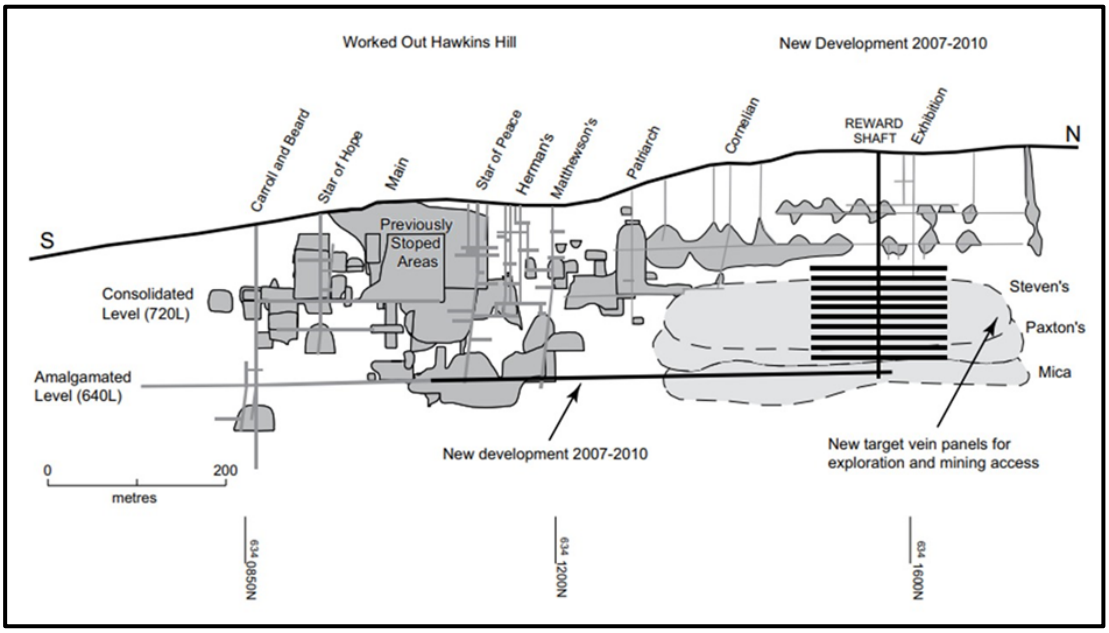
- Underground face assays were incorporated into the database but only used in interpretation continuity.
- A surface topography profile was supplied by Vertex.
- Geological block models were constructed by HGS using Surpac. The model cell sizes are 10m N, 1m East and 5m RL and sub-celled to 2.5m N, 0.25m E and 1m RL.
- Bulk densities were supplied by Vertex from metallurgical assessments of 2.7t/m³.
- Ordinary Kriging interpolation method was used for the evaluation of gold. Inverse distance squared interpolations were conducted for validation purposes.
- A comparison evaluation was conducted using all data including underground face sampling to demonstrate the potential upside of the resource.
- High-grade cutting of 120ppm Au was used. In comparison high-grade cutting incorporating the underground face sampling was 1200g/t.
- The resource is classified as indicated and inferred due to data density, structural definition and continuity from the underground drives, stopes and face sampling.

PROJECT GEOLOGY

Gold occurs along the 25km strike length of the Hill End anticline (Harper, 1918; Joplin 1949; Seccombe and Hicks, 1989; Windh, 1995), including the historically important Hawkins Hill mines at Hill End, where the late Silurian Chesleigh Formation hosts gold-bearing, bedding-parallel, laminated quartz veins and associated structures on the east limb of the Hill End anticline. At Hill End, the anticlinal hinge consists of two closely spaced anticlines and an intervening syncline.

Previous mining at Hawkins Hill worked a series of rich, gold-bearing veins over a strike length of 1 km and to a depth of 200m from the surface in places (Figure 8).

Figure 8 - Long-section of Hawkins Hill mines with the more recent Reward Mine



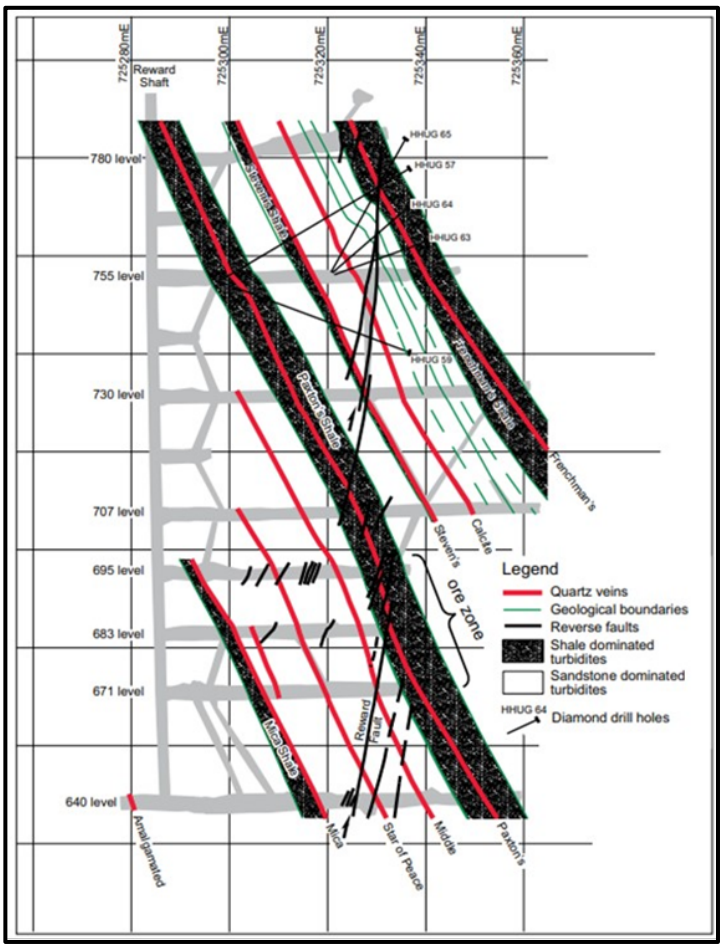
Source: Modified from HEGL

Exploration north from Hawkins Hill to Reward and Germantown indicated that bedding-parallel veins only showed significant gold mineralization (>10 g/t) in a subvertical and N-striking mineralized corridor (Fig. 3) on the east limb of the westernmost anticline in the core of the Hill End anticline.

From 2007 to 2010, the Amalgamated adit (640 Level) was extended to intersect a new 286m shaft, known as Reward Shaft. The shaft also provides access to the Paxton's vein set above the 640 Level, as shown in Figure 8. The Consolidated 695 Level (35m above Amalgamated) was widened (from 1.5m to 2.3m) and heightened (to 2.5m) from the adit to the Phillipsons Vein.

Figure 9 shows a cross section at 6,341,555mN through the Reward shaft. East dipping metasandstones and shales with associated mineralized bedding-parallel quartz veins are illustrated. Both are crosscut by late W-dipping faults (e.g., the Reward fault). High-grade gold shoots, mined from the Paxton's vein system, were concentrated between levels 671 and 695.

Figure 9 - Cross section at 6,341,555mN through the Reward shaft



Source: Wilkins and Quayle, 2021

Level development and drilling in the Reward mine have intersected 14 bedding-parallel vein sets within a 360m thick sequence of metaturbidites on the steeply E dipping anticline limb. Vein names date from the 1870s; on 640 access level. The most westerly vein (Lady Belmore) is followed by a 90m thick metasandstone unit. Then, from west to east, named veins are spaced stratigraphically at 5m to 25m apart and are sequentially encountered in higher levels in the mine. The principal veins are:

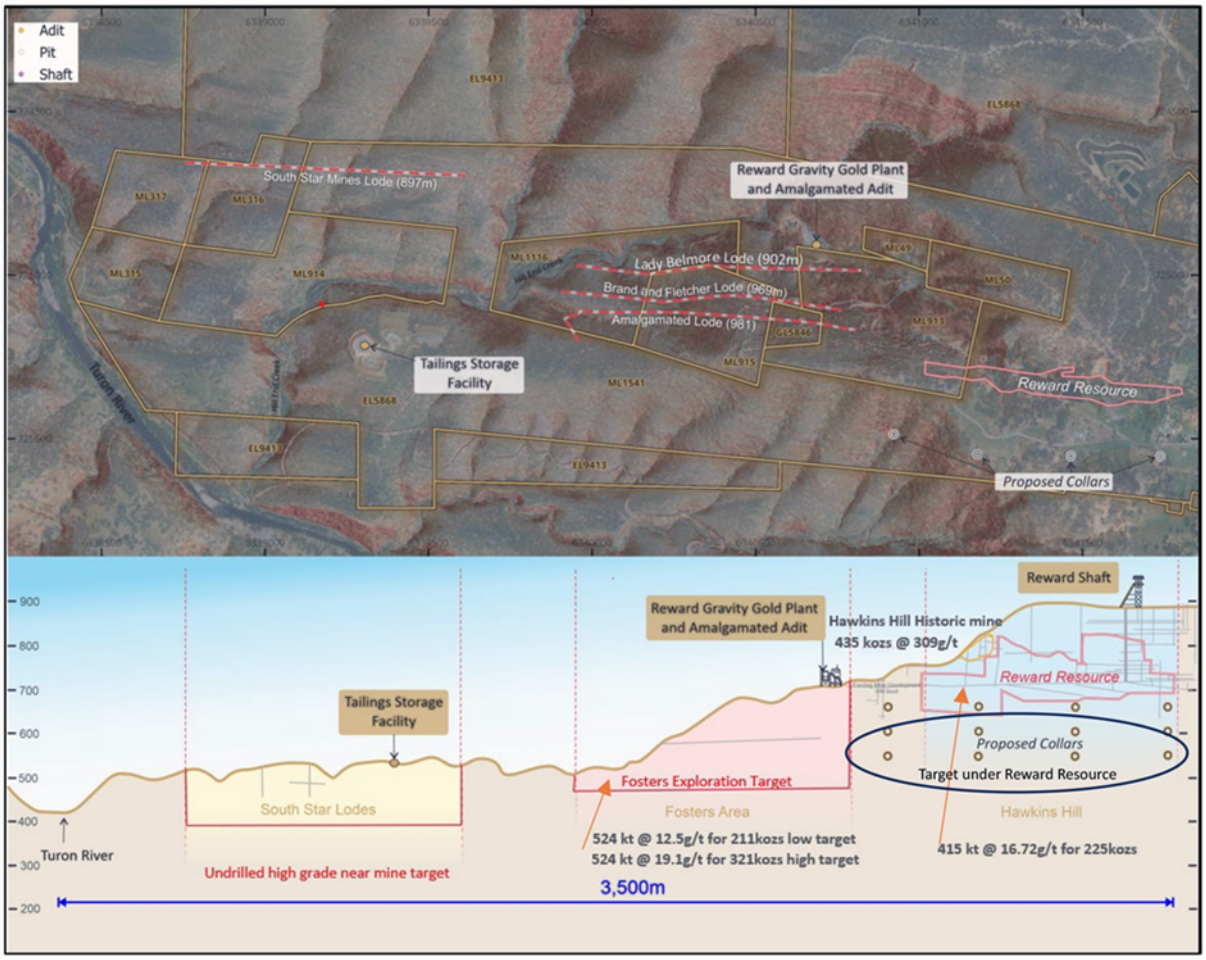
- Brand and Fletcher's,

- Amalgamated,
- Phillipson's,
- Mica,
- Star of Peace,
- Middle,
- Paxton's,
- Steven's (Moustaka's),
- Calcite (Herman's),
- Frenchman's (Star of Hope),
- Far East,
- Rowley's, and
- Mountain Maid

In the Reward mine, metaturbidites young to the east and contain fining upward cycles. Diagenetic and syndeformational low-grade alteration (chlorite, calcite, muscovite, sericite, epidote, pyrite, and arsenopyrite) of sandstone-dominated metaturbidites is common throughout the mine sequence. However, bedding-parallel laminated quartz veins are restricted to shale beds (now represented by cleaved black slates) in either sandstone or shale dominated turbidites.

The principal bedding-parallel veins in the Reward mine have a maximum thickness of ~75 cm. In narrow slate beds they may be represented by individual veins or sets of two to four veins (e.g., Mica and Paxton's). They initially appear to be constant features over 100s of meters; however, in detail along the strike and downdip they tend to have variable persistence, thickness, character, and grade distribution (1,000 g/t).

Figure 10 - Plan View of tenements and long section showing main areas



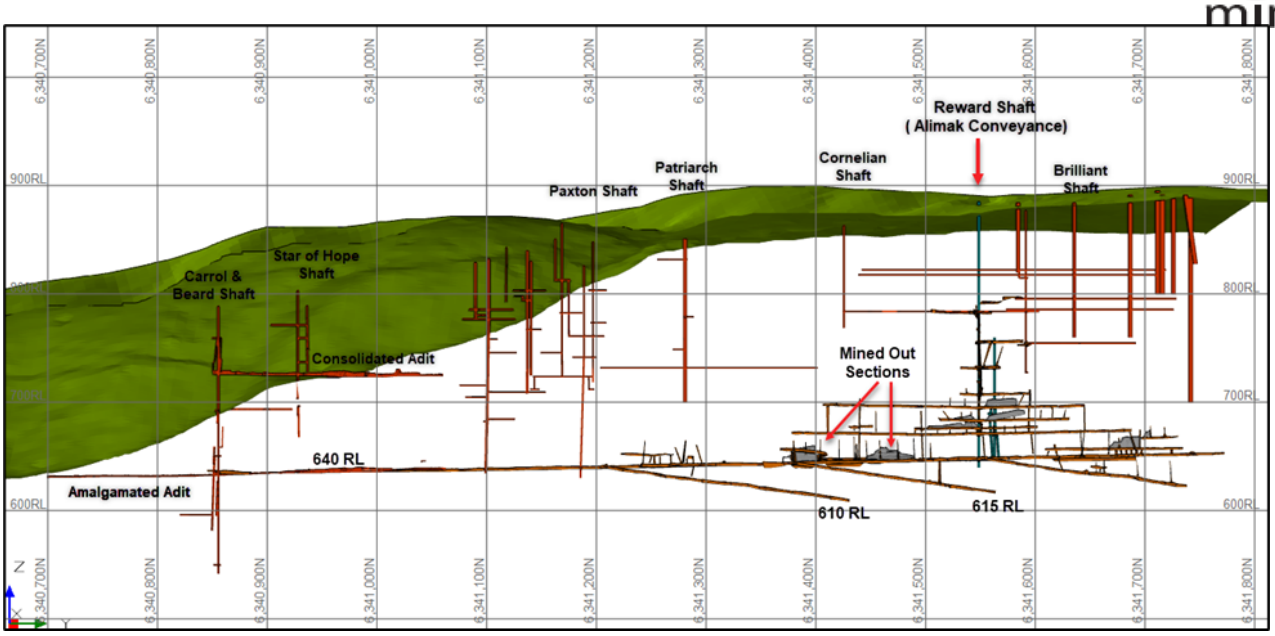
MINING

Existing Mine Infrastructure

The Reward underground deposit, last developed in 2010 during the trial mining stage, is accessed through the Amalgamated Adit at the 640RL. The primary horizontal development profile is approximately 2.4mH x 2.4mW. The 640RL Adit level extends up to approximately 1.1km in length, reaching the current Reward resource extension.

Three separate declines originating from the 640RL have been established to access the lower section of the ore body, currently stopping at 610RL. Above the 640RL, ore body access is facilitated through the Reward Raisbore shaft, where level development occurs at distinct intervals ranging from 10m to 20m along the ore body's strike. Mining has already taken place on some sections of the ore body at these levels. A considerable portion of the existing development infrastructure is in reasonable condition and strategically positioned to offer a cost-effective means of accessing the existing Reward ore body.

Figure 11 – Existing Reward Mine Infrastructure



Mining Method

The current area of interest within the Reward deposit is 720 m long and has a vertical extent of 200 m. The area is characterized by a narrow multiple parallel ore lenses, demonstrating a dip that ranges from vertical to 75 degrees.

Considering the current underground and surface infrastructures at the Reward mine, along with the ore body geometry, a conventional mechanised longhole open stoping method has been proposed for ore extraction. This method is expected to provide improved safety and efficiency for the extraction. To facilitate the preparation of the area for longhole stoping and provide access for mobile equipment, the existing 2.4mH x 2.4mW development will be stripped to a larger 3.5mH x 3.5mW development profile.

To facilitate the larger development size, the existing portal sets at Amalgamated will be replaced with concrete culverts with an internal size of 3.5m wide and 3.5m high.

Access to the ore body will be maintained through the 640RL Adit. The proposed extraction levels are designed to align with the existing development intervals, with a floor-to-floor level interval ranging from 10m to 20m. All new development will adopt a 3.5mH x 3.5mW drive profile. The development work will be conducted using the Sandvik DD212 single boom jumbo rig.

The primary ventilation and the secondary means of egress will be facilitated through the Reward shaft, which has already linked to all existing levels. Below the 640RL, additional ventilation infrastructures will be required to connect with the primary ventilation circuit. Working areas will receive secondary ventilation through the deployment of axial fans.

Stope extraction will follow a bottom-up sequence retreating along the strike, commencing from the extremities of each level. The proposed method assumes the immediate filling of all stopes with waste rock after extraction. The backfill waste will be sourced from either underground waste development or the surface waste stockpile. To ensure stability, a minimum of 5m rib pillar was located between the stopes.

The production drilling will be conducted using a long-hole drill rig with a 64mm diameter. Stopes will be initiated through a conventional slot, predominantly utilising a single lift. Both remote and conventional bogging methods will be employed to extract blasted ore from the stopes, directing it to the level stockpile. Material from

underground stockpiles will be hauled to the surface using a Sandvik TH 320 truck (or a similar underground low-profile truck)

Figure 12 - Proposed Reward Stope Extraction Strategy (Long and Cross section)

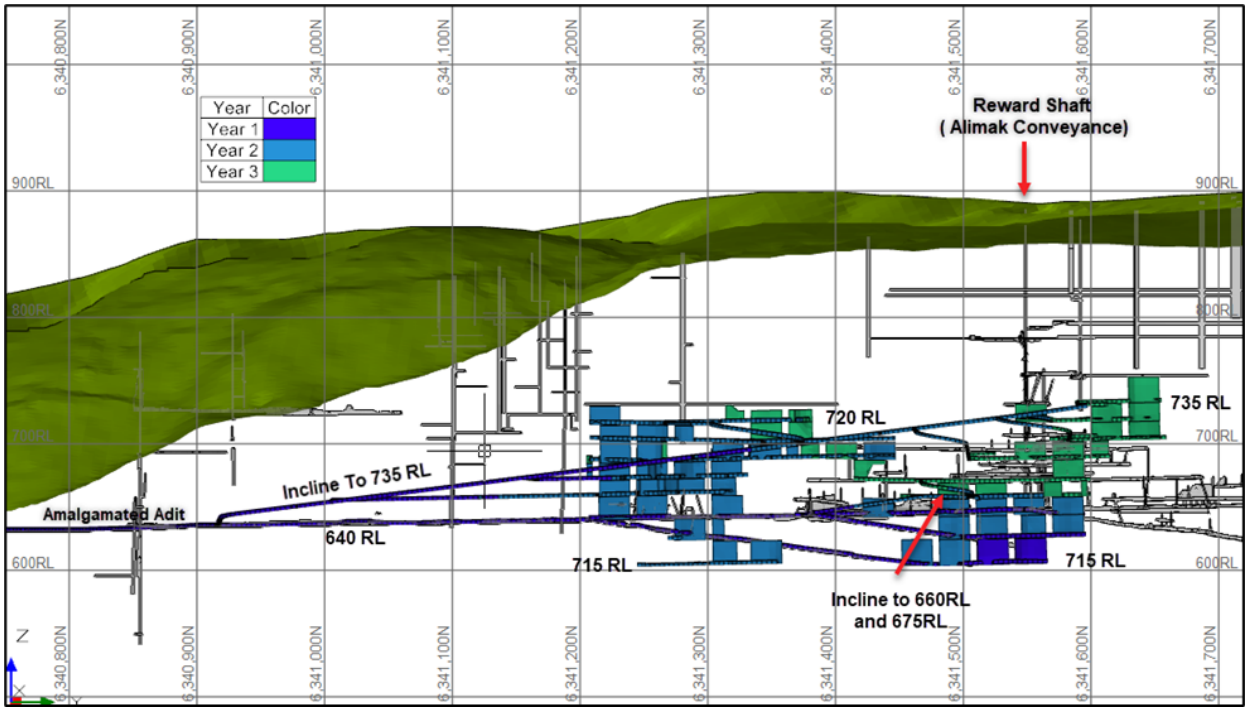
Design Overview

The proposed mine is design to extract the remnant and un-exploited resources from the Reward deposit while optimising the utilisation of existing infrastructures. The initial phase of the project involves upgrading the current drive profile to 3.5mH x 3.5mW. This includes increasing the portal size, stripping all necessary development, including the 640RL Adit, and re-supporting. Anticipated is a total stripping requirement of 1836m over the LOM, with the majority planned for completion within the first 12 months of the operation.

Table 9– Development Stripping estimation

Level	Dev Stripping (m)
615	138
630	267
640	1,245
675	186
Total	**1,836**

Figure 13 - Reward Mine development and stoping areas (looking west)



The new development will adopt a 3.5m x 3.5m drive profile, allowing access to both upper and extended lower levels up to resource boundaries. The new development includes a minimum turning radius of 20m and gradients ranging from 1:7 to -1:7. The main eastern incline will provide access to the majority of upper levels, while the central incline from the 640RL will connect to the 660RL and 675RL. The typical production level layout will include level access, sump, level stockpile, and ore drive. The global trend for ore drives follows a south - north direction, aligning with the orientation of narrow ore lenses. The production level interval is predominantly based on the existing level development, ranging between 10m and 20m (floor to floor). The newly created levels have implemented with a 15m floor-to-floor level interval. The total projected full-face development for the proposed strategy is 4,995m.

Stope design and Production Sequence

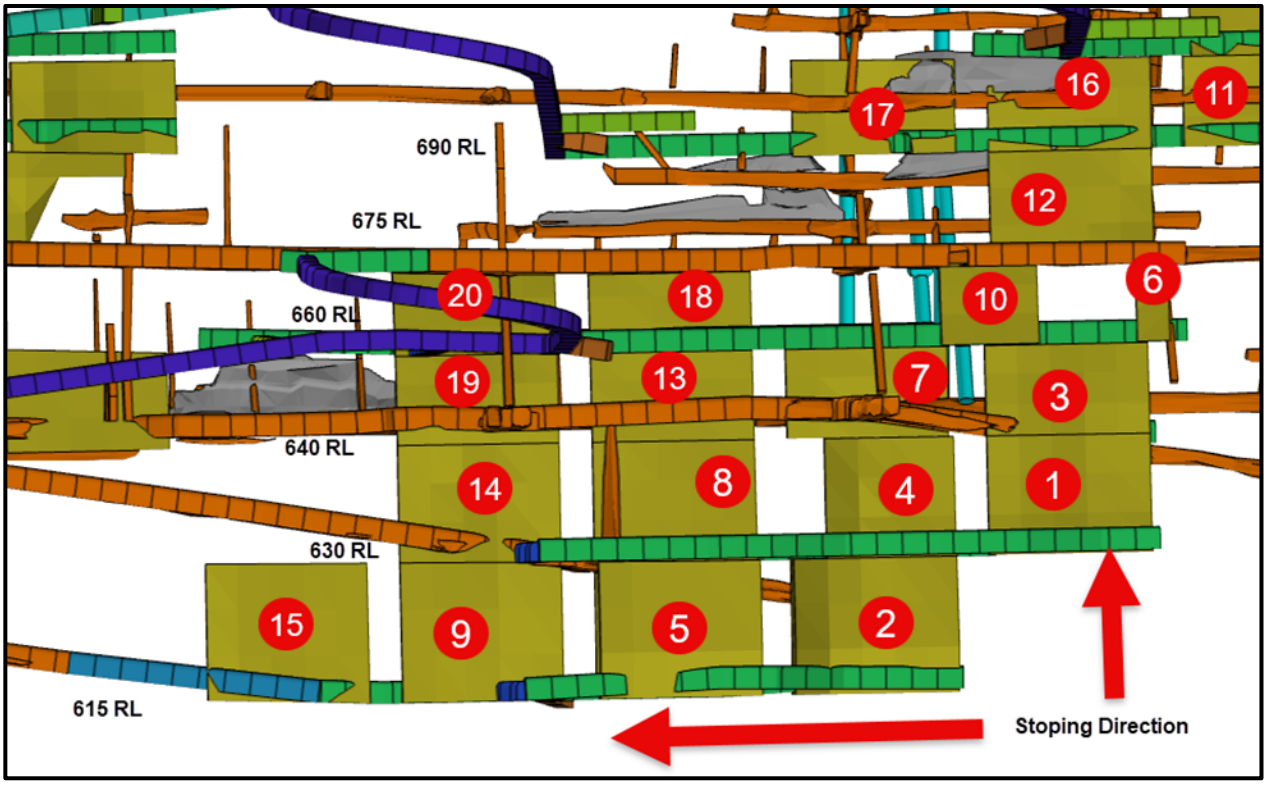
Stope shapes were designed using a 5g/t design cut-off, with a minimum true stope width set at 3m and a maximum strike length limited to 25m. A minimum 5m rib was designed, although it is important to note that the rib pillar location has not been optimised for high metal recovery. Furthermore, ore losses and recoveries were incorporated into the shapes during the scheduling process. Stope dilution of 10% and stope recovery factors of 95% were applied, with a null overbreak grade. The summary of stope parameters used is shown in the table below.

Table 10 - Stope Design Parameters

Stope Parmeter	Value
Max Strike	25m
Minimum Waste / Rib Pillar	5m
Design Stope Cut off	5g/t
Min. Stope Thickness	3m
Stope Dilution	10%
Stope Recovery	95%
Default SG	2.65
Broken Rock SG	2

The proposed strategy employs a bottom-up stoping sequence, initiating mining activities from the lowermost levels at 615RL and progressively advancing upward in the northern end. Due to a single access design strategy, concurrent activities will be limited in these mining levels. However, multiple stoping fronts will become available once the upper-level developments are established, offering independent stoping fronts.

Figure 14 - Local Stoping Sequence (615 RL to 690 RL)



Indicative Production Profile

An Integrated preliminary LOM schedule was prepared using the Dewsik Suite, incorporating critical attributes, resources, and dependencies. Production priorities have been aligned to favour inventories with higher geological confidence.

The stoping schedule is primarily constrained by the bottom-up stoping sequence. Delays in stope production are anticipated, primarily due to a 12-month refurbishment period for the Reward shaft and primary development stripping activities.

During this period, existing mine stockpiles and dumps, assumed to contain 50Kt at 1.7g/t, will be processed alongside the development ore. The integration of these materials is a strategic measure to commence production during the refurbishment phase and it's important to note that this material is excluded from the ore reserves. (This material does not form part of the PFS)

Figure 15 - Production profile by month

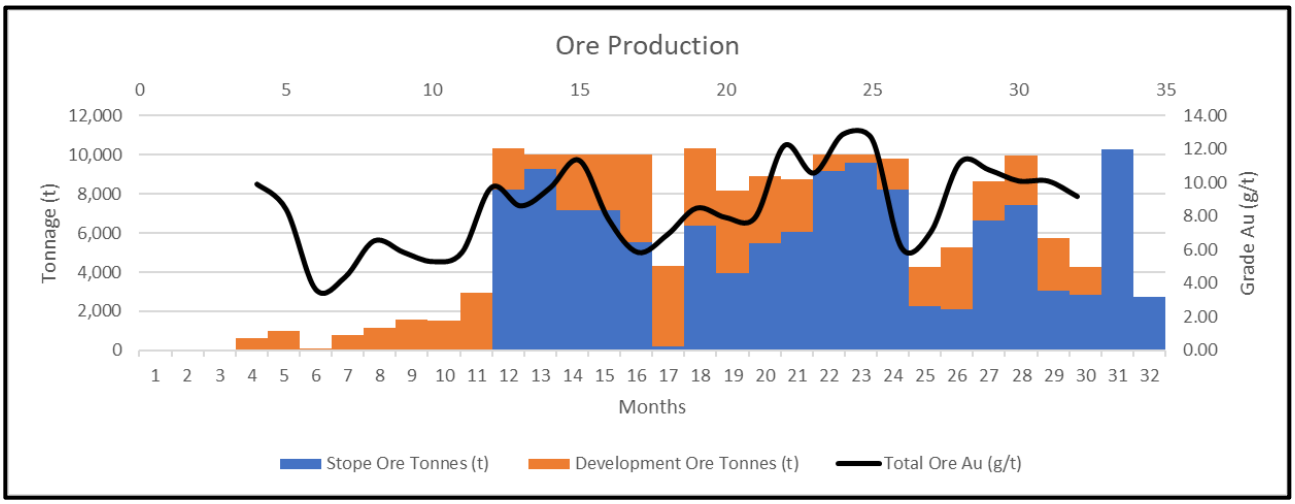


Figure 16 - Lateral Development Profile

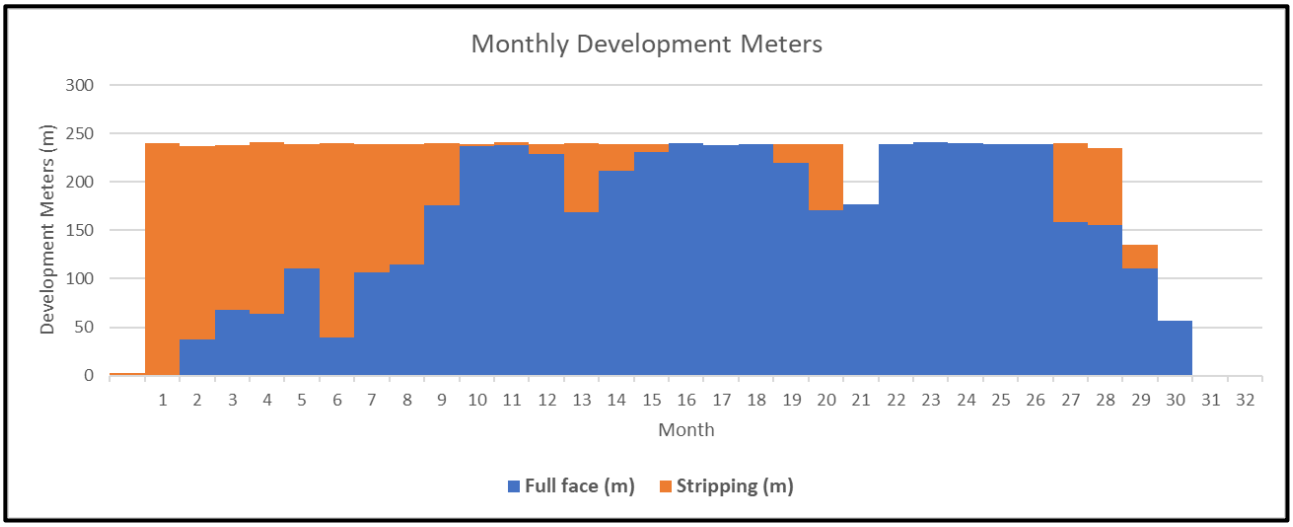


Table 11 outlines the resource productivity assumptions employed in the schedule.

Table 11 – Equipment & Activity Productivity

Resource	Rate
Jumbo	240m/mth
Boggers- Stope Ore	1200t/day
Production Drilling	250m/day
Bogger - Backfill	1000t/day
Boggers	1200t/day
Cable bolting	100m/day
Process throughput.	10,000t/mth

A summary of the mine physical is detailed in

Table 12.

Table 12 - Physical Summary

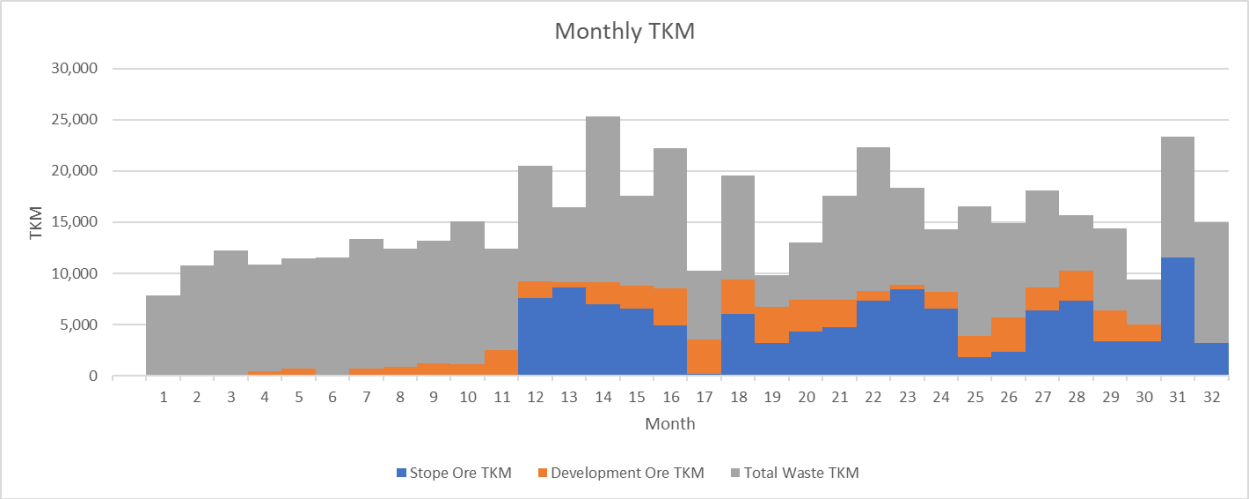
Physical	Total	Year- 1	Year - 2	Year - 3
Production				
Stope Ore Tonnes (t)	**123,691**	8,232	78,087	37,372
Stope Ore Au (g/t)	**10.13**	9.89	10.15	10.13
Development Ore Tonnes (t)	**57,784**	11,811	32,215	13,758
Development Ore Au (g/t)	**7.51**	6.72	7.49	8.24
Total Ore Tonnes (t)	**181,475**	**20,043**	**110,302**	**51,130**
Ore Au (g/t)	**9.29**	**8.02**	**9.37**	**9.62**
Au Oz delivered to Surface (Inc. Inferred)	**54,224**	5,169	33,243	15,813
Development				
Full face (m)	**4,995**	1,420	2,615	960
Vertical (m)	**-**	-	-	-
Stripping (m)	**1,836**	1,452	196	186
Capital Lateral Development (m)	**3,037**	2,065	688	282
Operating Lateral Development (m)	**3,794**	807	2,123	863
Total Development Ore Tonnes (t)	**57,784**	11,811	32,215	13,758
Total Development Waste Tonnes (t)	**108,461**	53,353	41,285	13,823
Total Development Tonnes (t)	**166,246**	65,164	73,501	27,581
Drilling				
Production Drilling (m)	**29,591**	4,288	16,362	8,941
Misc. Drilling (m)	**3,600**	300	2,068	1,232
Total Drilling (m)	**33,191**	4,588	18,430	10,173
Cable Bolting (m)	**3,168**	1224	1332	612
Backfilling				
Rock Fill (t)	**84,270**	6,771	58,797	18,702
Haulage				
Stope Ore (tkm)	**114,777**	7,590	67,865	39,322
Development Ore (tkm)	**51,976**	9,172	27,566	15,237
Total Waste (tkm)	**153,528**	130,761	91,528	28,715
Total (tkm)	**320,281**	147,524	186,959	83,275

The truck TKM were determined by establishing the underground haul network. Assumptions were made, considering that the average distance for rehandling underground waste is 1.0 km. All extracted ore was

delivered to the surface ore stockpile, and any excess underground development waste was transported to the surface waste stockpile.

In cases where there is a shortage of underground waste, the assumption is that the deficit will be compensated for by supplementing from the surface waste stockpile. Importantly, it is observed that the peak demand for trucking reaches 25,000 tkm, and no constraints in the schedule are anticipated due to Truck TKM.

Figure 17 - Truck Haulage (tkm)



NON-PROCESSING INFRASTRUCTURE

Reward is a brownfields Gold Mining project with some infrastructure from Trial mining in 2008. The key infrastructure is located at the portal of the Amalgamated adit (entrance to mine and proximal to the Gravity Gold plant) and at the entrance to the Mining lease on Freehold land owned by Vertex at Reef Street Hill End

Existing Infrastructure includes:

- All weather road to mine and plant
- Changerooms and Ablutions at Adit entry and plant
- Crib Room
- Small workshop for underground Mine and plant
- Explosive magazine
- Water tanks and water supply
- Satellite Communications
- Mine Adit
- 2nd shaft egress with Alimak and ladderway conveyance
- Tails Dam
- Tails lines
- Security Cameras
- Small Gravity Gold Plant
- Diesel Generators
- Plant spare storage.
- Laydown area

- Security gates

New Infrastructure to be installed at Reef Street (staged)

- Sentry office, sign in, drug and Alcohol testing, security checks.
- Visitor/Employee Car Park
- Security fence
- Automated Security Gate
- Administration Office
- Administration
- Mining
- Technical
- Environment/Safety/Training
- Training and Induction Room
- Changeroom and Ablution
- First Aid facility
- Fuel facility.
- Warehouse
- Washdown bay
- Hydrocarbon store
- Geology and Core facilities
- Workshop
- Power will be connected to the grid mains.
- A sewage system will need to be installed.
- Water will be supplied from the Town water supply.

Offices & Administration

The Hill End (Reward Mine) Gold project's main administration building will be located at the Reef Street location. The land is owned by Vertex and sits to the south of the Hill End Township but is also on the Northern end of the Reward Mine lease and will be the entrance to the Mining and processing operation. The administration building will be linked, by walkway, to the sentry building which will be used for security, drug and alcohol testing and security. It will also act as the coordination centre for safety and environment incidents. The administration building will be open planned with six workstations. The managers offices will consist of four private offices.

The Hill End township is owned and managed by National Parks. The town is recognised as a historic mining town. Most buildings in the town are circa 1870s, made from either Brick or corrugated iron. To maintain the theme and blend into the landscape, Vertex plan to build offices and sheds that are zinc corrugated iron. Windows will be black alumina, and the verandas will be made of hard wood timber.

The buildings will be stumped on 100 by 100mm gal RHS 400mm high. All buildings will be built so that can be removed from the stumps.

Store and workshop

A secure warehouse and storage facility will be constructed at the Reeve Street location. The warehouse will service both mining and processing. The building will also incorporate a workshop that will house a light vehicle

bay with hoist and a heavy vehicle bay for mining and processing equipment services and maintenance. The warehouse will have a laydown yard with secure fencing.

The Warehouse end of the building will be separated from the workshop by an internal wall. The warehouse will contain fixed and mobile plant spares, Electrical items consumables, PPE, tools, workwear, and general supplies.

The workshop will be fitted with appropriate tooling, welding area, and lifting equipment. The workshop will also have a 1000-volt supply to run underground equipment

Wash down bay

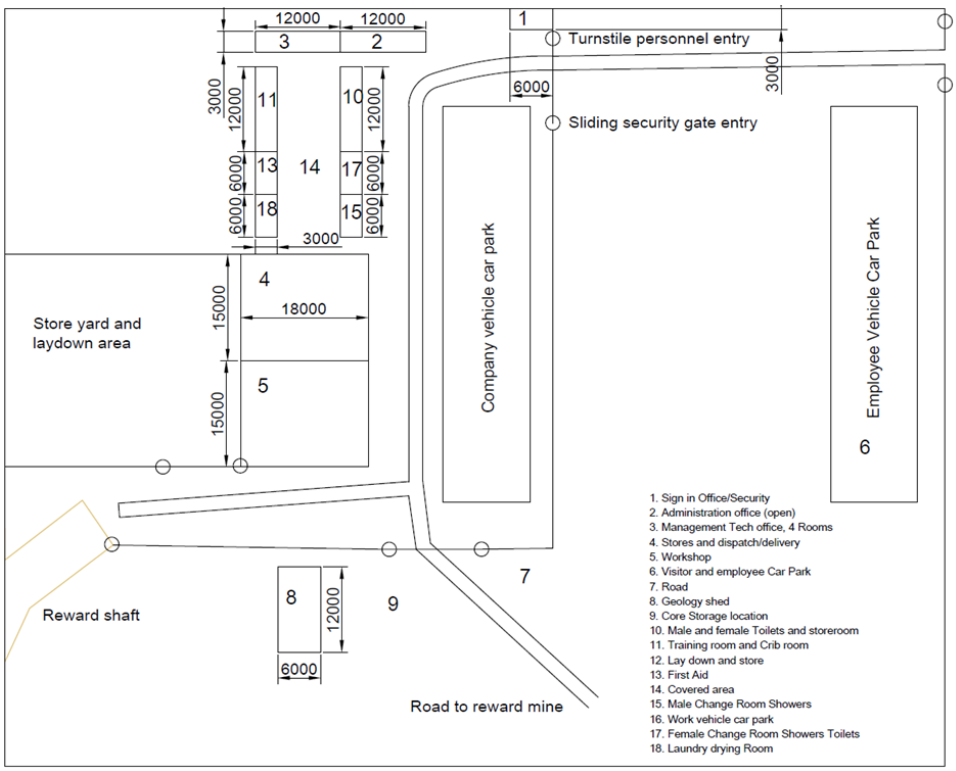
A washdown bay will be constructed beside the Reef Street Warehouse to service, Light vehicles, heavy vehicle, and drills. The washdown bay will have a sump with an oil separator. Used water will be pumped back into wastewater tank and recycled for cleaning down heavy equipment and fresh potable water will be available predominantly for LV purposes.

Communications

Telecommunications for the Hill End Gold project (including Reward Gold mine) will include;

- Two way radio communication on surface and separate channels for underground communications.
- Starlink for the Admin and plant sites.
- Mobile Phone (Optus).

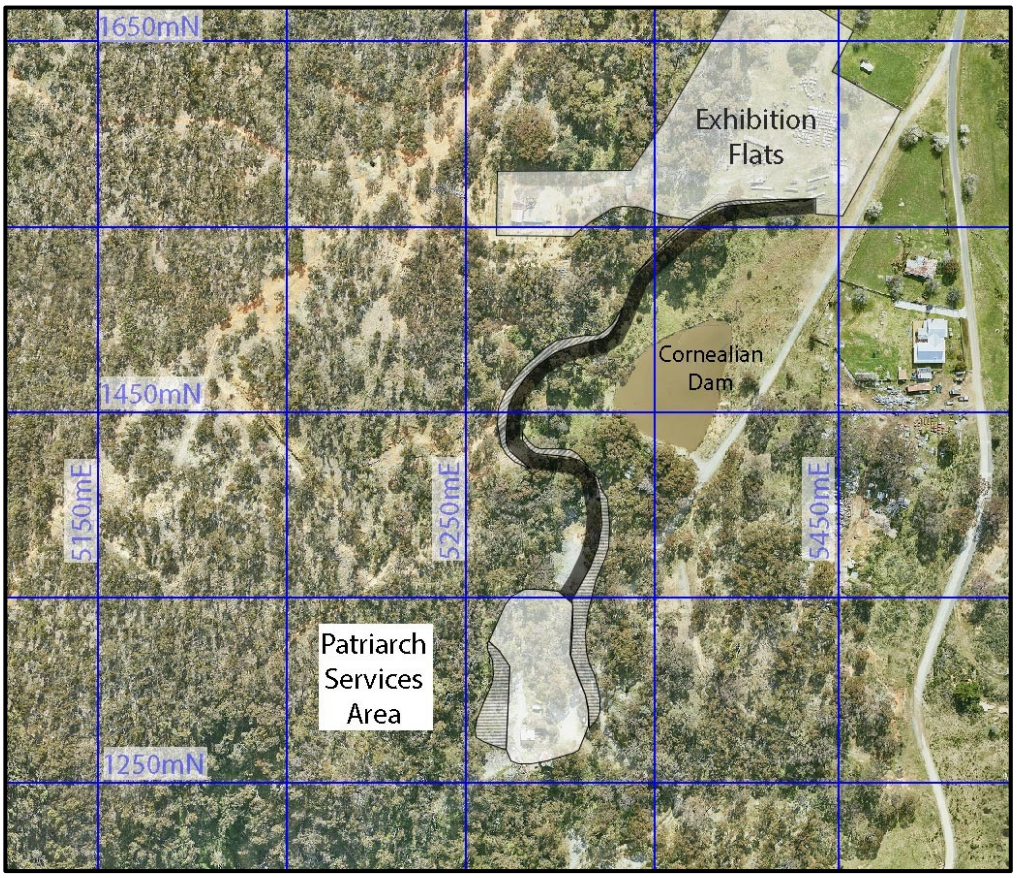
Figure 18 – Exhibition Flats Administration Area



Power and Fuel Facilities

It is planned to construct and flat pad adjacent to the Patriarch Shaft, as illustrated in Figure 19, to install power generation and fuel storage facilities. Preliminary design indicated that approximately 4,000m3 of cut and fill is required to establish the pad and roadway.

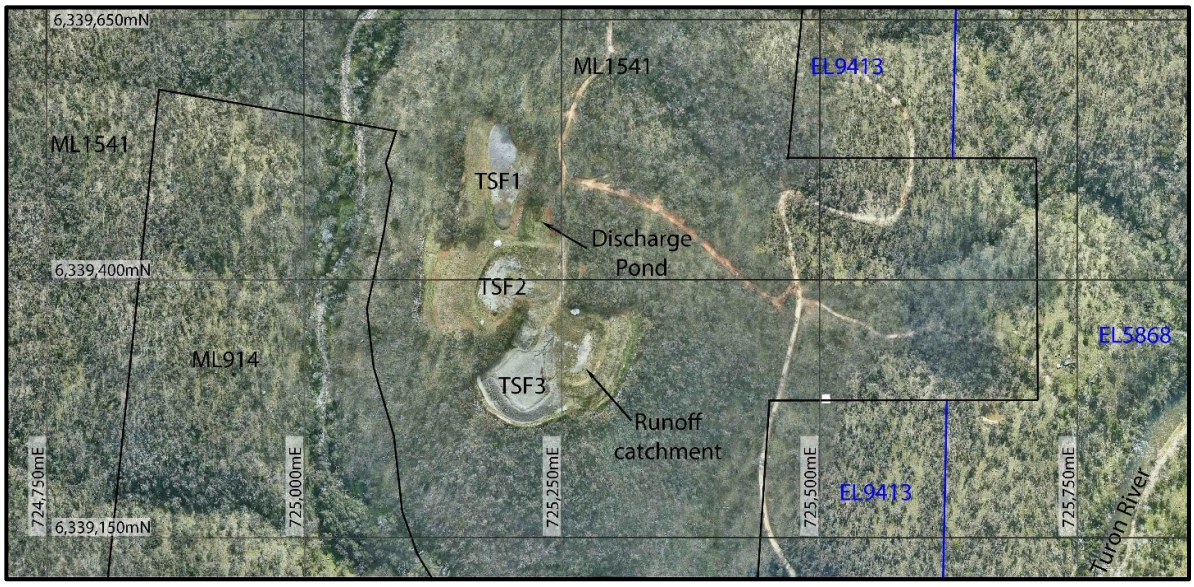
Figure 19 – Patriarch Services Infrastructure



Tailings Storage Facility

The existing tails storage facility was constructed between 2008 and 2010. The facility is illustrated in Figure 20 and comprises two wet material impoundments (TSF 1 & TSF2) and a dry sand stacking area (TSF3). There is a catchment dam that retains any surface run off from the area and a discharge pond that was originally used as a polishing dam for recycling water and returning it to the processing plan

Figure 20 – Current arrangement of tail storage facility



MINERALS PROCESSING

Metallurgy

The selection of processing method follows the historical processing plant design which reported gold recoveries in excess of 95% (Figure 21), utilising a simple crush, grind, coarse and fine gravity separation circuit. A review of historical test work indicated that the gold can be classified as predominantly free gold and liberates well at a target P80 grind size of 670 µm (Figure 22). The ore is hard but fails in a columnar and shear fashion and will be moderately abrasive.

Figure 21 – Site Gold Recovery Data April 2008 to February 2009

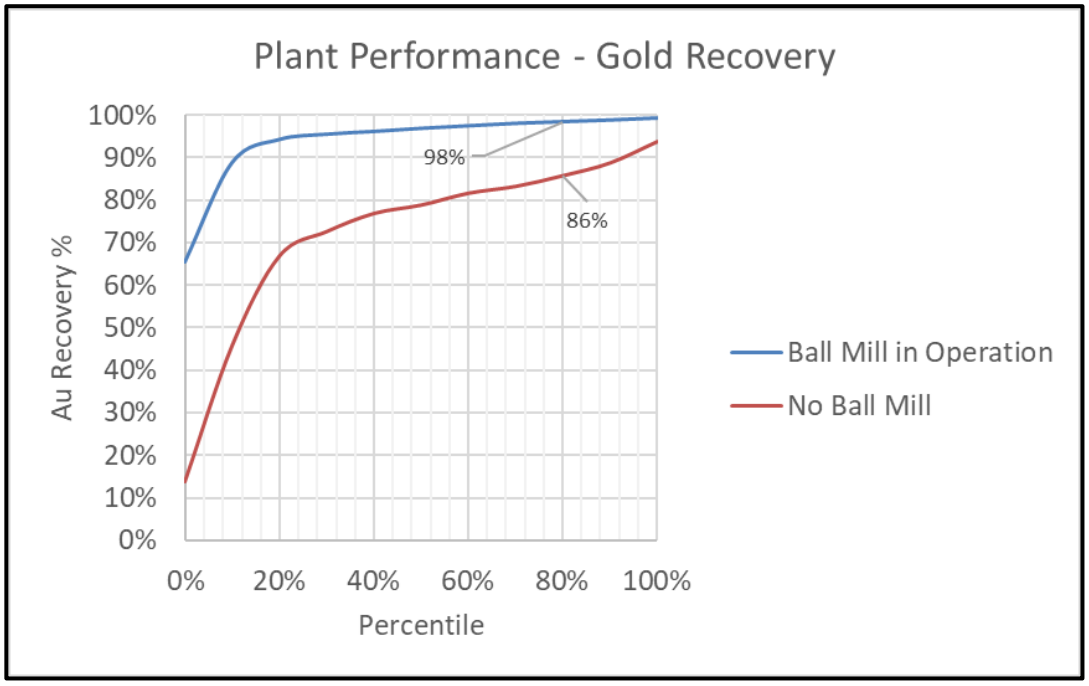
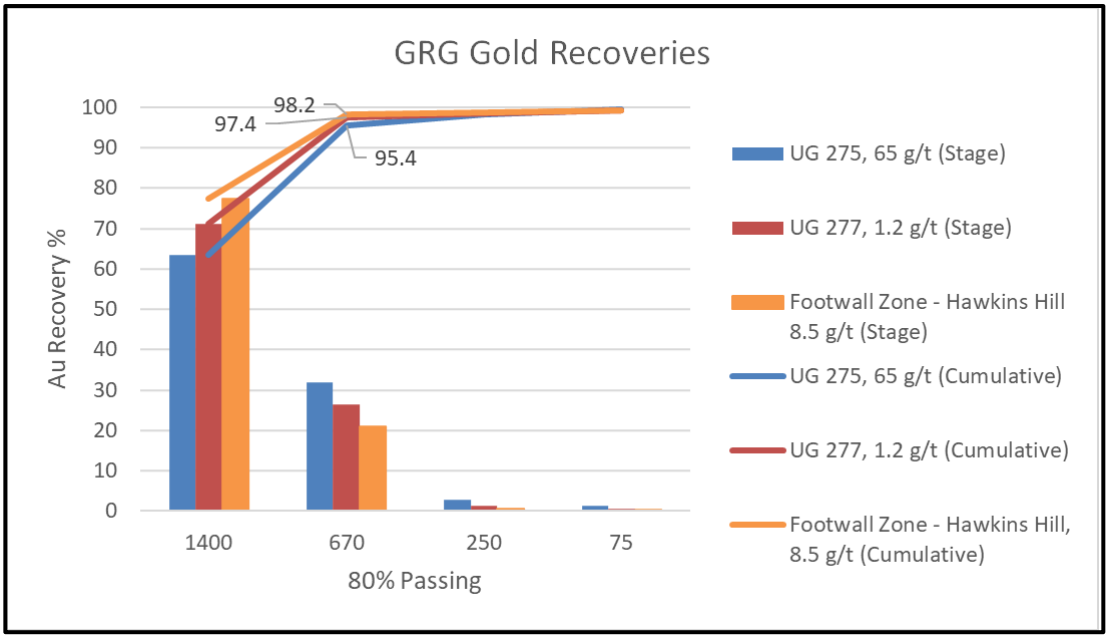


Figure 22 – GRG liberation data from Metallurgical Testing in 2006 and 2008



Processing Plant

The mineral processing plant is designed to treat 110ktpa of 'run of mine' ore. Gold is liberated via three stage crushing and ball milling. The gold is concentrated in the Gravity circuit consisting of two batch centrifugal concentrators (BCC) and a scavenger InLine Pressure Jig. The intermediate gold concentrate is cleaned on a shaking table prior to smelting into dorè.

The processing plant includes the following process unit stages:

- Crushing of ROM ore to sub 1.5mm, utilising open circuit primary and secondary crushing (Jaw Crushers) and closed-circuit tertiary crushing (vertical shaft impactor)
- Gravity concentration of Gold via BCC with scavenger InLine pressure jig operated in closed circuit with the BCC.
- Gold room activities including tabling, drying and smelting.
- Grinding via a Ball Mill producing a grind size of P_{80} 500 µm.
- Screening and dewatering via settling cones.
- Water recycle and tailings system.

A simplified processing flowsheet is shown below in Figure 23 as well as an indicative plant layout in

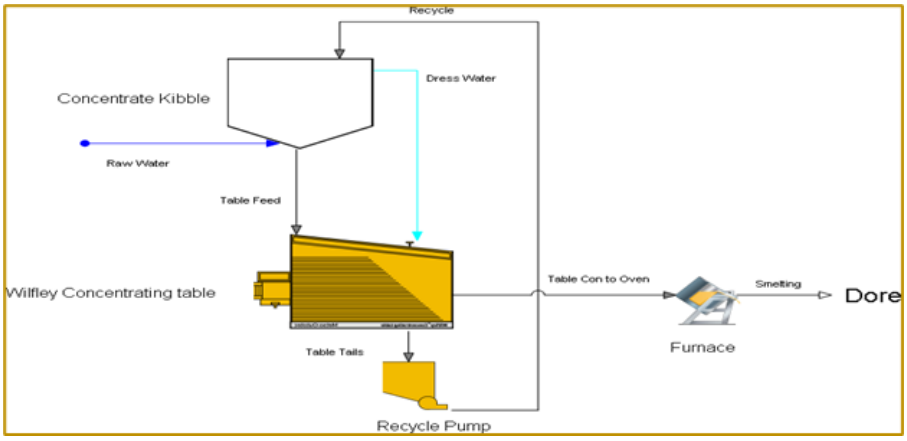
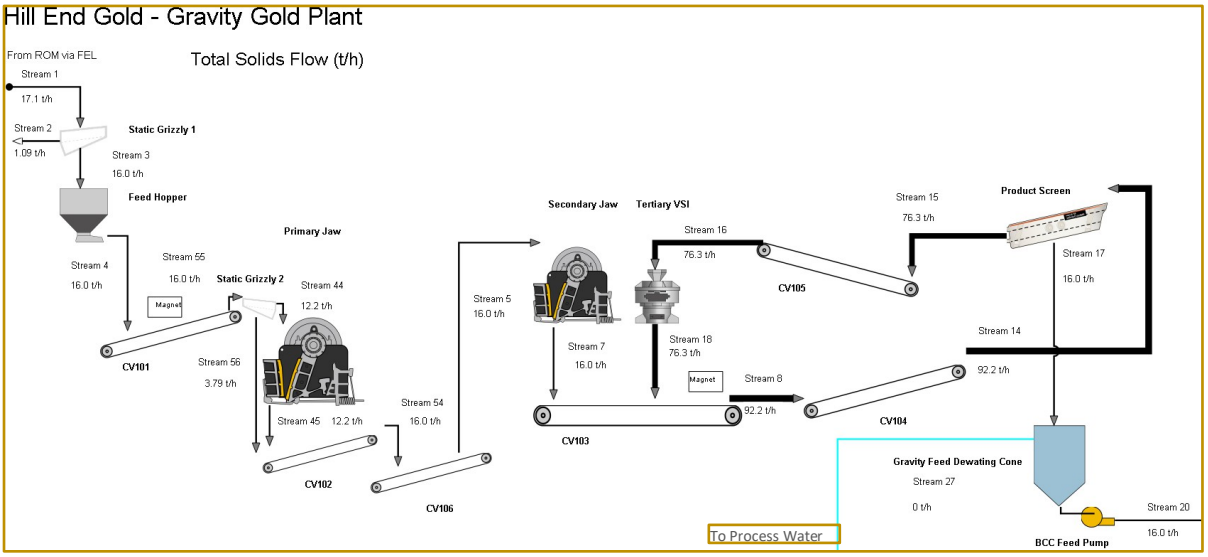
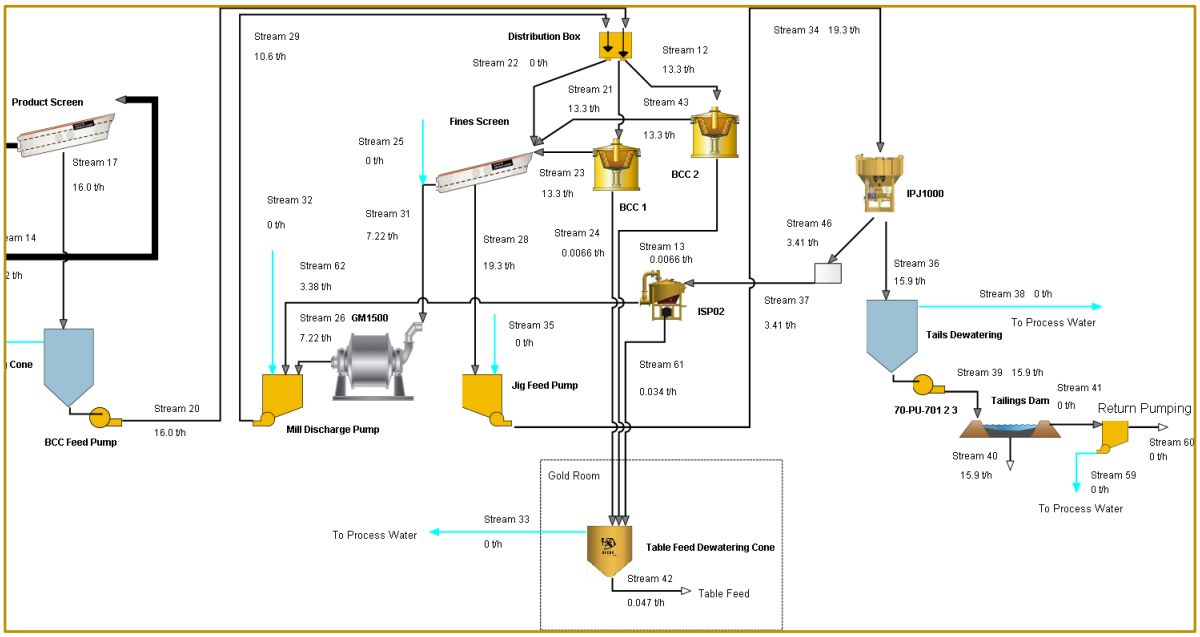
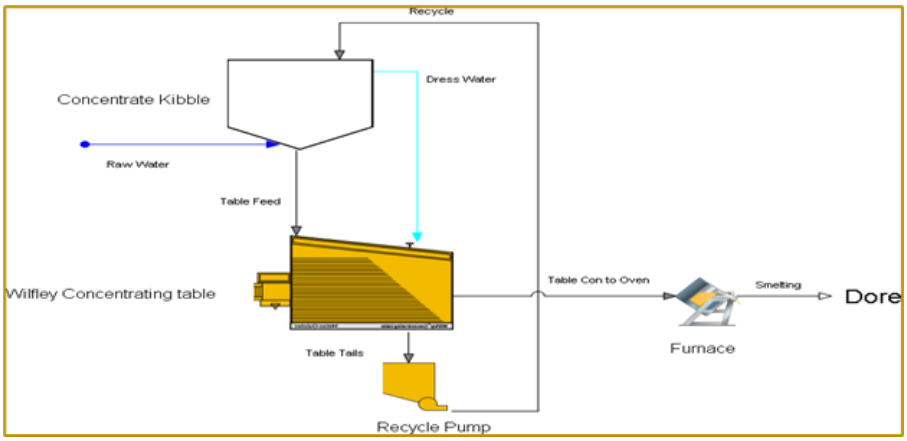


Figure 24.

Figure 23 – Processing flowsheet

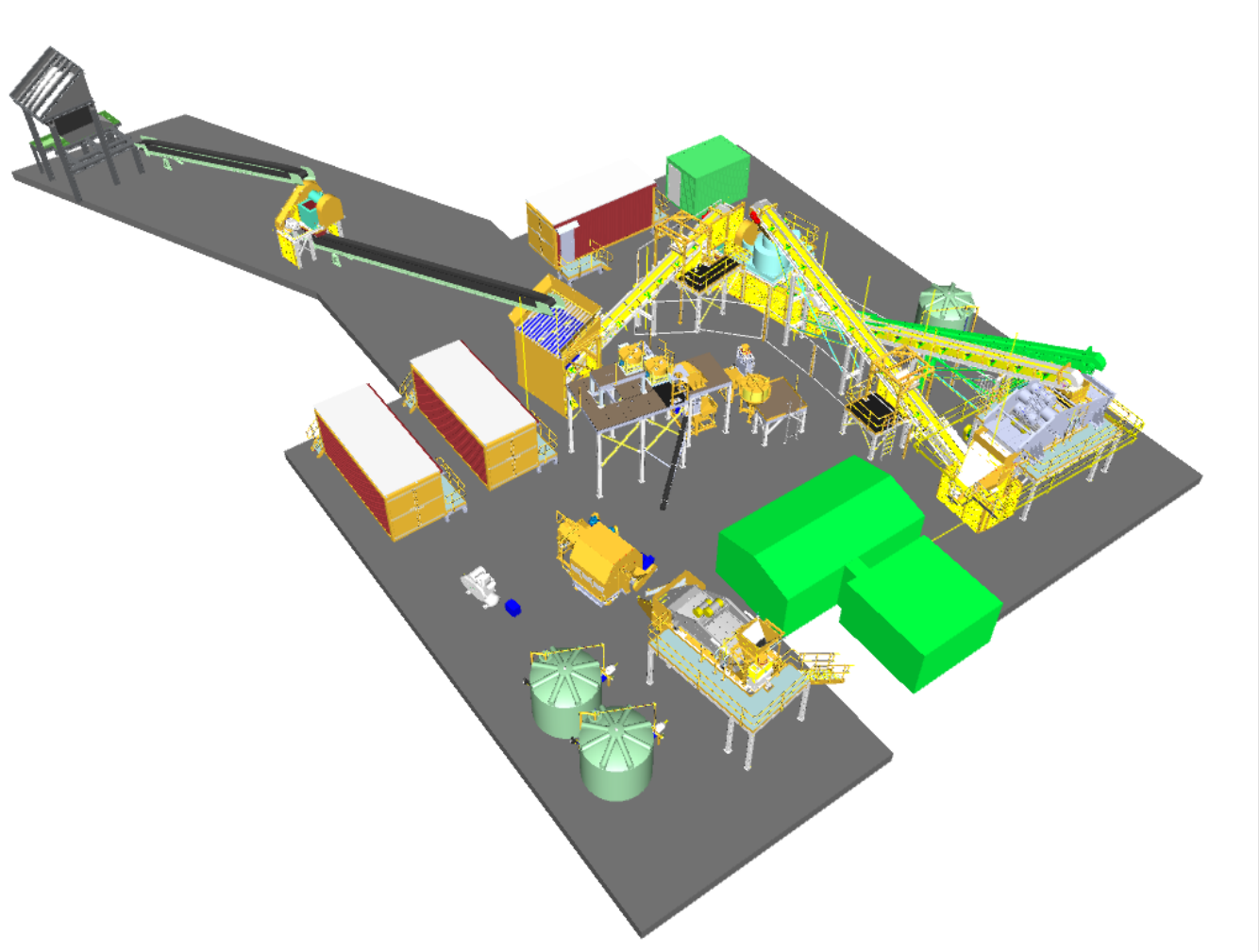






W. www.Vertexminerals.com
E. info@vertexminerals.com.au

Figure 24 – Indicative Process Plant Layout



The Process Design Criteria are listed in Table 13.

Table 13 - Process Design Criteria

Item	Unit	Design Value
Annual throughput	tpa	110,000
Nominal throughput	tph	16
Operating hours	H/annum	7008
Gold feed grade	g/t	10
Gold recovery	%	92
Process Feed Size	F_{80}, mm	300
Unconfined Crushing Strength	MPa	89
Bond Crushing Work Index	kWh/t	13.3
Bond Ball Mill Work Index	kWh/t	16.9

Facility Description

Crushing

ROM material from the underground mine is trucked to the ROM pad. A front-end loader recovers the ore from the ROM pad and tips onto the Primary Grizzly to scalp out +300 mm rock. The +300 mm rock is recovered for either secondary breakage or if designated as waste, removed to the waste dump, while the -300 mm (P95) is collected in the primary crusher feeder hopper and is conveyed into the Primary Crusher.

The plant feed conveyor is equipped with a static magnet to remove tramp metal. Fines are scalped out and bypass around the Primary Crusher. Oversize Feed is presented to the Primary Cusher, a Jaw Crusher. Product (<150 mm) is deposited onto the crusher product belt which then conveys to the Secondary Crusher via a static magnet. The Secondary Crusher, a Jaw Crusher, produces product <50 mm and discharges onto a shared Crushed Product conveyor transporting both the Secondary and Tertiary Crusher products onto the Product Screen feed conveyor.

The Product Sreen Oversize (> 1mm < 50mm) is conveyed to the Tertiary crusher (vertical shaft impactor) which crushes the product screen oversize and discharges onto the shared Crushed Product conveyor.

Screening

The product screen feed conveyor discharges onto the product screen. Wet screening is then undertaken on two decks. The top deck is 8 mm x 25 mm slotted apertures, and the bottom deck is 2 mm x 18.5 mm slotted apertures (cross flow to avoid passing slabby material). The top deck protects the lower deck and reduces the load on the bottom deck. Both deck oversize streams are combined and discharge through a 50 mm static screen via a common oversize chute. The oversize chute discharges onto the tertiary crusher feed conveyor. Oversize (+50 mm) material chutes to a bunker or bin for either secondary breakage or if designated as waste, removed to the waste dump.

Batch Centrifugal Concentrator

The undersize slurry from the product screen reports to the Gravity Feed de-watering cone from where it is pumped to the coarse gravity circuit. Water is recovered from the cone overflow and is recycled in the process water system. The Gravity feed de-watering cone underflow pump pumps to the BCC feed distributor. The distributor diverts the slurry to either BCC feed or BCC bypass. The BCC's run a batch cycle, recovering approximately 11 kg of concentrate per ~45-minute cycle. The concentrate is washed into the gold room via gravity pipeline and the tails flows via gravity to the Fines Screen. Fluidisation and flush water (Raw Water) is added via the raw water system. The concentrate accumulates within the Table feed cone, de-watering into the bunded area.

Gold concentrate from the BCC's and the ISP combined in the Tabe feed cone. The concentrate is tabled on a 6A Wilfley shaking table and Gold is recovered, dried and smelted.

Fine Screen and Milling

The BCC tail flows via gravity to the Fines Screen. The screen oversize material (+1 mm) flows by gravity into the Mill for grinding whilst the undersize material (<1 mm) is collected in the spiral feed hopper. The ground slurry leaving the Mill discharges to the Mill Discharge Hopper and is pumped to the BCC Feed Cone creating a recirculating load.

InLine Pressure Jig and InLine Spinners

Fines Screen Undersize is pumped to the continuous gravity concentrator (InLine Pressure Jig, IPJ). The jig concentrate is upgrade in the InLine Spinner (ISP). ISP Concentrate reports to the Table feed cone and the Tail reports via gravity to the Mill discharge hopper, effectively creating a fine gold recirculating load. The IPJ tails discharges via gravity into the Tails De-watering cone.

Dewatering and Tails

The Tailings dewatering cones are fed from the IPJ tails pipeline, an area spillage pump and, if required, flocculant. The tailings cones underflow discharges into a hopper and then pumped to the TSF. The cone overflow reports to the process water tank for re-use as process water.

The key mechanical equipment and parameters are summarised in Table 14

Table 14 – Mechanical equipment parameters

Item	Unit	Design Value
Primary Crusher	type	Jaw Crusher 600x400
Installed Power	kW	30
Secondary Crusher	type	Jaw Crusher 510x255
Installed Power	kW	15
Tertiary Crusher	type	Vertical Shaft Impactor
Installed Power	kW	90
Product Screen	type	Double Deck Horizontal Linear Motion
Size	W x L	1800 x 4800
Screen Apertures	Top, mm Bottom, mm	8 x 25 1.6 x 18.5
Grinding Mill	type	Overflow Ball Mill
Mill dimensions	m x m	1.55 x 1.5
Installed mill Power	kW	37
Fine Screen	type	Double Deck Horizontal Linear Motion
Size	W x L	1400 x 3000
Screen Apertures	mm	1 x 18.5
BCC	type	Falcon SB400 and Falcon FR400
InLine Pressure Jig	type	IPJ1000
InLine Spinners	type	ISP02
Shaking Table	type	Wilfley 6A

Equipment

It was assumed that mobile and fixed plant for the underground mine would be subject to leasing arrangements, with costs substantially accrued in the operating expenditures. Total equipment expenditures are detailed in Table 15.

Table 15 – Mining Equipment Cost Estimate

Item	Capital $ millions	Operating $ millions	Total $ millions
Mobile Equipment	1.1	6.5	7.6
Light Vehicles	0.1	0.4	0.5
Generators & Electrical Equipment	0.4	2.0	2.4
Fans, Pumps & Compressors	0.3	1.2	1.5
Portal Sets	0.4	0.0	0.4
Mines rescue	0.4	0.0	0.4
Other	1.3	0.3	1.6
Total equipment expenditure	**4.0**	**10.4**	14.3

Processing

The capital cost estimate of the Processing Plant is summarised in Table 16 and was estimated to cost $3.6 million.

Table 16 - Processing Plant Cost Estimate

Hill End Gold Processing Plant Cost Estimation	
Total Project Cost	**$3,586,083**
Total: Direct Capital Equipment Cost	**$2,291,364**
Primary and Secondary Crushing	$1,201,661
Gravity and Milling	$406,531
Fine Gravity	$26,362
Gold Room and Equipment	$4,176
Tailing Dewatering and Pumping	$77,223
Plant Services	$121,634
De-mobilisation of Morningstar	$453,776
Total: Site and Mobilisation Cost	**$743,256**
Shipping	$123,804
Installation Management and Supervision	
Site Installation	$401,536
Site Commissioning	$217,916
Indirect Costs	**$551,463**
Engineering, Design, Drafting and Planning	$360,191
Project Delivery	$191,272

Other infrastructure

Capital estimates include provision for an administration area at Exhibition Flat, and the establishment of a power generation and fuel storage area at the Patriarch shaft area.

Operating Costs

Mining

The cost of mining was estimated from first principles and assumed an owner-operator mining strategy. Total life of mining costs was estimated to be $84.6 million as summarised in Table 17.

Table 17 – Development and Operating Cost

Item	Unit	Year 1	Year 2	Year 3	Total
Capital Expenditure	$ millions	14.7	4.7	1.0	20.4
Operating Expenditure	$ millions	8.1	34.1	19.9	62.1
Total	$ millions	22.8	38.8	20.9	82.5
Development Cost	$ millions	21.2	19.7	9.3	50.2
Production Cost	$ millions	1.6	19.1	11.5	32.3
Total	$ millions	22.8	38.8	20.9	82.5
Development Cost	$/metre	9,248	7,208	8,724	8,241
Stope Cost	$/tonne mined	198	245	309	261
Total Operating Cost	$/tonne processed	406	309	389	342

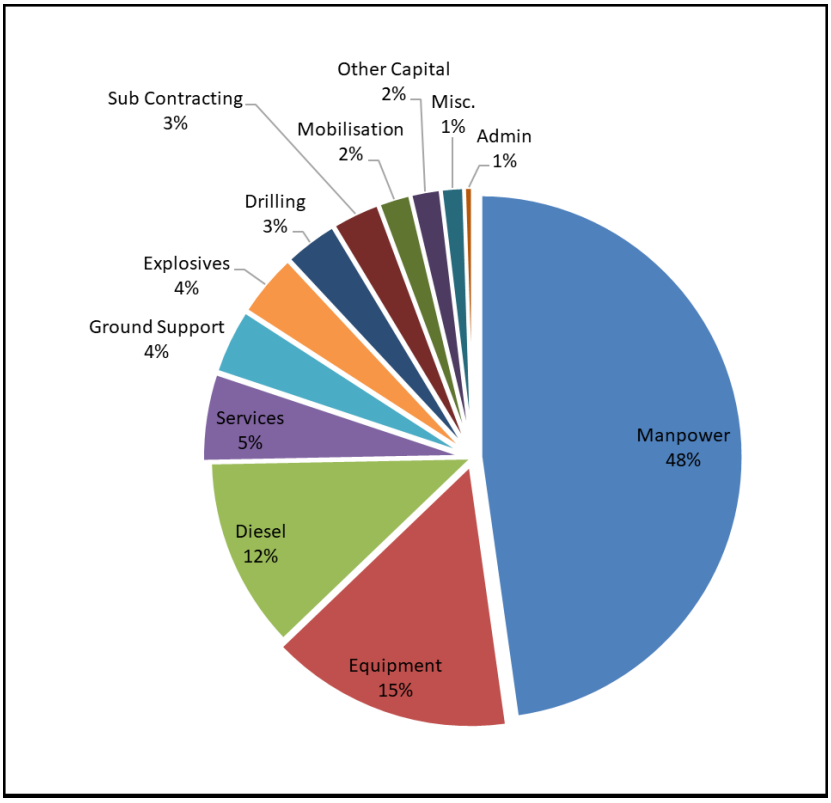
The estimated unit rate for the development of 3.5m wide x 3.5m high drives, declines and inclines was $8,743 per metre of advance.

The average cost of stope production was $239 per tonne stoped.

The average operating cost of production for underground mining, inclusive of operating development and stoping was $361 per tonne processed.

Figure 25 shows the breakdown of total cost by estimation category. Costs associated with employment costs comprised 48% of the total cost, while equipment ownership and operating costs was 15% and fuel 12% of the total. These items account for 75% of the total estimated mining cost.

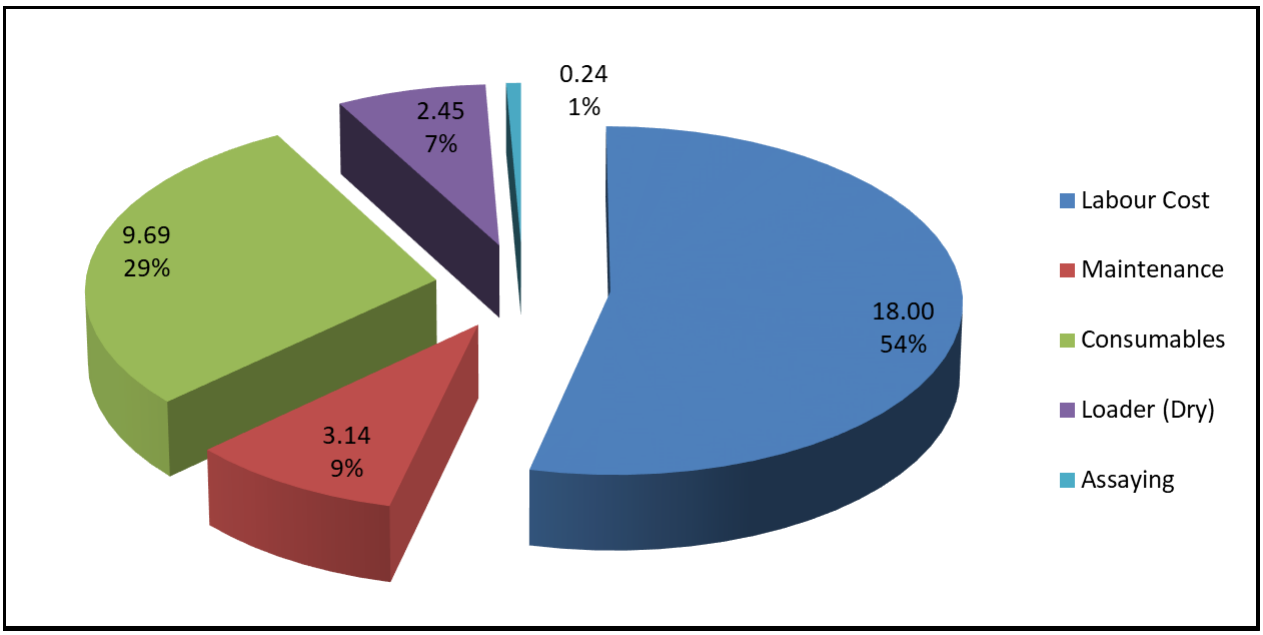
Figure 25 – Breakdown of Total Mining Cost by estimation category.



Processing

Process operating costs were estimated by Gekko to be $33.52 per tonne of ore treated as shown in Figure 26.

Figure 26 – Operating cost per tonne processed



In order to better reflect the fixed cost of some items, particularly labour, a fixed rate of $144,000 per month and a variable cost of $15.52 per tonne processed were used in cash flow models. This was done to reflect higher

costs in months when the process plant is not fully utilised. Over the life of the project, processing costs average $33.77 per tonne processed.

Tailing Management

The operating cost of managing tails materials into a dry stack facility was estimated to be $6.65 per tonne placed. This estimate included the cost of clearing vegetation and topsoil, transportation of tailing sand using truck and excavator operations, shaping of final landform and rehabilitation. The estimate is summarised in Table 18.

Table 18 – Cost estimate of dry stacked sand

Item	Unit	Unit Rate	Quantity	Annual Cost $	Comment
Excavator & truck operations	$/t ore	4.63	120,000	555,244	dry stacking sand
Dozer operation	$/t ore	2.03	120,000	243,282	clearing & rehab
Total	$/t ore	6.65	120,000	798,526	

FINANCIAL RESULTS

Table 19 provides and annual summary of the key physical and financial parameters for the project. The cash flow was reported before taxation as the Company has not finalised its tax filings for the previous year and there are tax losses that can be applied to future earnings.

Table 19 – Annual Financial Summary

Parameter	Unit	Total	FY 1	FY 2	FY 3
PHYSICAL					
Ore Processed	kt	181	4	97	81
Grade	g/t Au	9.3	6.8	8.4	10.5
Contained Au	koz	54	0.8	26.3	30
Process Recovery	%	92%	92%	92%	92%
Recovered Au	koz	50	0.7	24.2	27
FINANCIAL					
Gross Revenue	**$m**	**150**	**2**	**72**	**75**
Royalties	$m	(6)	(0)	(3)	(3)
Operating Expense	$m	(75)	(3)	(38)	(34)
Sustaining Capital	$m	(10)	(2)	(6)	(3)
Capital (pre-production)	$m	(17)	(17)	0	0
Pre-tax cashflow	**$m**	**41**	**(20)**	**25**	**36**

The pre-tax free cash flow was estimated to be $41 million for the life of project. The Net Present Value of the project, calculated at a discount rate of 7%, (NPV7%) was estimated to be $33.3 million. This equates to an Internal Rate of Return (IRR) of 110%.

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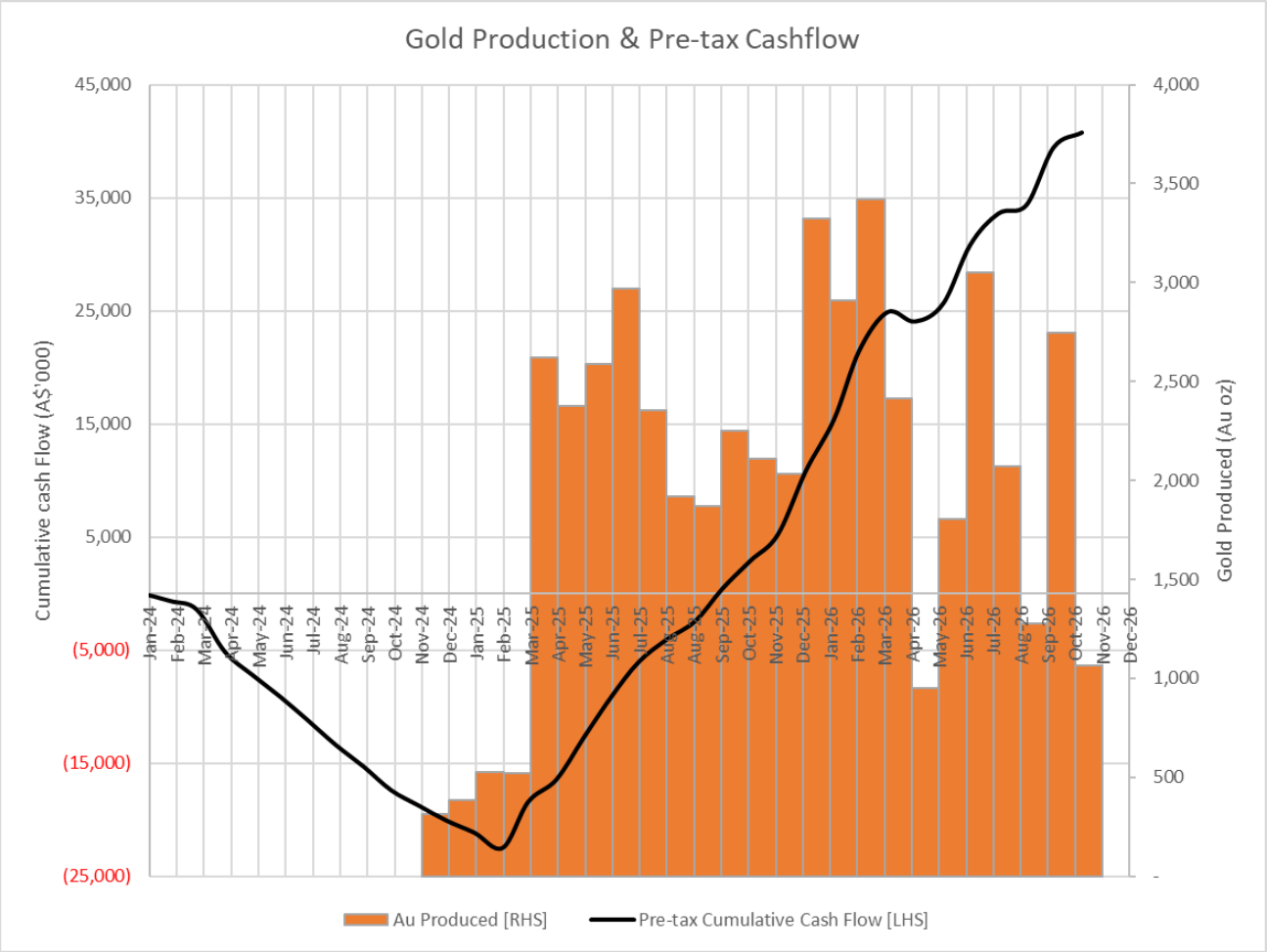
Figure 27 illustrates cumulative cashflow.

Figure 27 – Cashflow and gold production by month



SENSITIVITY ANALYSIS

Analysis was completed to understand the project's sensitivity to the gold price. Table and Table sumarise the impact of a 10% and 20% reduction in gold price on the Project's pre-tax cashflow.

Table 22 – 10% reduction in gold price (A$2,700/oz)

Item	Unit	Total	YEAR 1	YEAR 2	YEAR 3
PHYSICAL					
Ore Processed	kt	181	4	97	81
Grade	g/t	9.29	6.8	8.4	10.5
Contained Au	Au koz	54.2	0.8	26.3	27.2
Process Recovery		92%	92%	92%	92%
Recovered Au		50	0.7	24.2	25.0
FINANCIAL					
Gross Revenue	$m	135	2	65	68
Royalties	$m	(5)	(0)	(3)	(3)
Operating Expense	$m	(75)	(3)	(38)	(34)
Sustaining Capital	$m	(10)	(2)	(6)	(3)
Capital (pre-production)	$m	(17)	(17)	0	0
Pre-tax cashflow	$m	26	(20)	18	28

Table 23- minus 20% reduction in gold price (A$2,400/oz)

Item	Unit	Total	YEAR 1	YEAR 2
PHYSICAL				
Ore Processed	kt	181	4	97
Grade	g/t	9.29	6.8	8.4
Contained Au	Au koz	54.2	0.8	26.3
Process Recovery		92%	92%	92%
Recovered Au		50	0.7	24.2
FINANCIAL				
Gross Revenue	$m	120	2	58
Royalties	$m	(5)	(0)	(2)
Operating Expense	$m	(75)	(3)	(38)
Sustaining Capital	$m	(10)	(2)	(6)
Capital (pre-production)	$m	(17)	(17)	0
Pre-tax cashflow	$m	12	(21)	11

A 10% reduction in gold price reduced the pre-tax cash flow to $26 million while a 20% reduction resulted in a pre-tax cashflow of $12 million.

PERSONNEL

Vertex has an existing crew processing low grade stockpiles. This team will transition into the gold plant operators. Hill End and region also has the potential to provide up to a dozen further roles in Administration, Mining and processing.

Vertex plans to operate the mine with a 3-panel roster, with employees working two weeks on and one week off. Additionally, crews will predominantly work a 10 hour shift with allowance of 2 hours travel time per day. The Company plans to operate a daily bus service from Bathurst. This is a significant allowance with the aim of attracting skilled people to the region. Vertex will prioritise the employment of local people before seeking employees from further away.

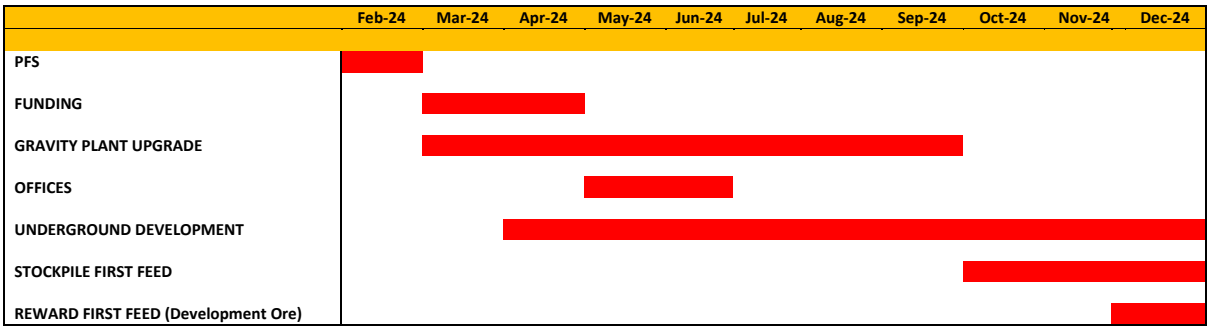
The total labour requirement was estimated to be 70 full-time employees, as detailed in Table .

Table 24 – Estimate of Project Labour

Area Employed	Salaried	Wages	Total
Administration	6		6
Technical Services	9	3	12
Mining	7	33	40
Processing	1	11	12
Total	23	47	70

TIMELINE

Figure 28 - Timeline



PERMITTING AND APPROVALS

Summary of Titles Granted under the Mining Act 1992 (NSW)

Vertex Minerals Limited ("Vertex") currently holds the below listed Mining Leases within the State of New South Wales as part of their Hill End Gold Project:

Table 25 – Tenement list and status

Tenement	Project	Registered Holder/ Applicant	Grant Date	Expiry Date	Status	Area	Annual Rental Fee	Annual Administrative Levy	Security Required	Security Held
GL 5846	Switchback	Vertex Minerals Limited	15/02/1968	07/12/2024	Current (Renewal Pending)	2.044 ha	$100	$450.91	$496,000	$496,000
ML 49	Consolidated West	Vertex Minerals Limited	30/07/1975	07/12/2024	Current (Renewal Pending)	1.618 ha	$100	$450.91	(Group Security)	(Group Security)
ML 50	West Nuggetty Gully	Vertex Minerals Limited	30/07/1975	07/12/2024	Current (Renewal Pending)	3.02 ha	$100	$450.91		
ML 315	South Star	Vertex Minerals Limited	08/12/1976	07/12/2024	Current (Renewal Pending)	6.671 ha	$100	$450.91		
ML 316	South Star	Vertex Minerals Limited	08/12/1976	07/12/2024	Current (Renewal Pending)	8.846 ha	$100	$450.91		
ML 317	South Star	Vertex Minerals Limited	08/12/1976	07/12/2024	Current (Renewal Pending)	7 ha	$100	$450.91		
ML 913	Consolidated - Amalgamated	Vertex Minerals Limited	20/01/1981	19/01/2033	Current	22 ha	$143	$450.91		
ML 914	South Star	Vertex Minerals Limited	20/01/1981	19/01/2033	Current	21.69 ha	$140.99	$450.91		
ML 915	Goldconda	Vertex Minerals Limited	04/02/1981	03/02/2033	Current	13.27 ha	$100	$450.91		
ML 1116	Fosters	Vertex Minerals Limited	28/03/1984	16/10/2024	Current (Renewal Pending)	15.71 ha	$102.12	$450.91		
ML 1541	Patriarch - TSF	Vertex Minerals Limited	17/10/2003	16/10/2024	Current (Renewal Pending)	279.2 ha	$1,814.80	$450.91		
Total: 11							$2,901	$4,960.01	$496,000	$496,000

Summary of Approvals and Permits

An overview of the current approvals granted in respect of the Reward Gold Mine have been provided in Table 26.

Table 26 – Current Approvals

Approval	Relevant Authority	Grant Date	Expiry Date
DA 147/2000	Evans Shire Council (Now Bathurst Regional Council)	27/06/2000	N/A
EDA 2000/0147 (Modification to DA 147/2000)	Bathurst Regional Council	2/01/2008	N/A
EPL 12008	EPA	16/04/2004	N/A
80BL239113	WaterNSW	31/07/2001	30/07/2026

Development Consent No 147/2000 for the Reward Gold Mine was granted by the Evans Shire Council on 27 June 2000 for the purposes of 'Extractive Industry – Underground Gold Mine'.

A modification to Development Consent No. 147/2000 was submitted in late 2007 for the Reward Shaft and raisebore development. Bathurst Regional Council approved the modification in January 2008.

The Reward Gold Mine development is an integrated development (Section 91 of the EP&A Act). It is a development that, as well as requiring a Development Consent also requires one (or more) nominated state government agency approvals or licences. The approvals that are required for the proposed development include:

- Water Act 1912 (NSW) (Section 5) - a Bore Licence was granted on 31 July 2001, numbered 80BL239113 for the Amalgamated Adit discharge allowing 40ML/annum and expires on 30 July 2026.
- Protection of the Environment Operations Act 1997 (NSW) (Sections 43, 47 and 55) – Environment Protection Licence for tailings water discharge. Licence No. 12008, renewed 16 April 2020. ("EPL 12008").
- The Reward Gold Mine is classified as a level 2 mine as it is a non-coal mine and not considered a state significant development.

ENVIRONMENT AND SOCIAL

Values and Vision

Vertex Minerals Limited (VTX) is committed to building legitimate Environmental, Social, Governance (ESG) credentials. We acknowledge the importance of incorporating ESG into our business model for ethical and financial reasons and we know that a strong environmental, social and governance performance is essential for the success and growth of the Company's business and for our community. VTX's primary objective is to deliver

maximum shareholder value through profitable growth and the development of stable and sustainable projects whilst acting lawfully, ethically, and responsibly.

We have commenced ESG reporting as a tangible first step in our ESG journey and published our first baseline reports this year through the global Software-as-a-Service (SaaS) enterprise Social Suite with their 'ESG Go' platform. Through this platform we apply the World Economic Forum's (WEF) framework of ESG metrics and make disclosures based on what it refers to as the four pillars:

- Principles of Governance
- Planet
- People and
- Prosperity

The platform allows us to address, report on and share our disclosures across the 21 themes, which includes but is not limited to: diversity and inclusion, anti-corruption practices, water consumption, and economic contribution data, using the WEF Framework Metrics. This information and analysis inform our internal decision-making and business strategies and it allows investors to see that we are actively engaged in ESG analysis and goal setting, aiming to be a good corporate citizen, responsible environmental steward and that we are led by accountable management.

Environmental

Vertex Minerals Limited (VTX) operates in the Australian mining sector, an industry which is highly regulated. To successfully conduct our exploration and mining projects and activities we must meet the standards and criteria of the NSW Resources Regulator and other government authorities such as the Environmental Protection Agency. Our activities are subject to ongoing assessment, with an obligation to continually prove that we are meeting required standards, conditions, and regulations to achieve and maintain compliance and approvals from the NSW Regulator. Land use, environmental monitoring and rehabilitation are all important considerations in all VTX projects.

The VTX Board aims to ensure that economic, environmental, and social considerations are integrated into our strategy, decision-making, risk and opportunity management, operating policies, processes, and systems. We have made full disclosures (and have begun assessment work where that has not been possible) through Social Suite on all the metrics across 21 themes which are all available on our website. The Environmental disclosures referred to under the 'Planet' metric include TCFD (Taskforce on Climate-Related Financial Disclosures), GHG (Greenhouse Gas Emissions), Land Use and Key Biodiversity Areas and Water Consumption.

Social and Social Returns

As a responsible explorer transitioning to gold producer, VTX acknowledges its role in protecting the natural environment, reducing global greenhouse gas emissions, and improving people's lives now and for generations to come. VTX believes that a strong ESG performance creates shared value for workers, communities, investors, and broader society.

Our ESG reporting aligns with the WEF Framework but also with the United Nations 17 goals to transform our world which it describes as 'Sustainable Development Goals' (SDGs). These goals include but are not limited to: good health and well-being, decent work and economic growth, sustainable cities and communities, reduced inequalities and responsible consumption and production. VTX understands that our operations make an economic contribution to our communities and support our society's progress – we have social responsibilities.

The 'Social' and 'Governance' components of our ESG reporting consists of disclosures under 'People' and 'Prosperity' on the Social Suite platform and these disclosures are contained on our website. They include but are not limited to reporting on: diversity and inclusion, modern slavery, health and safety, plus data on our economic contributions and taxes paid.

Investment in our skilled workforce while also listening to, working within and collaborating with local communities and wider civil society allows us to support and improve local goals and aspirations, improve environmental outcomes and drive our business. We aim to be a responsible producer of gold – one of the critical minerals required to support a sustainable, net-zero future.

SUSTAINABILITY

The Reward Gold Mine at Hill End is one of Australia's most sustainable mining operations.

- NO CYANIDE – Gravity recoverable gold >90%
- RECYCLED WATER – low water consumption
- CLEAN WATER DISCHARGE TO ENVIRONMENT
- LOW ENERGY REQUIREMENTS.
- BENIGN TAILINGS – Potentially reusable sand product.
- NO CHEMICAL PROCESSING.
- COMMUNITY ENGAGED AND CONNECTED - we aim to contribute to the socio-economic advancement of our community associated with our operations and to treat them with dignity and respect.
- Minimal surface impact as production is from the underground mine.
- Gold is liberated at a coarse grind size, which means low energy requirements in comminution.

FUNDING REQUIREMENTS

Project financing for the development of the Project has not yet been secured, which is typical for a PFS stage project. However, Vertex will initiate discussions with several financiers, and will advance these discussions over the coming months.

Potential funding instruments include the following:

- Equity
- Senior – secured project debt finance
- Secured corporate bond
- Pre-paid off take arrangements and other forms of off taker finance: and/or
- Secondary secured (mezzanine) debt

Overall, the Company's Board of Directors considers that, based on the positive PFS, that this project will be a low environmental impact gold project. The project has been de-risked by way of successful trial mining and processing, and there is already significant infrastructure and permits in place.

The Projects economics support a decision to invest, given that the Project is forecast to generate $36M of free cash (pre-tax) over the PFS LOM.

The projected cash flows can support sufficient debt funding of the total construction CAPEX, while meeting typical project debt financing requirements:

- Pre-tax $NPV_{7\%}$ of A$33.3m, a robust IRR of 110% (above typical returns sought by investors of circa 20%) and payback period of 6 months from production and 12 months from start of development
- Total cash draw down of A$19m which includes A$17m in pre-production capital.
- The project is in a Tier- 1 gold mining jurisdiction in NSW Lachlan fold Belt 45km North of Bathurst and 3.5hrs drive west of Sydney.
- The project has significant upside with 34km of strike.
- The Board, and senior management have substantial experience in financing and developing projects in Australia and overseas and have the appropriate mix of skills to manage and direct the progression of the project through funding, construction, commissioning and into operations.
- The company has no debt.
- The company owns 100% of the projects.
- The project is fully permitted on long standing Mining Licences.
- The Company already has a significant asset base.
- ABC Refineries are signed to a gold refining agreement.
- Physical gold can be utilised for loan repayment purposes.
- Vertex is an ethical and sustainable gold producer.

OPPORTUNITIES

Key opportunities identified during the 2023 PFS include, but are not limited to:

- Only 28% of the Inferred Gold Resource at Reward are was included in the PFS. There is significant opportunity to convert the Inferred Resource to greater resource categories with drilling.
- The high-grade exploration target below reward is not included in the PFS, however it can be converted to indicated by limited, cost affective UG diamond drilling.
- Optimise mill throughput to increase gold production.
- Further exploration success along the Hill End Anticline.

RISKS

Economic Assumptions

The Reward Gold Mine project economics are most sensitive to those economic assumptions that affect Project revenues. Gross revenue is only generated from gold sales. A prolonged reduction in the gold price or a substantial strengthening of the AUD has the potential to significantly reduce the Project NPV end free cash flow generation of the Project. The financial model is based on flat USA denominated commodity prices and AUD:USD exchange rate that at the time of study completion represented an approximate discount to spot prices In AUD terms. Multiple factors may impact on the AUD denominated price of saleable products and other assumptions in the financial model.

Mineral Resources and Production Inventory Estimates

Mineral Resource and production inventory estimates are expressions of judgement based on knowledge, experience, and industry practice at the time of the estimate. Estimates which were valid when originally calculated may alter significantly when new information or techniques become available. In addition, by their very nature, MREs are imprecise and depend to some extent on interpretations, which may prove to be inaccurate, in particular the grade or tonnage of payable commodities estimated in the MRE. As further information becomes available through additional drilling, mining or analysis, the estimates are likely to change. This may result in alterations to development and mining plans which may, in turn, adversely affect the Company's operations.

The production inventory and forecast financial information referred to in the PFS comprise Indicated Mineral Resource (75% of contained gold) and Inferred Mineral Resources (25% of contained gold). The production inventory has been scheduled such that approximately 25% of the gold produced over the first 3 years of the project life is represented by Inferred Mineral Resources. The Inferred Mineral Resources included in the production inventory does not have a material effect on the technical or commercial viability of the Project. There is a lower level of geological confidence associated with Inferred Mineral Resources and there is no certainty that further exploration work will result in the determination of Indicated Mineral Resources or that the production inventory will be achieved.

Mining Risks

The operational aspects of development and production as they relate to mining at Hill End are generally considered low risk for an underground operation. Geotechnical and hydrogeology assessments and how those conditions may affect the mining process are considered adequate for this PFS level of Study. Given the mining process has been trialled in 2008 to 2010, Vertex has a good knowledge of the ground conditions.

Underground mining is intended to be undertaken by the company. The company is confident of its ability to run a mining operation effectively, efficiently, and safely, given the underground experience of the Directors and key staff. Vertex is confident that the owner-operator is the optimal choice to achieve the best outcomes for the high-grade resource that comprises the operation. An owner-operator model will be better incentivised to deliver production, manage dilution and provide flexibility around mining priorities.

The mining costs are material in value and are derived from a first principles cost model based on a ground-up build approach considering key physical drivers, volumes and consumption rates, labour rates applied in addition to first principal costs. There is a risk that the costs applied may not reflect market rates, or market rates may change before rates are negotiated into a contract. There is a risk that key physical drivers, volumes, or consumption rates may vary from those used in this estimate.

Metallurgical Risks

Vertex has engaged Gekko Systems to undertake a range of desktop metallurgical reviews and mineralogical analysis basis on the 2008 trial mining and bulk sample work that Vertex has recently completed at its existing plant. Further, the Reward Ore body is a free milling coarse gold ore body with gold hosted in the quartz veins, with little sulphide mineralization in association. Gravity liberation processes achieve recoveries greater than 90%. The simplicity of the processing technology and the coarse particle size required to liberate gold results in low risk around this process. This does not mitigate metallurgical risk associated with processing other ore types or changes to the mineralization style.

Laws, Regulations, Rules, Approvals

The Company's operations will be subject to various Federal, State and local laws and plans, including those relating to mining, development permit and licence requirements, industrial relations, environment, land use, taxation, royalties, water, native title and cultural heritage, mine safety and occupational health. No assurance can be given that new rules and regulations will not be enacted or that existing rules and regulations will not be applied in a manner which could limit or curtail exploration, production, or development.

The Reward Mine sits on a Mining Lease that is permitted to mine, process and deposit tails as at the time of writing the PFS. However, some further licenses will be required to recommence the underground operations including an explosive licence and an approval for the storage of explosives. Also, expansion of mine waste storage facilities will need additional approvals.

Mining operations can be subject to public and political opposition. Opposition may include legal challenges to development permits or approvals, political and public advocacy, electoral strategies, media and public outreach campaigns and protest activity, all which may delay or halt development or expansion.

Operational Risks

The Company's planned operations will be subject to uncertainty with respect to (among other things): ore tonnes, mined grade, ground conditions, metallurgical recovery or unanticipated metallurgical issues, infill resource drilling, the level of experience of the workforce, operational environment, regulatory changes, accidents and other unforeseen circumstances such as unplanned mechanical failure of plant or equipment, or the health and safety of its workforce, storms, floods, bushfires or other natural disasters. Mining operations could also suffer from poor design or poor reliability of equipment, impacts to supply chain, and transport of plant equipment and the workforce to and from site.

Amount of Capital, and Timing, to Commercial Production

Most of the pre-production capital is associated with mine development and to a lesser extent the processing plant construction costs and then general infrastructure. The mine development is expected to take 10 months and the construction and commissioning schedule of the upgraded plant is conservatively assumed to be executed over a 6-month period. A key risk to the pre-production capital expenditure estimate is ensuring the Project engages a capable and experienced EPC contractor when required.

Another key risk is a delay in ramp-up from first production due to the inability to access capable and experienced mining staff, inability to achieve estimated productivity rates or other operational issues which may affect production (including geotechnical, hydrogeology, health, and safety). An increase in the amount of capital to commercial production or a delay in achieving commercial production levels will result in additional funding requirements, and if adequate funding requirements are not available, the cost of the additional funding or dilutionary impacts of equity funding could be significant.

Financing Risks

Vertex is yet to seek to secure financing for the development of the Project. The Company is confident, that it will be able to obtain financing on acceptable terms. Notwithstanding, there is no guarantee that funding will be available or that it will be available on acceptable terms. Financing will be dependent on numerous factors, including the quantum of funding required, equity market sentiment; the share price of Vertex; interest rates;

the cost, availability, and terms of debt; the outcomes of further studies and the outcomes of the approvals process. Obtaining sufficient financing for the development of the Project may result in the dilution of the Company's shareholders in the event that equity financing is required.

Availability of Labour

The resources sector is experiencing limited availability of skilled and professional staff, especially following the lifting of restrictions on travel following the COVID-19 pandemic. Since lifting of these restrictions, the labour market has eased somewhat, however, there remains a risk that suitable and adequately trained and experienced staff cannot be recruited in a timely fashion prior to Project development and commissioning and/or when needed in the future because of normal staff turnover.

Vertex plans to operate the mine with a 3-panel roster, with employees working two weeks on and one week off. Additionally, crews will predominantly work a 10-hour shift with allowance of 2 hours travel time per day. The Company plans to operate a daily bus service from Bathurst. This is a significant allowance with the aim of attracting skilled people to the region. Vertex will prioritise the employment of local people before seeking employees from further away.

The Project's location and amenity, proximal to Bathurst (74km), Mudgee (72km), Orange (123km) and the regional villages of Hill End (2km), Wattle Flat (45km) and Sofala (32km), and the relatively small size of the required workforce are both factors that mitigate and limit these risks.

INFORMATION PROVIDE IN ACCORDANCE WITH ASX LISTING RULE 5.9

Material Assumptions

In accordance with the ASX Listing Rule 5.9.1, the following summary information is provided to assist in understanding the reported estimate of Ore Reserves.

The PFS was completed with the following material assumptions:

- Underground mining operations conducted by owner.
- Ore processing at 100% owned Hill End Gravity Gold plant.
- Project implementation and oversight by management in conjunction with contractors
- Detailed metallurgical test work from samples collected from drilling representing ore domains within the project, and trial mining and processing in 2009 2010. Recoveries of 90% were applied.
- Processing costs based on Benchmarking and first derivative basis.
- Mineable stope shapes were designed, producing stopes with “planned internal dilution” a further dilution factor of 10% and stope mining recovery of 95% were applied to the design stopes, no recovery or dilution factors were applied to the ore drive development.
- All Inferred Resources were excluded from the stope optimisation process in the estimation of Ore Reserves
- An Australian dollar gold price of $3,000 per ounce was applied. NSW state royalties of 4% were subtracted from the gold price as part of the optimisation process.
- Bulk densities were derived from test work.
- A lower cut-off grade of 3.8 g/t was applied.

Criteria for Classification

Indicated Resources have been converted to Probable Ore Reserves subject to mine design physicals and an economic evaluation. No measured material has been reported in the Resources.

Any inferred material contained within the mine plan has been treated as waste for Ore Reserve estimation purposes. All material has been assumed to be treated at the Hill End Gravity Gold processing plant.

Mining

Underground mining costs were sourced from first principals from other similar operations. All other costs including power, diesel, processing, general and administration and royalty calculations, as well as metallurgical recovery are as per the inputs documented in this announcement.

The Reward underground Ore Reserves estimate is based on mining methods, designs, schedule's, cost estimates and modifying factors which have been determined to a PFS level of accuracy (+/- 25%).

Appropriate geotechnical analysis was provided by independent geotechnical consultant Ground Control Engineers.

The Ore Reserve mine plan was generated by running stope optimisation processes on the Resource followed by detailed development and capital infrastructure design.

All material was subjected to an economic evaluation in a detailed cost model underpinned by the PFS analysis.

The assumed gold price for the Ore Reserves was A$3,000/oz.

The Competent Person has sufficient confidence that the Ore Reserve estimate will be financially viable within reasonably expectable range of possible commodity prices.

Processing Method

The processing method is a 110ktpa gravity only gold processing plant. As documented and outlined in this document.

Cut off Grades

Gold cut-off grade parameters for determining underground Ore Reserves were derived from detailed financial analysis. A gold price of A$3000/oz was applied. The final derived cut off grade used for design and analysis are detailed in

Table 27 – Stope cutoff grade

Item	Unit	Quantity
Gold Price	$/oz	3000
Metal recovery & royalty	%	88%
Stope cost	$/t	255.14
Processing Cost	$/t	40.42
G&A	$/t	25.56
Total op cost	$/t	321.12
Cut off grade	g/t Au	3.77

Table 28 – Development cutoff grade

Item	Unit	Quantity
Gold Price	$/oz	3000
Metal recovery & royalty	%	88%
Development cost	$/t	236.37
Processing Cost	$/t	40.42
G&A	$/t	25.56
Total op cost	$/t	302.35
Cut off grade	g/t	3.55

Estimation Methodology

The level of study carried out as part of this Reward gold project Ore Reserve is to a Pre-Feasibility Study level. The relative accuracy of the estimate is reflected in the reporting of the Ore Reserves as per the guidelines regarding modifying factors, study levels and Competent Persons contained in the JORC 2012 Code. The Ore Reserve estimate has only utilised the Indicated portion of this Resource based on the applicable cut-off grades and has applied the modifying factors based on the various dilution parameters determined by the performance of the underground geotechnical work, the applicable mining method and recovery factors, to generate the final diluted and recovered Ore Reserve.

Approvals, and infrastructure Requirements

Mining and processing operations are planned wholly within granted Mining Leases and with an approved Development Application. The Reward mine is located within an operating mining operation. Ground and underground water extraction licenses are in place for the project allowing for the extraction and use of water for mining and processing operations.

This announcement has been approved by the Board of Vertex Minerals Limited.

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About Vertex Minerals Limited

Vertex Minerals Limited (ASX: VTX) is an Australian based gold exploration company developing its advanced Hargraves and Hill End gold projects located in the highly prospective Eastern Lachlan Fold Belt of Central West NSW. Other Company assets include the Pride of Elvire gold project and Taylors Rock gold/nickel/lithium project both located in the Eastern Goldfields of WA. The focus of Vertex Minerals is to advance the commercial production of gold from its NSW projects embracing an ethical and environmentally sustainable approach:

- **Gravity Separation**: The deportment of gold at the Hill End Project allows high recovery to a concentrate produced using gravity separation techniques.
- **Direct Smelting**: The use of direct smelting of a gold concentrate that eliminates the need to use cyanide as a solvent.
- **Contrast in Density**: These separation techniques take advantage of the contrast in density of gold (ρ=19.3) relative to quartz (ρ=2.65).
- **Renewable Energy Potential**: The unique landscape and infrastructure makes Hill End ideal for the establishment of renewable sources of power.
- **Benign Tailings**: The tailings will essentially be quartz with little to no sulphide minerals.

Hargraves Gold Project (NSW)

- Hargraves Gold project is located approximately 2 5 km south of the town of Mudgee.
- The goldfield is 4 x 10 km with numerous mineralised structures with little modern exploration.
- An updated mineral resource in accordance with JORC 2012 Code was completed by SRK Consulting (Australasia) Pty Ltd (SRK) – total of **2.3Mt at 2.38g/t Au for 177koz Au.**

Hill End Gold Project (NSW)

- Consists of 10 mining leases and three Exploration Licences located in the core of the Hill End Trough on the eastern Lachlan Fold Belt.
- 14km of continuous gold lode with gold recovery rate to gravity at +90%**.**

Pride of Elvire Gold Project (WA)

- Tenements surround the Mt. Elvire homestead approximately 210km north of Southern Cross in Western Australia
- The project has seen historical drilling with encouraging gold results achieved.

Taylors Rock Project (WA)

- Located 80km WSW of Norseman in the Southern Goldfields region of Western Australia.
- The project has both Gold Lithium and Nickel potential, interesting historical intercepts have recorded encouraging mineralisation.

MINERAL RESOURCE STATEMENT

The resource estimates are classified in accordance with the Australasian Code for Reporting of Identified Mineral Resources and Ore Reserves (JORC, 2012). The Reward estimate was completed by Andrew Hawker of HGS Australia. Mr Hawker has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Hawker consents to the inclusion in the report of the matters based on his information in the form and context in which it appears. The resource is classified as Inferred. The classification was considered appropriate based on drill hole spacing, sample intervals, geological interpretation and representativeness of all available assay and density data. The classification reflects the low confidence in short range grade estimations in the model.

JORC Code, 2012 Edition – Table 1 report template

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.*	• Diamond drilling – Variable sample length depending on vein thickness. Quartz veining was half-cored by diamond saw except where veining was isolated and narrow. Core cut down long axis with same relative portion of sampled for each interval. Routinely a few centimetres of wall rock around the vein(s) were included in the sample to ensure that the vein footwall and hanging wall were left intact. Sampling of wall rock carried out adjacent to high grade intervals to test for peripheral mineralization with minimal values returned. • Reverse Circulation Drilling – Samples collected over 1m intervals via a cyclone and split to 3kg samples for submission to the laboratory. The only RC holes that intercepted the mineralised domains interpreted in this estimate have diamond core tails through the mineralised intervals. • Face Sampling - Face samples were approximately 8kgs of representative vein material taken by a geologist from the face. Only quartz vein material was sampled, with two or more samples collected if two or more veins are present. The distance between faces is approximately 1.75m and generally every second face was sampled giving approximately 3.5m sample spacing or rarely a 5.4m sample spacing
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).*	• Diamond Drilling – Surface diamond drill holes were either NQ3 or HQ3 in size whereas underground drill holes were LTK48. Core was oriented using the Ballmark method. • Reverse Circulation Drilling – RC holes were generally 130mm diameter face sampling bits with diamond core tails through mineralized zones.

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.*	• Diamond Drilling - Core recovery (total core recovery) averaged >99% and the average RQD was 75%. • Reverse Circulation Drilling – Bag containing the 1m sample intervals were weighed prior to sub-sampling. No RC intervals intercepted mineralisation therefore recovery not an issue. • There is no apparent relationship between sample recovery and grade.
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	• Core was laid out in an angle iron with a base of hole line marked for core orientation. All artificial core breaks were marked by red chinagraph crosses. The core also had metre marks, tray and hole numbers marked in chinagraph pencil prior to digital photography. Geotechnical logging was completed with recovery, rock quality designation (RQD), fracture frequency and orientation quality digitally recorded in Excel spreadsheets. Core was logged for geological and geotechnical parameters, with data collected digitally and transferred directly to the database. Holes were logged in detail for alteration, lithology, structure, vein style and mineralisation by geologists with data being plotted and interpreted on section during drilling. High quality digital photographs are available for all recent core. • Reverse Circulation Drilling – RC holes logged for lithology, colour, structure, alteration, mineralisation, weathering & oxidation, and vein quartz characteristics. As field staff sampled each hole the following information was recorded: Hole Name, Sample Name, Interval, Sample date, sampler name(s), Sample Mass, and sample moisture. This data was subsequently digitally recorded in Excel spreadsheets.
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*	• Diamond Drilling - Core was cut down the structural long axis and the same relative portion of half core was always sampled. Sample intervals, true vein thickness, angle of vein to core axis and vein composition were recorded. For screen fire assays each core sample was submitted to the laboratory, weighed, dried, and then pulverised in its entirety in an LM2 to a P85 of -75 microns. For Leachwell digestion methods sample protocol involved drill core samples of approximately 1kg weighed, dried, crushed and pulverised in an LM2 (removable-bowl

Criteria	JORC Code explanation	Commentary
	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.*	pulveriser) to 85% passing -75 micron. • Reverse Circulation Drilling - RC drilling: dust samples were collected in a side-mounted cyclone and dumped into large plastic bags annotated with the Hole Number and the interval depth. The bags were stacked in order at each site. A wet sample was frequently encountered at the water table. In all cases the water was able to be controlled and only a few samples were damp in the entire program. This is probably due to free draining old workings below the area of RC drilling. After weighing on a floor scale, each sample was carefully passed through a cradle riffle splitter by 2 field assistants sufficient to produce a ~3kg sample for dispatch to the laboratory. • Sample sizes are appropriate for the grain size of the material being sampled. • No systematic collection of field duplicate or second half sampling was recorded.
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.* • *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.*	• Prior to January 2007 all HEGL core samples were analysed by the screen fire assay technique at the ALS Chemex Laboratory in Orange, NSW. Each core sample was submitted to the laboratory, weighed, dried, and then pulverised in its entirety in an LM2 to a P85 of -75 microns. The entire sample was weighed and wet screened using -75 micron disposable nylon screen. The +75 micron fraction was dried in aluminium trays, weighed and fire assayed to extinction. The -75 micron fraction was collected using flocculant, the liquor then decanted and the fines sample dried in an oven. This was homogenised in the LM2, weighed and fire assayed in duplicate using a 50 g charge. The assays for the -75 micron fraction were averaged and a weighted average is calculated with the +75 micron fraction. • In January 2007, drill core samples entered the production stream at SGS Labs-Townsville and were assayed for gold by accelerated cyanide leach using “Leachwell” reagent with fire assay finish. Sample protocol involved drill core samples of approximately 1kg weighed, dried, crushed and pulverised in an LM2 (removable-bowl pulveriser) to 85% passing -75 micron followed by a quartz flush. Both quartz flush and the sample were inserted in a Leachwell bottle filled with water and a predetermined number of Leachwell tablets. The containers were rolled for 24 hours whereupon the liquor was

Criteria	JORC Code explanation	Commentary
		homogenous and a subsample is extracted for fire assay. For assays greater than 10g/t, bottle tails were washed filtered and fire assayed. For assays greater than 50g/t, bottle tails were washed filtered and screen fire assayed. This additional protocol ensured coarse gold that may not have been dissolved in the accelerated cyanide leach process was captured. • For HEGL, Reverse Circulation drilling produced 1 metre samples which initially were all submitted for fire assay with any intervals returning elevated gold being re-assayed by screen fire assay. Post-December 2005, RC samples containing quartz were assayed by screen fire assay. After January 2007 RC samples were assayed by Leachwell methods. • Assay techniques are considered total and appropriate for the mineralisation style. • There is no documentation of the systematic collection of field duplicates or use of Certified Reference Material during the various drilling and sampling programs to monitor the precision and accuracy of the assay results. Instead, previous companies relied on the quality control procedures of the laboratory undertaking the sample assays to verify accuracy and precision. Each sample assayed by screen fire assay method had a duplicate 50g firing from the -75 micron fraction. The ALS Chemex QC protocol required that each batch of 50 samples analysed included a reagent blank, 3 replicate determinations and 2 standard materials [Certified Reference Material]. Samples exhibiting anomalous values (high or low) were routinely analysed using either the original pulp or a second split. All routine replicate analyses were reported to the client. During the analytical sample preparation stage, crushing and grinding equipment was flushed with barren quartz material between each sample. The quartz flush sample was stored, which could later be analysed to test for contamination or “loss of grade”. • Review of results of the lab’s internal QAQC results, indicate an acceptable level of accuracy and precision has been established for the drilling results. • Previous reporting on internal laboratory accuracy and precision has

Criteria	JORC Code explanation	Commentary
		not raised any significant issues. • The lack of QC at the sample collection stage is not considered to be a significant problem with the data from the deposit, as reconciliation of mined grades to model grades during trial production were within acceptable tolerances for an area of Paxtons vein mined and processed in 2008. Comparison of the estimated Mineral Resource and mill production to the end of June 2009 revealed a gold content reconciliation of 104%. .
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 drilling database was validated for overlapping sample intervals, compatibility of hole depths between database tables as well as collar elevations compared to surface surveys and visual checks of drill hole traces in Surpac. No issues were found. • There are a number of drill holes that have intercepted mineralisation within relatively close proximity to each other and these drill holes have been investigated. Holes located less than 10m apart were assessed and found to have satisfactory levels of similarity and acceptable to be used in Resource estimation.
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 majority of surface drill holes were surveyed using differential GPS and underground holes surveyed by underground total station methods. • Underground sample locations were located using a tape from the nearest underground survey station which were generally less than 20m apart. • Holes paths were surveyed using a downhole gyro or an Eastman single shot down-hole camera at 30 metres (or at the end of reverse circulation pre-collars) and then every 50 metres to the end of holes. • The level of accuracy for drill hole locations is considered appropriate for Resource estimation purposes. • This Resource estimate was undertaken using Zone 55 of the MGA94 grid coordinate system. • A reasonably detailed surface topographic survey was supplied. This Resource estimate is not impacted by surface topography as the uppermost extents of the mineralised domains occur between 60m and 100m below the surface.

Criteria	JORC Code explanation	Commentary
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.*	• Drill hole intercept spacing averages around 10m to 40m along strike and around 10m to 20m in the dip direction. Underground drill fans have resulted in intercepts as close as 2m apart in the dip direction. Down hole sampling intervals vary from 10cm to 5.25m with an average of 0.5m. • The data spacing and distribution is sufficient to establish grade continuity appropriate for the Mineral Resource estimation procedures and classifications applied. • No sample compositing was carried out prior to analysis.
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.*	• Holes were drilled in an orientation to ensure sampling was undertaken, as close as possible, orthogonal to the strike and dip of the mineralised vein packages. This orientation achieves the least biased sample interval.
Sample security	• *The measures taken to ensure sample security.*	• All samples were collected and sub-sampled on site by company staff. Samples were submitted to the external laboratory using standard paperwork and delivered by company staff.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• Review of QAQC data by Snowden (2006) showed moderate to high variability in laboratory duplicate data, mainly in the lower grades (<0.1g/t), but would not have a major impact on the global grade of the resource. • HEG personnel undertook audits of the ALS laboratory in Orange and the SGS laboratories in West Wyalong and Townsville with no issues discovered that may have a negative impact on sample preparation or analysis.

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 project is located within granted Exploration Licence EL5868 Mining leases ML1541, ML1116, ML315, ML316, ML317, ML49, ML50, ML913, ML914, ML915 and GL5846 with the earliest expiry date of 19 January 2033. The leases are held by Vertex Minerals Pty Ltd. • First Tiffany Resources Corporation is registered as having a 15% free carried interest in EL5868. • The site is covered by EPL 12008, scheduled activity is mining for minerals.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Modern exploration of the Hill End goldfield has been carried out by various companies since the early 1980's using surface and underground mapping and sampling, geophysical investigations, diamond and reverse circulation drilling. Previous exploration appears to have been performed to industry standards.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• Mineralisation at the Reward deposit occurs within a series of bedding parallel quartz veins occurring along the limbs of the Hill End Anticline which is located in the mid-Silurian to mid-Devonian Hill End Trough containing sedimentary and volcanic rocks. The deposit is best described as a brittle, thrust-dominated, competency-controlled orogenic gold low sulphide system developed post ductile deformation.

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*
	  ○ *down hole length and interception depth*
	  ○ *hole length.*
	• *If the exclusion of this information is justified on the basis that the*
		• There are approximately 3,800 separate drill holes and face sample locations used in the estimate and tabulation of the information would be cumbersome. A summary of all relevant drill hole and face sample information in this report is considered not to be material to the understanding of the report.

Criteria	JORC Code explanation	Commentary
	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.*	• Exploration results are not the subject of this report. • Mineralised intercepts were composited to a nominal 1m in length for the purpose of statistical analysis and grade estimation. • No metal-equivalent values have been used in reporting (gold only).
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').*	• Exploration results are not the subject of this report. • Holes were drilled to intersect the direction of main grade continuity at approximate right angles.
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.*	• Maps and sections of the drill hole locations, mineralised intercepts and domain interpretations are included in this report.
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• Exploration results are not the subject of this report. • All intersections have been included in the estimation of Mineral Resources.
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.*	• Exploration results are not the subject of this report. • Bulk density measurements and metallurgical test results are discussed in the report. • There are no potentially deleterious elements in the Reward deposit.
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).*	• Further exploration work will include drilling to extend the Mineral Resource along strike as well as up and down dip.

Criteria	JORC Code explanation	Commentary
	• *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• A long section is included in the report showing the potential areas for extension of the Resource (Exploration Target).

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.*
		• Core was logged for geological and geotechnical parameters, with data collected digitally and transferred directly to the database. Holes were logged in detail for alteration, lithology, structure, vein style and mineralisation by geologists with data being plotted and interpreted on section during drilling.
		• The following database validation activities have been carried out:
		  • Ensure compatibility of total hole depth data in the collar and assay drill hole database files.
		  • Check for overlapping sample intervals.
		  • Checking of drill hole locations against the surface topography.
		  • Visual validation in Surpac software.
		• No issues were found with the database.

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.*	• No site visit was completed by the Competent Person due to time and budgetary constraints.
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.* • *The factors affecting continuity both of grade and geology.*	• Confidence in the geological interpretation is high as the deposit has been the subject of over 150 years of investigations and mining. • Data from sampling of diamond drill holes and underground exposures has been used in the estimation of grade. Any unsampled intervals were considered to have practically zero grade. • There are currently no alternative geological interpretations as the current interpretation has been considered the only feasible explanation of mineralisation for some time.

Criteria	JORC Code explanation	Commentary
		• Geological mapping of bedding, vein and fault orientations have been used to guide and constrain Mineral Resource estimation. • The principal gold mineralisation is associated with a series of bedding parallel quartz veins and associated saddle reefs occurring along both limbs and across the axis of the Hill End Anticline. veins are generally confined to slate units interbedded within coarser metasandstone units. Individual veins are narrow (0.05 to 0.3m wide) strike 190° and dip ~60°E. On some sections, up to 8 mineralised veins have been recorded. Minor near-horizontal, laminated (crack-seal), "leader" veins intersect layer-parallel veins. This intersection forms near-horizontal north plunging high-grade ore shoots. Also present are minor steeply dipping, crosscutting "spur" veins and crosscutting faults which kinematic analysis suggests resulted from minor dextral strike-slip movement. Steeply plunging high-grade ore shoots also formed at the intersection of these crosscutting structures and layer-parallel veins.
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.*	• Mineralisation occurs as a series of 14 stacked quartz vein sets that strike approximately north-south and steeply dip to the east. The current defined Mineral Resource extends for 700m along strike, has a horizontal combined width of around 70m and a vertical height of about 250m. The top of the Mineral Resource occurs between 70m and 90m below the surface.
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).*	• Surpac software was used for data validation, analysis, geological and mineralized domain modelling, sample compositing, grade interpolation and reporting. • Grade domains for constraining Resource estimation were interpreted and modelled based on geological logging and assay results contained within the supplied database. Fourteen separate vein sets were modelled. • The resource model is based on statistical and geostatistical investigations generated using 1m composited sample intervals. Assessment of the data suggests requirement for high grade cutting for the input datasets to be used for resource estimation and a value of 120 g/t Au was used.

Criteria	JORC Code explanation	Commentary
	• *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* • *Any assumptions behind modelling of selective mining units.* • *Any assumptions about correlation between variables.* • *Description of how the geological interpretation was used to control the resource estimates.* • *Discussion of basis for using or not using grade cutting or capping.* • *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	• A sub-celled block model was constructed using parent block dimensions of 1m East by 10m North by 5mRL with sub-blocking for the purpose of providing appropriate definition of the grade domain boundaries. • Resource estimation was carried out for gold on the basis of analytical results available up to October 2022. Ordinary Kriging (OK) was selected as an appropriate estimation method based on the quantity and spacing of available data and style of deposit under review. A three-pass strategy was employed to generate the grade estimates. The number of composites for a successful estimate was restricted to a minimum of 6 and a maximum of 12 for the first pass, minimum of 4 and a maximum of 12 for the second pass, minimum of 2 and a maximum of 12 for the third pass reducing to 1 and 12 for the fourth pass. The search axes were created from block optimization studies and align with the average orientation of the mineralised domains while search distances were derived from variographic analyses of the data sets. • Production records are not available for comparison to this estimate. Comparison of the estimated Mineral Resource and mill production to the end of June 2009 revealed a gold content reconciliation of 104%. (HEG Annual Report 2009) • No assumptions of byproduct recovery have been made. • There are no deleterious elements associated with the Reward deposit. Sulphide content is low with an average of 3% logged when present. • Block sizes in the block model were chosen based on average drill spacing and block optimization studies. • Parent block size are comparable to underground mining selective units. • No assumptions about correlation between variables has been made. • Validation of the estimate was completed and included both interactive and statistical review. The validation methods included: -

Criteria	JORC Code explanation	Commentary
		• Visual comparison of the input data against the block model grade in plan and cross section. • Comparison of global statistics. • Swath plots, comparing the composite grade and the estimated grade grouped by intervals in plan and section The model was found to be robust.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• The tonnages are estimated on a dry basis.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• The Mineral Resource has been reported using a lower cut-off grade of 4 g/t Au. This grade reflects the underground mining method and relatively low cost processing method and is consistent with previous estimates.
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	• The deposit has been mined in the past using small scale mining methods which have a high degree of selectivity. Lower cost bulk mining methods are currently being investigated for future mining campaigns.
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	• The mineralogy of the Hill End gold mineralisation is relatively simple with most gold being of high fineness and hosted within quartz veins with low sulphide content. • Preliminary metallurgical testing by Metcon Laboratories Brookvale NSW, indicated that the gold is coarse and free milling. Testing has determined that 98% of the contained gold is liberated and recoverable at a P80 grind size of 670 microns. • The gravity separation plant on site achieved a 95% recovery rate. During 2009 a total of 12,591 tonnes of ore at a grade of 15.9g/t was processed producing 5,871 ounces of gold.
Environmental factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and*	• The free-milling coarse gold and low sulphide content of the ore is unlikely to present any significant mine waste issues.

Criteria	JORC Code explanation	Commentary
	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.	
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.*	• Specific gravity determinations were made from 101 samples of unmineralized and mineralized quartz veins and wall rock submitted to the laboratory. The relative abundance of each rock type was factored into the analysis of the results, resulting in a bulk density of 2.7 t/m3 for all vein sets.

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.*
		• The Resource has been classified as Indicated and Inferred with the key parameters considered during the resource classification being:
		  • Geological knowledge and interpretation.
		  • Deposit style.
		  • Confidence in the sampling and assay data.
		  • The spacing of the exploration drill holes.
		  • Interpolation search pass.
		  • Prospects for eventual economic extraction.
		  • Continuity based on underground sampling
		• The exploration data used for the Reward estimate is robust and appropriate for resource estimation purposes, with the current data spacing sufficient to generate robust mineralisation interpretations. The geology of the project area has been studied in detail over numerous years, providing confidence in the interpretation of mineralisation style. Historical mining records give further confidence in the existence of economic mineralisation.
		• Prospects for eventual economic extraction are high as the deposit is partly developed, the gold is easily beneficiated using simple methods and there is an existing processing plant on site.

Criteria	JORC Code explanation	Commentary
		• There is insufficient confidence in historical drilling results, primarily due to a lack of information regarding quality control results and procedures used during drilling programs, that would allow the classification of a Measured Resource. • The classification reflects the Competent Person's view of the deposit.
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• There have been no audits or reviews of the estimate apart from the previous resource conducted by Groundwork Plus in Dec 2022.
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.* *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• There has been no attempt to apply geostatistical methods to quantify the relative accuracy of the Mineral Resource to within a set of confidence limits. • The Competent Person believes the Mineral Resource estimate provides a good estimate of global tonnes and grade. • No change of support adjustment has been made to the block estimates. • The accuracy and confidence of this Mineral Resource estimate is considered suitable for public reporting by the Competent Person.

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)

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td>Mineral Resource estimate for conversion to Ore Reserves</td><td>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.</td><td>• The Minerals Resource completed by HGS Australia (HGS) in June 2023, with the following physicals:
<table><tr><th>Classification</th><th>Cut-off</th><th>Tonnes</th><th>Au (g/t)</th><th>Ounces</th></tr><tr><td>Indicated</td><td>4</td><td>141,000</td><td>15.54</td><td>70,500</td></tr><tr><td>Inferred</td><td>4</td><td>278,000</td><td>17.28</td><td>154,700</td></tr><tr><td>Total</td><td>4</td><td>419,000</td><td>16.72</td><td>225,200</td></tr></table>• The Mineral Resources estimates reported for the Reward deposit are inclusive of the Ore Reserves.</td></tr>
<tr><td>Site visits</td><td>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.</td><td>• Cameron Tucker of Ground Control Engineering has undertaken two site visits, on 5 and 6 of July 2023 and 2 to 6 of October 2023.
Nigel Grigg and Ben Wraith of Gekko Systems have undertaken site visits from 12 to 14 July 2023 and on 16 September 2023 respectively.
Rebecca Wilson is a full-time employee of Vertex Minerals primarily managing the Company’s environmental responsibilities. Rebecca is site based.
Roger Jackson, Tully Richards, and Declan Franzmann are Directors of Vertex Minerals, and are regularly at site.</td></tr>
<tr><td>Study status</td><td>The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.</td><td>• The current mine planning study work completed for the as part of the Reward Underground PFS comprised detailed mine designs and mining schedules that consider likely underground mining conditions for the Style of deposit;</td></tr>
</table>

Criteria	JORC Code explanation	Commentary
	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.	application of industry current contract mining rates for underground mining works; mine owner costs considering regional cost data; • The study demonstrates that the mine plans are technically achievable and economically viable at the time of reporting. The mine plan involves the application of conventional mining methods and technologies widely utilised in the Australia. • Modifying factors considered in the underground mine planning process included mining method selection, minimum mining width, mining dilution and ore loss, geotechnical stability criteria, filling requirements, and practical mining considerations, for example, materials handling and ventilation.
Cut-off parameters	*The basis of the cut-off grade(s) or quality parameters applied.*	• The Ore Reserves are reported as material contained within stope designs, a cut off grade of 5.0g/t was used to determine proposed stopes. Cut off grades were developed from first principles using contractor rates from a comparable project in Australia • Gold price; • Achievable gold recovery from ore processing; • Mining costs were estimated from first principles and compared to current mining contractor rates. • Expected ore processing costs; and Royalties • A development cut off grade of 3.8g/t was applied
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.*	• Detailed mine designs were undertaken in the DESWYK mining software package, incorporating all available geotechnical and practical considerations. • The Reward deposit comprises of several converging parallel lodes with low to no grade mineralisation between, in most cases this dilution was taken as part of the stoping block. Minimum stope width of 2m was used in designs. • Bottom up, long hole stoping was applied on a floor to floor level interval of 15m. Geotechnical guidance recommended 20m strike length with 5m pillar separating stope voids. The stope sequence required the use of waste rock backfill. • Mining Dilution of 10% was applied to all stope ore. • Mining Recovery of 95% was applied to all stopes to account for ore in the stope shape that could not be extracted. Mining recoveries of 100% were applied to all development with the expectations that the development heading would be bogged clean. • Minimum Mining Width of the stoping block modelled was 2m and minimum development width of 3.5m was applied • Mineralised waste was included in the geological model between the primary, high

Criteria	JORC Code explanation	Commentary
	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.*	grade lenses. Where the indicated material within a designed stope can carry contained mineralised waste (planned internal dilution) these stopes have been included in the mining schedule and financial model. • The Probable Ore Reserve was established by ignoring any Inferred Mineral Resource contained within the stopes.
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.* *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?*	• All Reward ore will be processed at the Hill End Gravity gold plant. The plant consists of a crushing circuit, sizing circuit and a gravity circuit. Gold is recovered from a centrifuge. Wilfley tabling and Smelting are conducted in a secure gold room. The tailings from the process are pumped to a paddock type tailings storage facility. • The technology associated with processing of Reward ore is currently in operation and is based on industry standard practices. • Mine production and cash flow estimates are based on a metallurgical recovery of 92%, which is supported by historical performance of Reward trial mining during 2009 to 2010, with existing plant achieving a recovery of >92% • No deleterious elements are extracted. • No minerals have been defined by a specification.
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.*	• The Reward Underground Gold Mine currently held to an existing Mining Licence, which is fully permitted.

Criteria	JORC Code explanation	Commentary
		• All existing waste rock classifications and waste dump footprints will remain unchanged with minimal mining footprint required for the underground surface infrastructure which will be placed on existing disturbed ground. • Current external reporting is recorded and reported in the Annual Environmental Report submitted to NSW Department of Mines as part of existing open pit closure reporting requirements.
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.*	• External infrastructure requirements for the project are deemed minimal due to the proximity to Hill End township and the existing infrastructure from trial mining. Area onsite is available for additional site infrastructure, utilising the freehold land owned by Vertex. • Power has been priced through use of gensets, water has been assumed that it is available onsite. Personnel will be residential however allowance has been made for key positions to be filled by Bus in Bus out of Bathurst within the township, ore processed will be at the Hill End Gravity Gold plant.
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 source of exchange rates used in the study.* *Derivation of transportation charges.* *The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.* *The allowances made for royalties payable, both Government and private.*	• Capital costs have been estimated from first principals or taken manufacturer quotes and compared to similar projects in Australia. • Operating costs have been estimated from first principals and compared to similar projects within Australia. • No deleterious elements were considered. • All revenue and cost calculations have been completed using Australian Dollars, hence application of an exchange rate has not been required. • State royalty factor of 4% has been applied to all gold extracted. • A 7% discount rate has been applied. • Engineering and cost estimations have been completed to a +/-30% level of accuracy, consistent with a study of this nature.
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.*	• Ore production and gold recovery estimates for revenue calculations were based on detailed mine designs, mine schedules, mining factors and cost estimates for mining and processing.
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 customer and competitor analysis along with the identification of likely market windows for the product.*	• There is a transparent quoted market for the sale of gold. • No industrial minerals have been considered.

Criteria	JORC Code explanation	Commentary
	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.*	
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 Reward Ore Reserve is based on a first principals estimate of mining costs, current processing costs and estimated mine owner costs.
Social	*The status of agreements with key stakeholders and matters leading to social licence to operate.*	• A social license to operate is underpinned by the excellent relationship that the Company has built, over many years, with the local community, indigenous representatives, pastoralist, City of Bathurst and government departments. • Given the extensive historic mining operations in and around Hill End and the historical role of mining in this area and the pre-existing Reward underground mine at Hill End, it is not expected to have any additional effects on the local community.
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.*	• There are no likely identified naturally occurring risks that may impact the Project
Classification	*The basis for the classification of the Ore Reserves into varying confidence categories.*	• The classification of the initial Ore Reserve has been carried out in accordance with the JORC Code 2012. • The Ore Reserve results reflect the Competent Persons view of the deposits.

Criteria	JORC Code explanation	Commentary
	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 Probable Ore Reserve is based on that portion of Indicated Mineral Resource within the mine designs that may be economically extracted and includes allowance for dilution and ore loss.
Audits or reviews	*The results of any audits or reviews of Ore Reserve estimates.*	• The Reward Ore Reserve estimate update was completed by Declan Franzman and Ground Control Engineering and was subject to internal peer review by both GCE and employees of Vertex Minerals Ltd.
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.*	• The Ore Reserve estimate for the Reward underground mine has been prepared within the guidelines of the 2012 JORC Code. • Detailed mine designs and schedules; application of modifying factors for ore loss, dilution and ore processing gold recovery; and subsequent financial analysis has been used to estimate Ore Reserves, which in the opinion of the Competent Persons provide for a good level of confidence