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29 May 2025

## Positive 15-Mile Processing Hub Concept Study

### Highlights

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- **Processing Hub confirmed as preferred development approach:** The integration of the Cochrane Hill Project with the 15-Mile Processing Hub (“**Concept Study**”) (ACE Class 5 Study  $\pm$  50% accuracy) confirms the optimal development is a 3 Mtpa processing plant at 15-Mile (relocated from Touquoy with the substitution to a larger ball mill) with mill feed from Beaver Dam and Cochrane Hill transported by road.
- **Long-Life, Stable, 100kozpa Production Profile:** Estimated average gold production of approximately 106 kozpa over an 11 year mine life (not including Inferred Resources, Exploration Targets or future regional potential).
- **Capital Efficient Outcome:** Estimated low Initial Capital of approximately C\$251 million (A\$279 million) with 3 Mtpa throughput rate (consistent with the Touquoy historical processing rate) achievable through incorporating a new 5.5MW ball mill to replace the existing 3.5MW ball mill.
- **Low AISC:** Estimated LOM All-In Sustaining Costs (“**AISC**”) averages approximately US\$1,197 per ounce (A\$1,898 per ounce) with low strip ratios and high gold recoveries from conventional CIL based on the previous operating experience from Touquoy and overheads shared across the three operations.
- **Strong Project Economics:** Estimated Post-tax NPV<sub>5%</sub> improves to approximately A\$1,084 million and estimated IRR improves to approximately 76% (using a gold price of US\$2,500/oz and exchange rates of C\$1.00 = US\$0.70 and C\$1.00 = A\$1.11).
- **Dramatically Reduced Environmental Disturbance:** The opportunity has been taken to incorporate significant reductions in the surface disturbance at each site, incorporating feedback from previous community engagement:
  - 15-Mile disturbance footprint has been reduced by approximately one-third;
  - Beaver Dam disturbance footprint reduced by more than half and the previous haul road construction disturbance is no longer required;
  - Cochrane Hill disturbance footprint substantially reduced, with the requirement for water extraction removed, no tailings management facility required and the previous proposed road realignment no longer required; and
  - Clean-up of the historical tailings across each deposit will significantly reduce existing baseline ground and surface water impacts and enable the creation of new improved fish habitat.
- **Pre-Feasibility Study (PFS) is underway:** PFS is anticipated to be completed in Q3 Mar FY26.
- **Permitting Environment in Canada and Nova Scotia Improves:** Both Federal and Provincial governments have committed to avoid duplicate Federal and Provincial approvals. Provincial government has added gold to Nova Scotia’s list of ‘Strategic Minerals’ and has created a specialist Large Industrial File Team within the Department of Environment and Climate Change for large projects - these changes are positive.

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St Barbara Limited (“**St Barbara**” or the “**Company**”) (ASX: SBM) is pleased to announce the results of the Concept Study for the integration of Cochrane Hill Project with a 15-Mile Processing Hub. The Concept Study confirms that the optimal development approach is for a 3 Mtpa processing plant at 15-Mile (relocated from Touquoy with the addition of a new 5.5MW ball mill to replace the existing 3.5MW ball mill and one additional leach tank). Mill feed from Beaver Dam and Cochrane Hill would be transported by road to the processing hub commencing during the project’s fourth and sixth operating years respectively.



St Barbara Managing Director and CEO Andrew Strelein said “The detailed work we’ve undertaken through the Concept Study means we can target throughput of 3 Mtpa and stable gold production exceeding 100,000 ounces per year at the combined operations.”

“This is underpinned by the integration of the Cochrane Hill deposit into the existing 15-Mile and Beaver Dam developments, forming the new 15-Mile Processing Hub Project. As part of this reassessment, the Cochrane Hill project has been significantly redesigned to reduce its environmental footprint and community impact, with removal of the need for tailings management and processing facilities at that site. This comprehensive redesign allows Cochrane Hill to contribute to the regional production profile while aligning with environmental and social considerations. Each development is now designed more comprehensively with mine closure and final landform planning in mind.”

“With the addition of Cochrane Hill, the proposed processing facility at 15-Mile was well suited for a throughput expansion from 2.1 Mtpa to 3 Mtpa - still recycling the Touquoy process plant but with substitution of a larger ball mill. The Concept Study estimates that the incorporation of Cochrane Hill will contribute an additional 370koz of production to the 15-Mile Processing Hub, bringing the LOM gold production to an estimated 1.2 million ounces.

“The addition of Cochrane Hill comes at a low anticipated capital cost of C\$91M that occurs in year 6 of the 15-Mile Processing Hub. The low capital costs are a result of a simplified, efficient project design with minimal infrastructure and environmental disturbance. The 15-Mile Processing Hub approach leverages existing public roads to truck mill feed to the 15-Mile processing facility, eliminating the need for a processing plant, tailings management facility and any new roads at Cochrane Hill.”

### **Concept Study Cautionary Statement**

**The Concept Study referred to in this announcement is a preliminary technical and economic study of the potential viability of the 15-Mile Processing Hub incorporating the mining and processing of mill feed from the 15-Mile deposits, the Beaver Dam deposit and the Cochrane Hill deposit with the transportation of the Beaver Dam and Cochrane mill feed by road to a single processing facility. The Concept Study is based on low level technical and economic assessments (+/- 50% accuracy) that is not sufficient to support the estimation of Ore Reserves in respect of the Cochrane Hill component of the technical and economic study work.**

**Further evaluation work, including additional metallurgical testwork and appropriate studies, are required before St Barbara will be in a position to update the Cochrane Hill Ore Reserves, or to provide any assurance of an economic development case in respect of Cochrane Hill.**

**The Production Targets estimated in the Concept Study are based on Proved and Probable Ore Reserves from 15-Mile and Beaver Dam, along with Measured and Indicated Mineral Resources from Cochrane Hill. No Inferred Resources or Exploration Targets have been used in these Production Targets. Approximately 68% of estimated total production from the 15-Mile Processing Hub is expected to be derived from the 15-Mile and Beaver Dam Ore Reserves, with the balance of approximately 32% from Cochrane Hill Mineral Resources.**

**The Mineral Resources and Ore Reserves estimates underpinning the production targets in the Concept Study have been prepared by a competent person in accordance with the requirements of the JORC Code (2012). The Competent Person’s Statement is set out below.**

**The Company believes that it has a reasonable basis for providing the forward-looking statements and the forecast financial information included in this announcement based on the assumptions contemplated in the Concept Study, with the material assumptions being outlined in this announcement. While St Barbara considers all of the material assumptions to be based on reasonable grounds, there is no certainty that they will prove to be correct or that the outcomes indicated by the Concept Study will be achieved.**

**Funding of the estimated Initial Capital amount of \$C251 million will be required before it is possible to achieve the range of outcomes indicated in the Concept Study findings. Options for funding of the project include debt, future Simberi operating cashflows or from additional capital. Investors should note that there is no certainty that St Barbara 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 St Barbara’s existing shares. St Barbara has announced the intention to separate its subsidiaries and their assets and liabilities in Nova Scotia<sup>1</sup> but like all such ‘value realisation’ strategies this could materially reduce St Barbara’s proportionate ownership of the 15-Mile Processing Hub.**

**Given the uncertainties involved, investors should not make any investment decisions based solely on the results of the Concept Study. The Pre-Feasibility Study and Ore Reserve Update for the 15-Mile Processing Hub and for Cochrane Hill specifically are underway and are anticipated to be finalised in Q3 Mar FY26.**

<sup>1</sup> Refer to ASX announcement on 12 February 2025 titled “Intention to separate Atlantic”



## Overview

St Barbara's projects in Nova Scotia, Canada, consist of Touquoy (operations ceased and in reclamation phase with 3 Mtpa processing plant under active care and maintenance), 15-Mile, Beaver Dam and Cochrane Hill projects. The respective locations are shown in Figure 1 below along with the road haulage concepts in Figure 2.

The 15-Mile Project is located approximately 35 kilometres from the Touquoy Project where the processing plant is proposed to be relocated under the optimal development approach outlined in the Concept Study.

The Beaver Dam Project is located approximately 16 kilometres southwest of the 15 Mile Project (approximately 61 kilometres by road).

The Cochrane Hill project is located approximately 40 kilometres northeast of the 15-Mile Project (approximately 71 kilometres by road).

**Figure 1: St Barbara Project Locations in Nova Scotia, Canada**

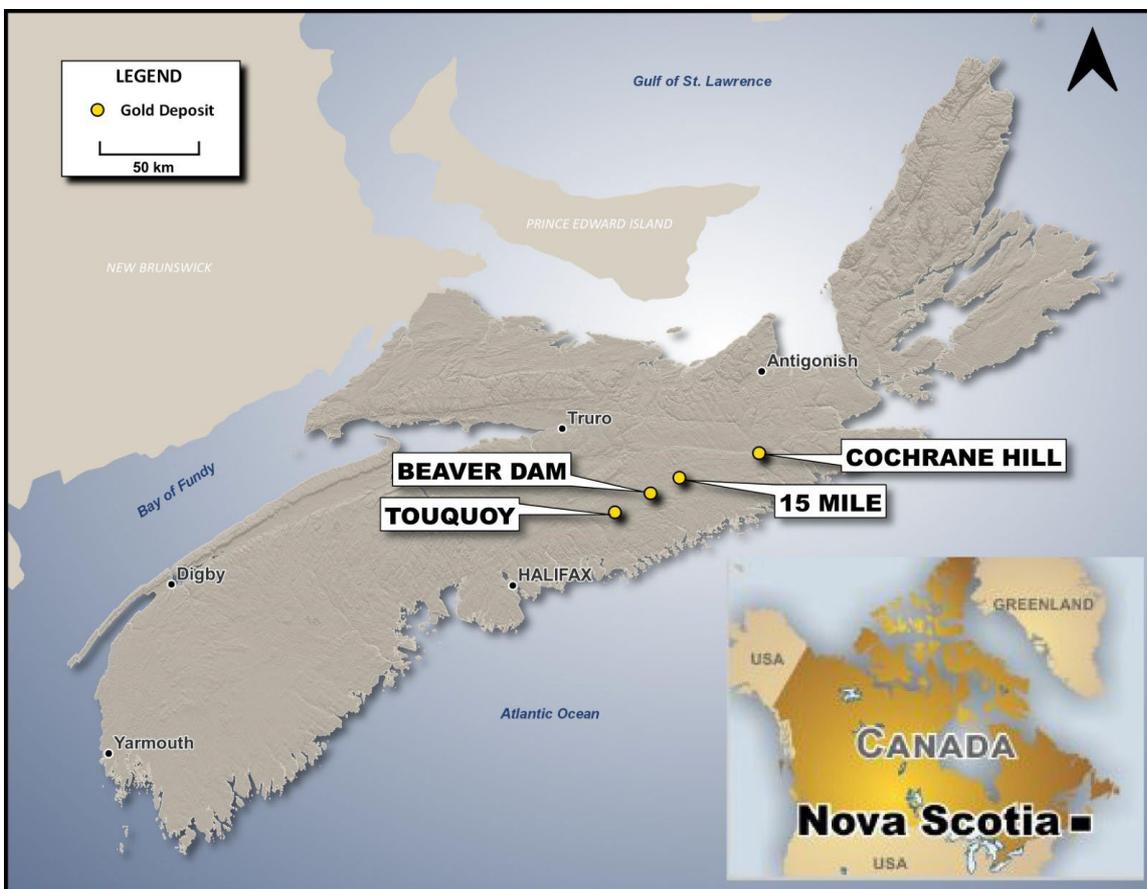




Figure 2: St Barbara Project Locations in Nova Scotia, Canada

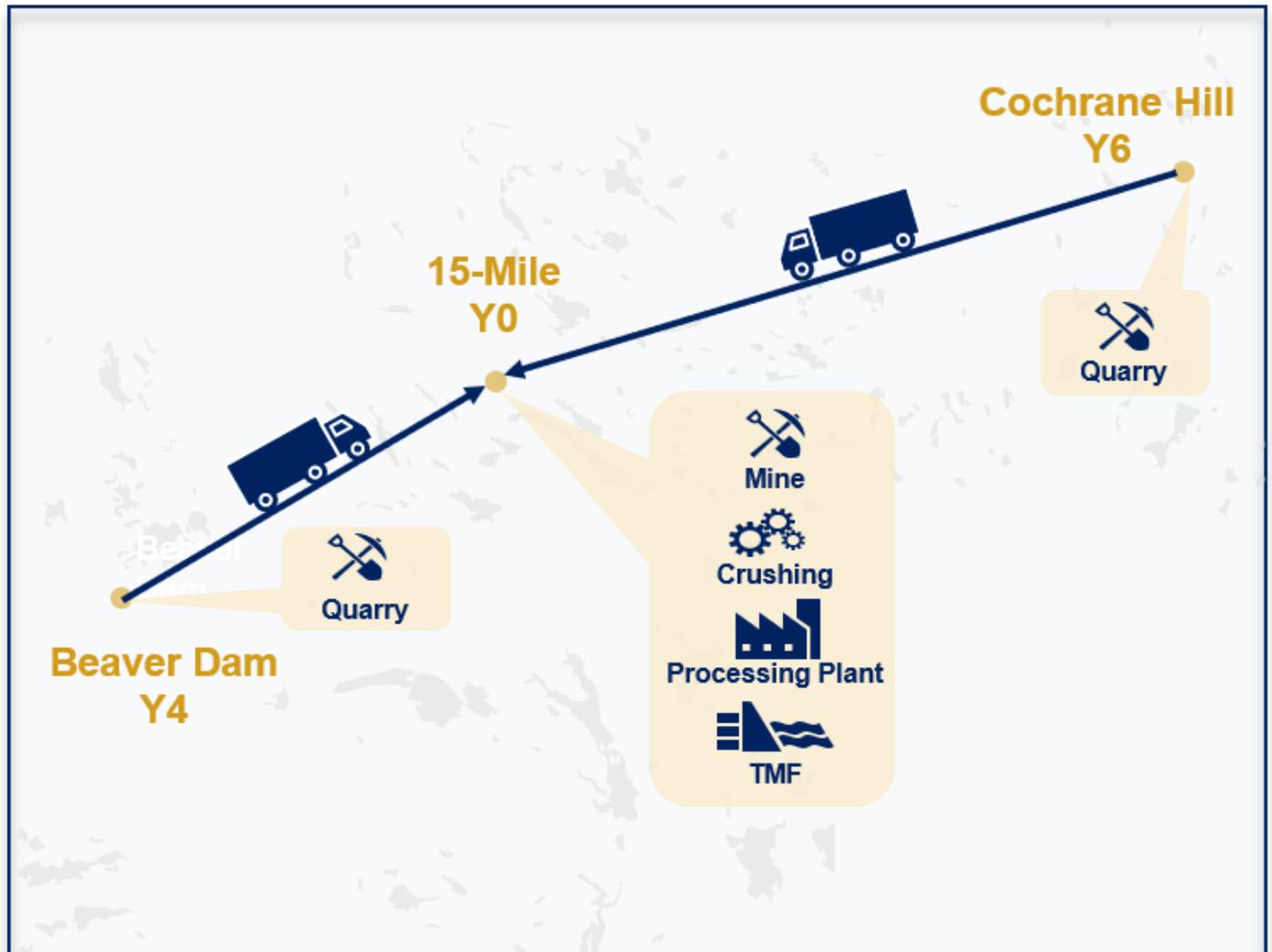




Figure 3 below is the redesigned Cochrane Hill layout. The layout reflects a quarry-style approach with no process plant or tailings facility. The project also incorporates a reduced open pit size to avoid the need to relocate Highway 7 and minimising stockpiles. This design approach removes the need for industrial water withdrawal and improved overall site water management.

**Figure 3: Cochrane Hill Redesign Layout with Minimal Infrastructure**

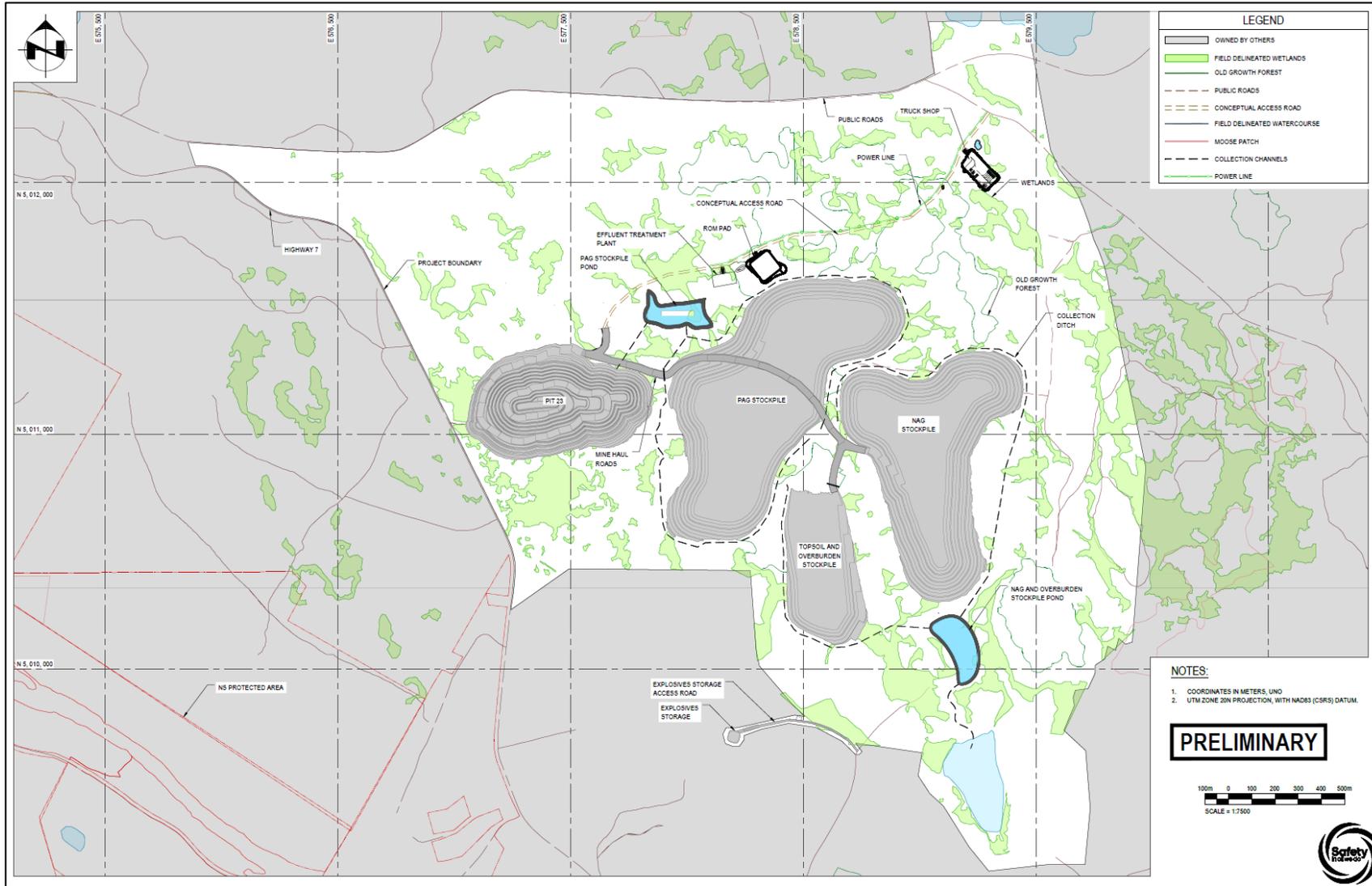




Figure 4 below is the updated 15-Mile project layout including the central processing plant and tailings facility design to incorporate whole-ore feed from Beaver Dam and Cochrane Hill. The design incorporates the progressive backfilling of the vacant open pits to obtain the final land forms and to reduce surface stockpiles and overall disturbance.

**Figure 4: 15-Mile Processing Hub with Redesign Layout and Reduced Disturbance**

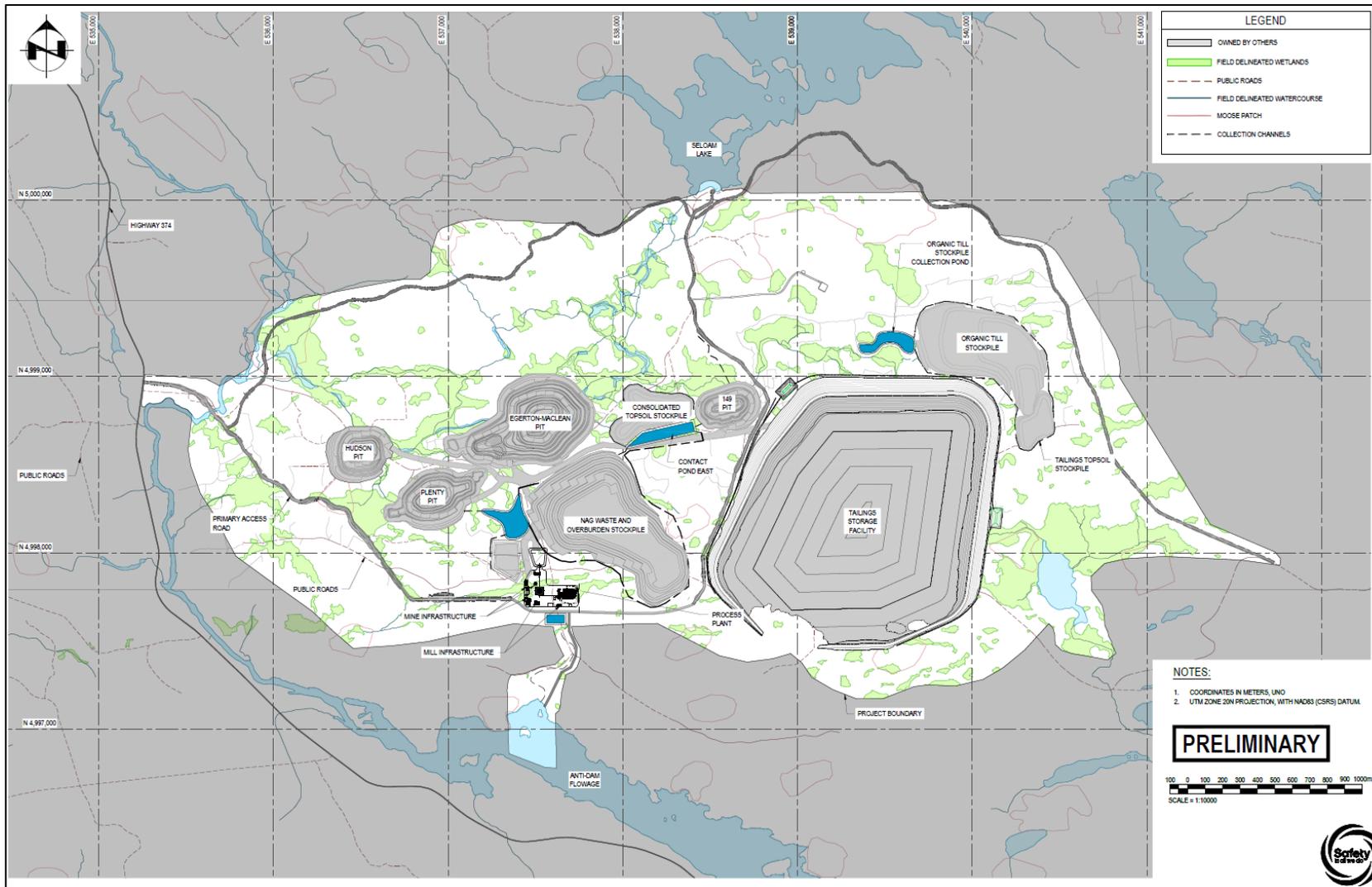
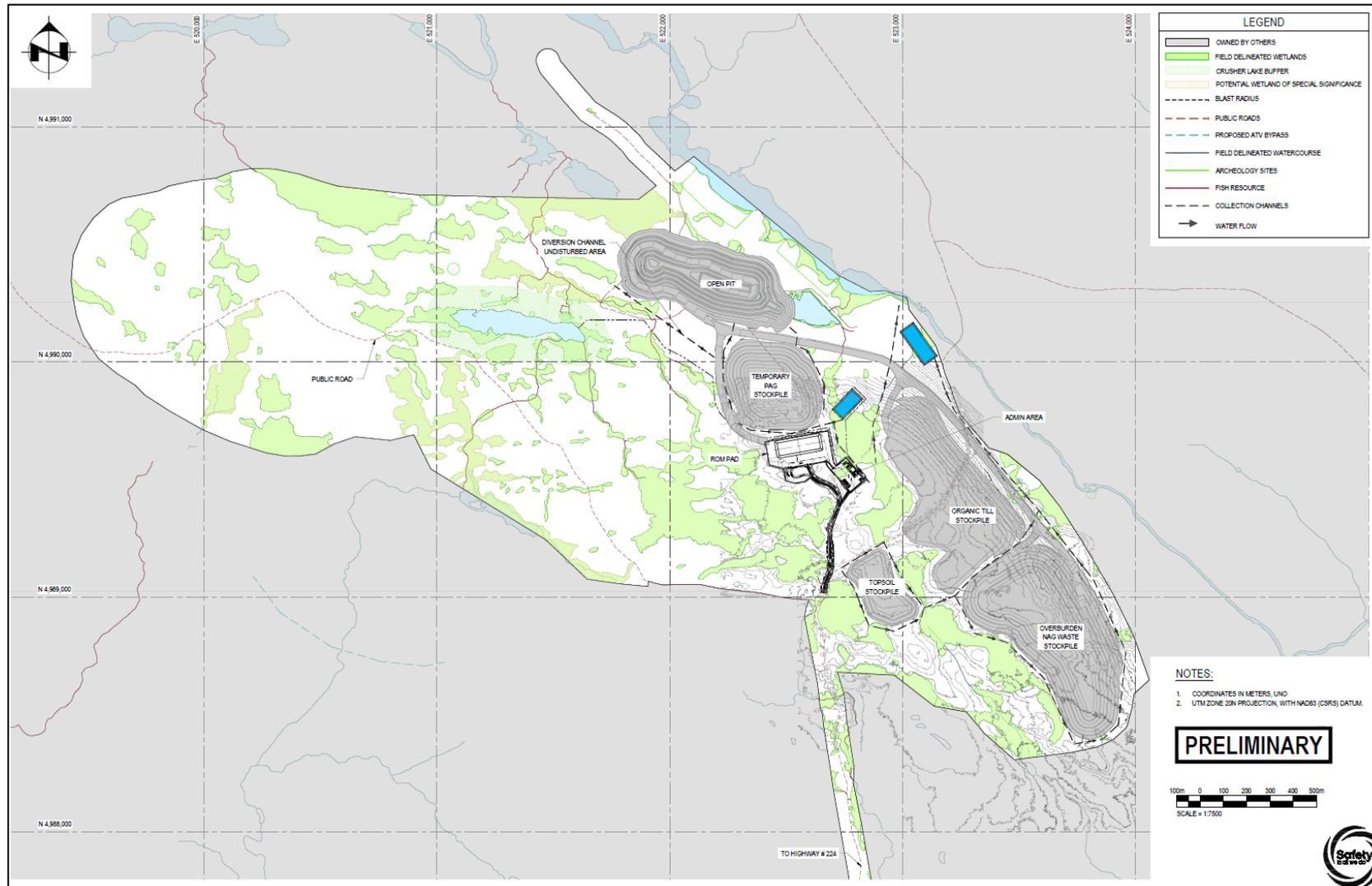




Figure 5 below is the redesigned Beaver Dam layout with a significantly reduced footprint driven by a reduction in the open pit size. The amount of waste material extracted from the open pit has been decreased and the setback from the Killag River has been increased. Quarry style design eliminates the need for processing, tailings and industrial water withdrawals at the site.

**Figure 5: Beaver Dam with Reduced Open Pit and Minimal Infrastructure.**





## Concept Study Project Economics Estimates and Financial Assumptions

The Concept Study was led by Ausenco Engineering Canada Inc. (“**Ausenco**”), an industry leader in cost-effective design and construction. Ausenco was supported by Moose Mountain Technical Services (“**MMTS**”) for mine design aspects of the Concept Study.

A summary of the Concept Study economics is outlined in Tables 1-1 to 1-4 below and shown graphically in Figures 6 and 7 below.

The Concept Study estimates a Pre-Tax NPV<sub>5%</sub> of approximately C\$1,400 million (A\$1,554 million) with a Pre-Tax IRR of approximately 96% at a gold price of US\$2,500 per ounce. The Post-Tax NPV<sub>5%</sub> is estimated to be approximately C\$977 million (A\$1,084 million) with a Post-Tax IRR of approximately 76% at a gold price of US\$2,500 per ounce.

**Table 1-1: Project Economics**

Project Economics	Unit	Life of Mine (LOM) Total or Average
Gold Price	US\$/oz	\$2,500
Exchange Rate	C\$:US\$	0.70
Cash Costs <sup>1</sup>	US\$/oz Au	\$900
All-In Sustaining Costs <sup>2</sup>	US\$/oz Au	\$1,197
Cash Costs <sup>1</sup>	A\$/oz Au	\$1,428
All-In Sustaining Costs <sup>2</sup>	A\$/oz Au	\$1,898
Pre-Tax NPV <sub>5%</sub>	C\$M	\$1,400
Pre-Tax NPV <sub>5%</sub>	A\$M	\$1,554
Pre-Tax IRR	%	96%
Pre-Tax Payback on Initial Capital	years	1.0
Post-Tax NPV <sub>5%</sub>	C\$M	\$977
Post-Tax NPV <sub>5%</sub>	A\$M	\$1,084
Post-Tax IRR	%	76%
Post-Tax Payback of Initial Capital	years	1.2
Post-Tax NPV <sub>5%</sub> /Capex Ratio	-	3.89

**Table 1-2: Capital and Closure and Reclamation Costs**

Capital Costs (in current dollars)	Life of Mine Total	
	C\$M	A\$M
Initial Capital	\$251	\$279
Life of Mine Sustaining Capital	\$365	\$405
Closure Costs	\$148	\$165



**Table 1-3: Operating Costs**

Operating Costs	Unit	Life of Mine (LOM) Average
Mining Cost*	\$C/t milled	C\$21.3
Mill Feed Transport	\$C/t milled	C\$6.0
Processing Cost	\$C/t milled	C\$10.2
G&A Cost	\$C/t milled	C\$4.2
<b>Total Operating Cost</b>	<b>\$C/t milled</b>	<b>C\$41.8</b>

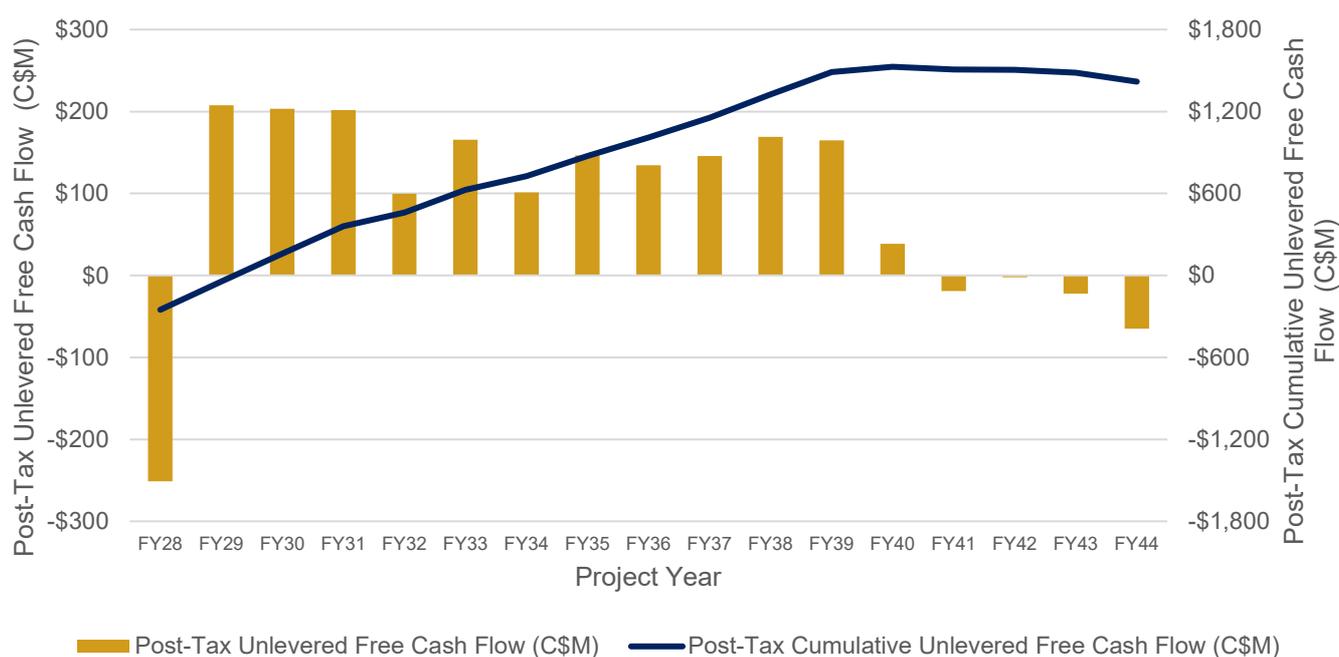
\* C\$5.1/t mined.

**Table 1-4: Production Summary**

Production Summary	Unit	Life of Mine (LOM) Total or Average
Mine Life	years	11.2
Total Waste Mined	Mt	114.3
Average Strip Ratio	w:o	3.4
Total Mill Feed Tonnes	Mt	33.4
Average Mill Feed Grade	g/t	1.1
Total Contained Gold	koz	1,232
Total Recovered Gold	koz	1,185
Average Gold Recovery	%	96.2%
Average Annual Gold Production	koz	106

### Post-Tax Undiscounted Free Cash Flow

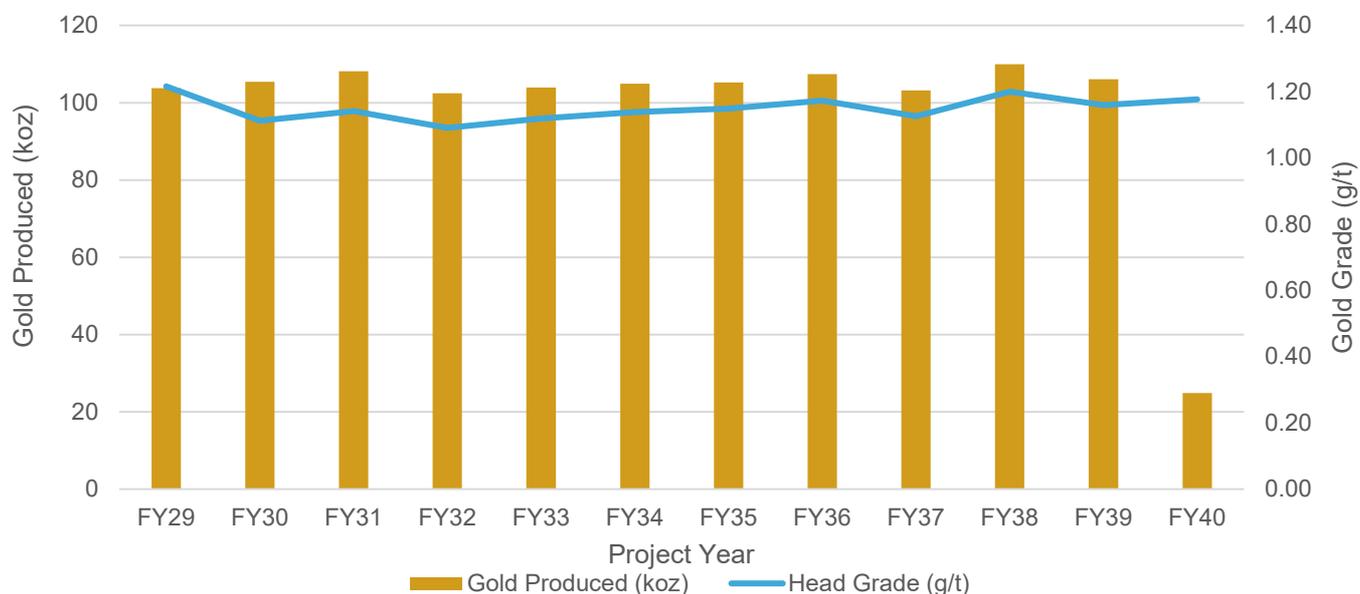
**Figure 6: Projected Annual and Cumulative LOM Post-Tax Undiscounted Free Cash Flow**





## Gold Production

Figure 7: Projected LOM Production (koz)



### Commentary on Production Targets and Mineral Inventory Assumptions

The 15-Mile Processing Hub production targets are based on the Concept Study. The relative proportions of Proved and Probable Ore Reserves from 15-Mile and Beaver Dam along with Measured and Indicated Mineral Resources from Cochrane Hill are shown below in Table 2 and 3. The Ore Reserves account for 68% of production (23% Proved / 46% Probable) and the Mineral Resource component of production is 32% (23% Measured / 9% Indicated).

Beaver Dam and 15-Mile are reported as Proved and Probable Ore Reserves in the Production Targets because the underlying material assumptions that support these Ore Reserves have not changed compared to how they are currently reported<sup>1</sup> as per the separate Pre-Feasibility Study for 15-Mile reported in October 2024<sup>1</sup> (“**15-Mile and Beaver Dam PFS**”). For completeness all relevant material assumptions for Beaver Dam and 15-Mile are re-disclosed in this announcement, along with the assumptions for Cochrane Hill.

The 15-Mile and Beaver Dam PFS assumed the treatment of 15-Mile and Beaver Dam at 15-Mile through the relocated Touquoy process plant at a lesser rate of 2.1 Mtpa, whereas this Concept Study includes the addition of Cochrane Hill for processing at 15-Mile Processing Hub along with Beaver Dam and 15-Mile at a higher throughput rate of 3 Mtpa (through replacement of the 3.5MW ball mill with a 5.5MW ball mill plus one additional leach tank).

In this announcement, the Production Targets attributable to Cochrane Hill are reported as being derived from Mineral Resources for the following reasons:

1. The current Cochrane Hill Ore Reserves are reported as per the 2019 Atlantic PFS which is based on the construction of crushing, grinding and float circuit at Cochrane Hill to produce a gold concentrate to be trucked to the processing plant for final gold recovery steps. The Concept Study anticipates that whole ore from Cochrane Hill is trucked to the processing plant for crushing, grinding and leaching. Additional metallurgical testwork is required to bring the level of metallurgical studies on treatment of Cochrane Hill ore by conventional carbon-in-leach up to a PFS level; and
2. The choice of revenue factor for the pit design and updated costs reflecting the change of processing technique in the Concept Study are sufficiently different to those used in the currently reported Ore Reserves for Cochrane Hill to be appropriately only referenced to as Measured and Indicated Resources.

<sup>1</sup> Refer to ASX announcement on October 10, 2024 titled “Atlantic Projects Updated Prefeasibility”



**Table 2 Gold Production by underlying Ore Reserve Classification – 15-Mile and Beaver Dam**

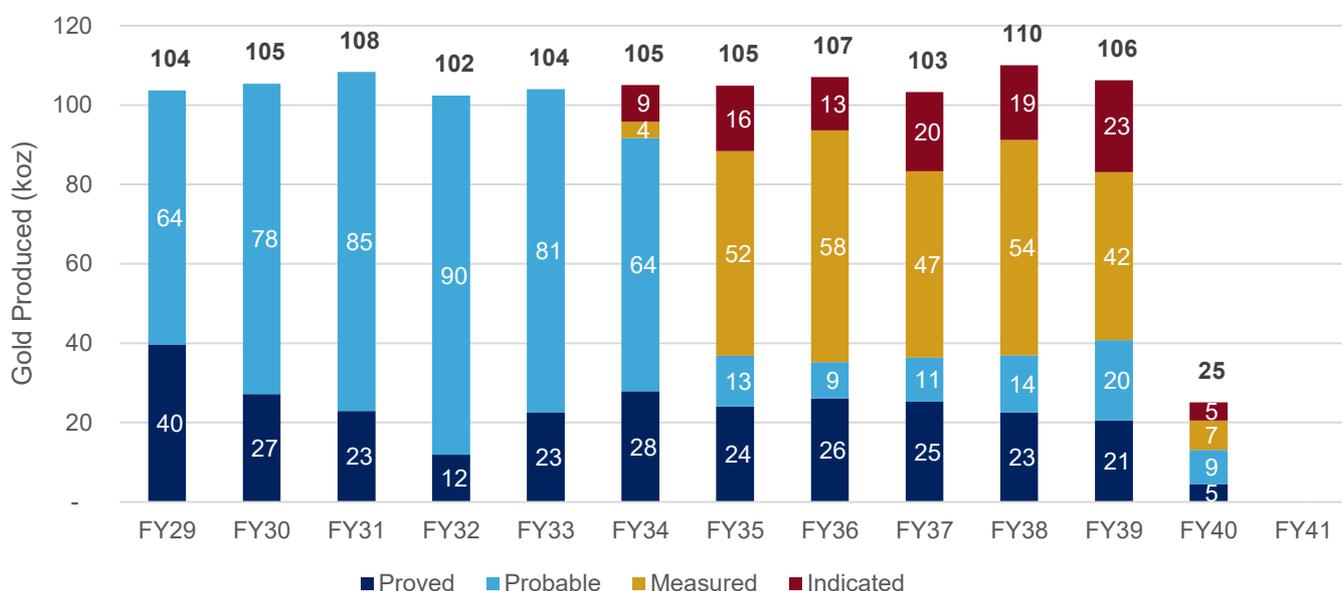
Deposit	Proved			Probable			Total Proved and Probable		
	Tonnes (Mt)	Grade (g/t Au)	Gold ('000)	Tonnes (Mt)	Grade (g/t Au)	Gold ('000)	Tonnes (Mt)	Grade (g/t Au)	Gold ('000)
<b>15-Mile</b>	4.2	1.0	140	14.3	1.0	480	18.5	1.0	620
<b>Beaver Dam</b>	2.9	1.6	140	1.6	1.5	80	4.5	1.6	220
<b>Total</b>	<b>7.1</b>	<b>1.2</b>	<b>280</b>	<b>15.9</b>	<b>1.1</b>	<b>560</b>	<b>23</b>	<b>1.1</b>	<b>840</b>

**Table 3: Gold Production by underlying Mineral Resource Classification – Cochrane Hill**

Deposit	Measured			Indicated			Total Measured and Indicated		
	Tonnes (Mt)	Grade (g/t Au)	Gold ('000)	Tonnes (Mt)	Grade (g/t Au)	Gold ('000)	Tonnes (Mt)	Grade (g/t Au)	Gold ('000)
<b>Cochrane Hill</b>	<b>7.2</b>	<b>1.2</b>	<b>280</b>	<b>3.3</b>	<b>1.1</b>	<b>110</b>	<b>10.5</b>	<b>1.2</b>	<b>390</b>

1. Sub-total and total are rounded to the nearest 10koz
2. Rounding may result in apparent summation differences between tonnes, grade and metal contained

**Figure 8 – Gold Production by Underlying Resource and Reserve Classification**



### Sensitivity Analysis

A sensitivity analysis has been conducted on the estimates made for Post-Tax NPV<sub>5%</sub> and IRR in the Concept Study for the 15-Mile Processing Hub. Note that these sensitivities assess variables independently and movements in more than one variable will either exacerbate or offset the calculated sensitivities as the case may be.



Tables 4, 5 and 6 below shows the sensitivities calculated for gold price, initial capital expenditure, total operating cost, and C\$:US\$ exchange rate.

**Table 4 Post-Tax NPV<sub>5%</sub> Sensitivity, C\$M**

Gold Price (US\$/oz)	Base Case	Initial Capex (-10%)	Initial Capex (+10%)	Opex (-10%)	Opex (+10%)	FX (0.65)	FX (0.75)
\$2,000	\$561	\$579	\$542	\$629	\$491	\$689	\$449
\$2,500	\$977	\$995	\$959	\$1,046	\$908	\$1,137	\$838
\$3,000	\$1,393	\$1,412	\$1,375	\$1,462	\$1,325	\$1,586	\$1,227

**Table 5: Post-Tax NPV<sub>5%</sub> Sensitivity, A\$M**

Gold Price (US\$/oz)	Base Case	Initial Capex (-10%)	Initial Capex (+10%)	Opex (-10%)	Opex (+10%)	FX (0.65)	FX (0.75)
\$2,000	\$623	\$643	\$602	\$698	\$545	\$765	\$498
\$2,500	\$1,084	\$1,104	\$1,064	\$1,161	\$1,008	\$1,262	\$930
\$3,000	\$1,546	\$1,567	\$1,526	\$1,623	\$1,471	\$1,760	\$1,362

**Table 6 Post-Tax IRR Sensitivity**

Gold Price (US\$/oz)	Base Case	Initial Capex (-10%)	Initial Capex (+10%)	Opex (-10%)	Opex (+10%)	FX (0.65)	FX (0.75)
\$2,000	51.9%	58.2%	46.7%	55.1%	48.5%	59.4%	45.1%
\$2,500	75.5%	84.2%	68.5%	78.4%	72.7%	84.2%	67.9%
\$3,000	97.8%	108.7%	88.9%	100.5%	95.1%	107.8%	89.0%

## 15-Mile Processing Hub Development and Operations Discussion

### Mining Summary

The Concept Study mines all open pits across 15-Mile, Beaver Dam and Cochrane Hill with conventional drill, blast, load and haul. There are four open pits at 15-Mile named Egerton-Maclean, Plenty, Hudson and 149. Beaver Dam and Cochrane Hill each have only one open pit.

Ore is sourced solely from 15-Mile until Year 4 when Beaver Dam ore mining and haulage commences. Cochrane Hill mining and haulage commences in Year 6.

In summary:

- The peak mining rate is estimated to be 16.9 million tonnes per year with a mine life of 11.2 years;
- A total of 33.4 million tonnes of ore are estimated to be mined at an estimated average grade of 1.1 g/t, with a total of 114 million tonnes of waste estimated to be mined delivering a low stripping ratio of 3.4:1;
- The primary production equipment includes 144 mm DTH production drills, 4.5 m<sup>3</sup> bucket production excavators and 64 tonne payload off-highway mining trucks; and
- Stockpile rehandling at 15-Mile is anticipated to be minimal with two small Run of Mine (ROM) stockpiles for storing mill feed with peak inventory estimated to be 0.7 million tonnes.

The mining sequence across the deposits has been optimised to allow for a smooth gold production profile over the life of mine and to achieve total annual movements that fit a sensible progression of fleet size. Completion of open pits is sequenced to maximise backfill during operations at 15-Mile while planned waste backfill at completion of Beaver Dam and Cochrane Hill will further reduce environmental disturbance and result in improved landforms post closure.



**Figure 9 - Tonnes Milled and Gold Grade (g/t)**



**Figure 10 - Mine Plan Production Summary**

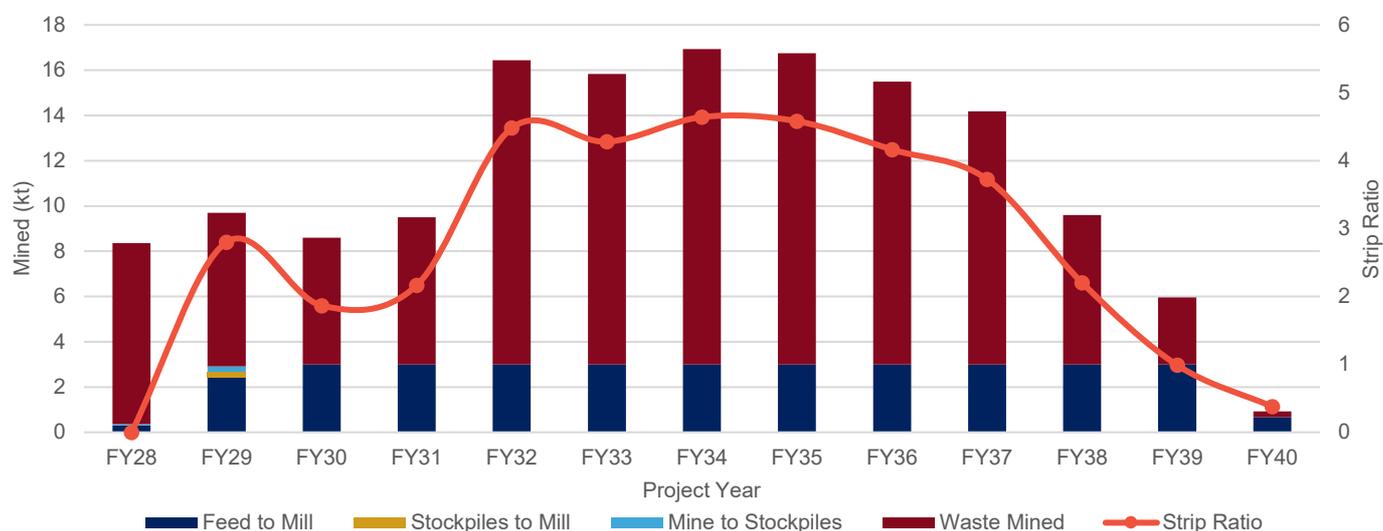
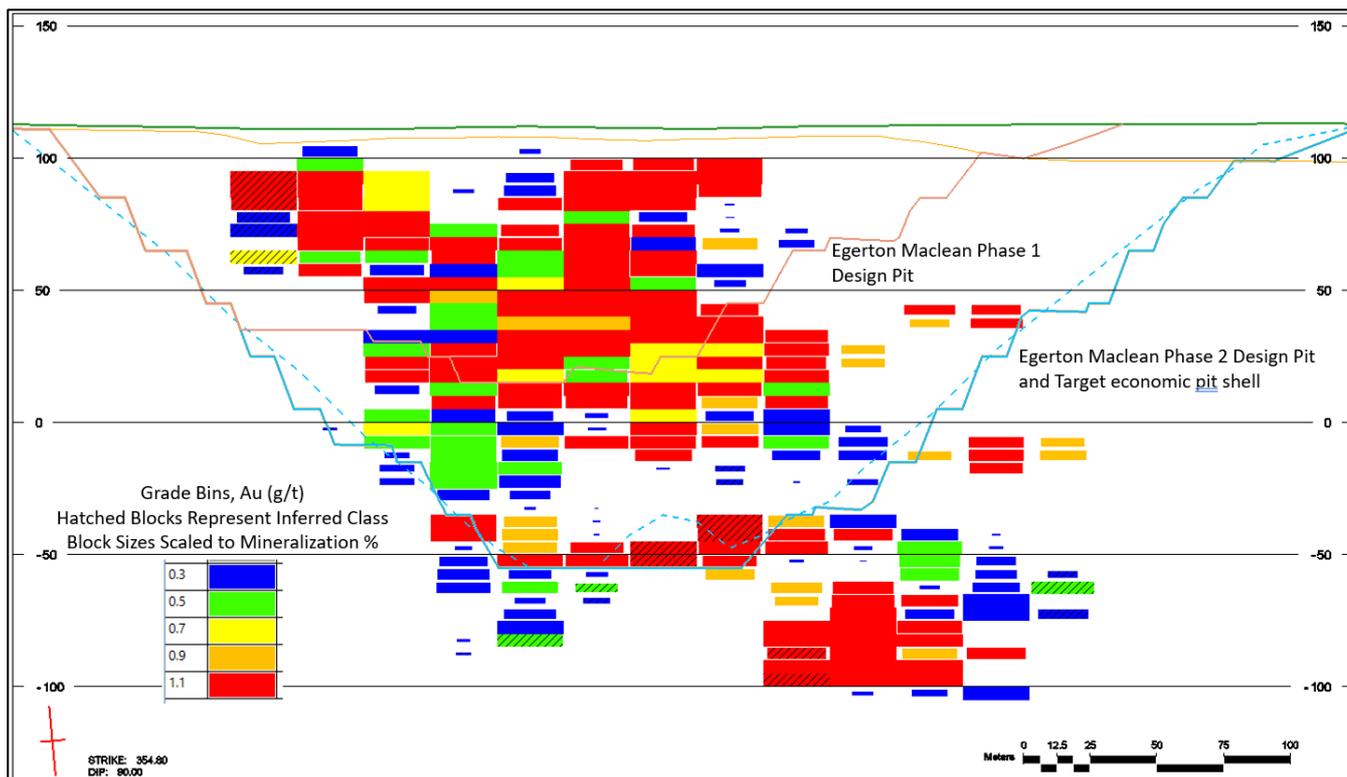


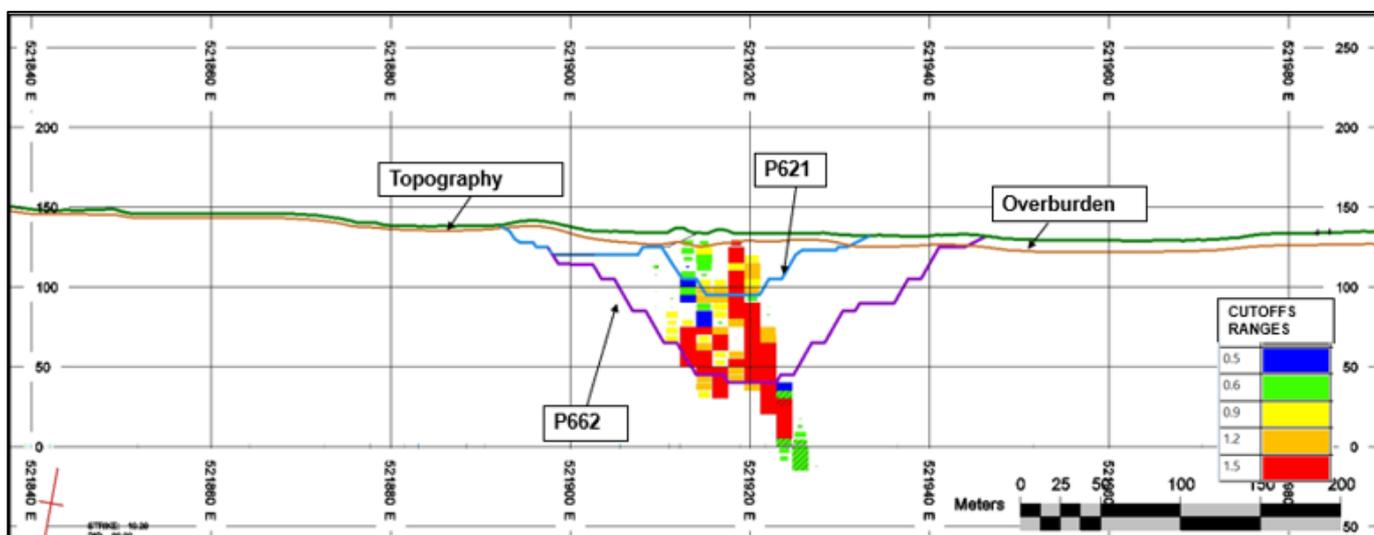


Figure 11 shows a cross-section view through the main Egerton-Maclean pit of the 15-Mile Project, Figure 12 through the Beaver Dam deposit and Figure 13 through the Cochrane Hill deposit. Blocks in the section view show gold grade in all blocks above the respective gold cut-off grade. Inferred blocks are shown as hatched blocks. Block sizing is relative to the mineralised portion of the block. A block that is 50% mineralised appears half as large as a block that is 100% mineralised. Green lines represent the topography, orange lines the overburden/bedrock contact surfaces and the brown, blue and purple lines the designed open pits.

**Figure 11 Cross Section through Egerton-Maclean pit at 15-Mile looking West**

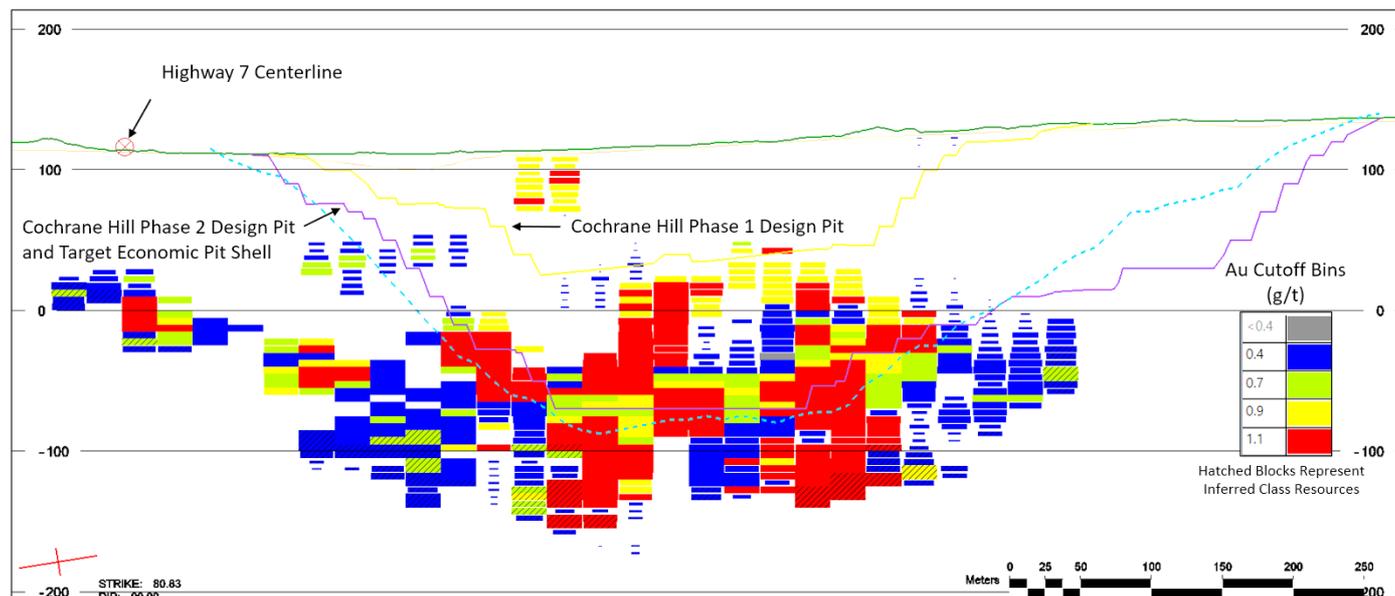


**Figure 12 Cross Section through Beaver Dam pit looking West**





**Figure 13 Cross Section through Cochrane Hill pit looking North**



## Mining Methods and Assumptions

### 15-Mile

Open pit optimisation for 15-Mile was run using Pseudoflow. Ultimate economic pit limits are chosen independently for each deposit and range from 0.90 to 1.13 revenue factor pit shells. Pit designs incorporating further practical mining considerations, such as minimum mining width, bench configurations and ramp access are carried out using these target optimisation shells. The overall slopes used for the pit optimisation and design work were sourced from reports carried out by external geotechnical consultants, with overall slopes ranging from 35 to 51 degrees in the various geotechnical zones. Minimum phase mining width is planned as 45 m, with pit bottoms designed down to 25 m.

Mining dilution and recovery factors have been incorporated based on grade control and reconciliation work completed on the nearby Touquoy gold mine, which was mined using the same methods and with the same equipment as proposed for 15-Mile. Global mining dilution of 1.6% @ 0.2 g/t gold grade and 98.4% mining recovery factors are applied to the Mineral Resource block model tonnages and grades.

The mine and mill production schedules are developed using the bench tonnages within the phased pit designs. Mine operations are planned as owner operated with conventional drill/blast/load/haul activities.

Mining cost estimates are built up from first principles. Equipment and operations productivity is based on historical production at the nearby Touquoy gold mine and simulated haul cycle times for all planned 15-Mile sources and destinations. Equipment fuel, lube, tire, equipment parts, explosives and labour usages rates have also been estimated based on experience from the nearby Touquoy gold mine together with supplier recommendations. Costs inputs are based on supplier quotations in Q3 Mar FY25.

### Beaver Dam

Open pit optimisation for Beaver Dam was run using Pseudoflow. Ultimate economic pit limits are chosen based on a 0.80 revenue factor pit shell. Pit designs incorporating further practical mining considerations, such as minimum mining width, bench configurations and ramp access are carried out using these target optimisation shells. The overall slopes used for the pit optimisation and design work were sourced from reports carried out by external geotechnical consultants, with overall slopes ranging from 42 to 53 degrees in the various geotechnical zones.

Minimum phase mining width is planned as 45 m, with pit bottoms designed down to 25 m.



Mining dilution and recovery factors have been incorporated based on grade control and reconciliation work completed on the nearby Touquoy gold mine, which was mined using the same methods and with the same equipment as proposed for Beaver Dam. Global mining dilution of 1.6% @ 0.3 g/t gold grade and 98.4% mining recovery factors are applied to the Mineral Resource block model tonnages and grades.

The mine and mill production schedules are developed using the bench tonnages within the phased pit designs. Mine operations are planned as owner operated with conventional drill/blast/load/haul activities.

Mining cost estimates are built up from first principles. Equipment and operations productivity is based on historical production at the nearby Touquoy gold mine, and simulated haul cycle times for all planned Beaver Dam sources and destinations. Equipment fuel, lube, tire, equipment parts, explosives and labour usages rates have also been estimated based on experience from the nearby Touquoy gold mine together with supplier recommendations. Costs inputs are based on supplier quotations in Q3 Mar FY25.

### **Cochrane Hill**

Open pit optimisation for Cochrane Hill was run using Pseudoflow. Chosen ultimate economic pit limits are based on a 0.78 revenue factor pit shells. Pit designs incorporating further practical mining considerations, such as minimum mining width, bench configurations and ramp access are carried out using this target optimisation shell. The overall slopes used for the pit optimisation and design work were sourced from reports carried out by external geotechnical consultants, with overall slopes ranging from 29 to 49 degrees in the various geotechnical zones.

Minimum phase mining width is planned as 45 m, with pit bottoms designed down to 25 m.

Mining dilution and recovery factors have been incorporated based on grade control and reconciliation work completed on the nearby Touquoy gold mine, which was mined using the same methods and with the same equipment as proposed for Cochrane Hill. Global mining dilution of 1.6% @ 0.3 g/t gold grade and 98.4% mining recovery factors are applied to the Mineral Resource block model tonnages and grades.

The mine and mill production schedules are developed using the diluted bench tonnages within the phased pit designs. Mine operations are planned as owner operated with conventional drill/blast/load/haul activities.

Mining cost estimates are built up from first principles. Equipment and operations productivity is based on historical production at the nearby Touquoy gold mine, and simulated haul cycle times for all planned Cochrane Hill sources and destinations. Equipment fuel, lube, tire, equipment parts, explosives and labour usages rates have also been estimated based on experience from the nearby Touquoy gold mine together with supplier recommendations. Costs inputs for these supplies and workers are based on internal Canadian cost databases dated in Q3 Mar FY25.

## **Processing Summary**

### **15-Mile Processing Hub**

The metallurgical testing confirmed that the 15-Mile, Beaver Dam and Cochrane Hill mill feed is highly amenable to conventional recovery methods of gravity and carbon in leach cyanidation. Process studies undertaken by Ausenco confirmed that the Touquoy processing plant is suitable to achieve high gold recovery from 15-Mile, Beaver Dam and Cochrane Hill mineralisation and therefore the process flowsheet has been designed to maximise repurposing of Touquoy equipment in order that initial capital is optimised and for avoidance of longer lead times for new equipment. The achievement of the anticipated 3 Mtpa processing rate requires minimal changes to the overall process flowsheet. The Touquoy processing plant achieved approximately 3 Mtpa in operations when treating ore from the Touquoy pit. Achievement of the required optimal grind size for 15-Mile, Beaver Dam and Cochrane Hill mill feed is anticipated to require a substitution of the 3.5MW ball mill for a new 5.5MW and the addition of one leach tank (compared to that designed for the 15-Mile and Beaver Dam PFS) to achieve optimal retention time.

Mill feed from Beaver Dam and Cochrane Hill pits is anticipated to be transported 60km and 70km respectively via public roads. No modifications are anticipated to be needed at the process plant to accommodate these two mill feed sources.

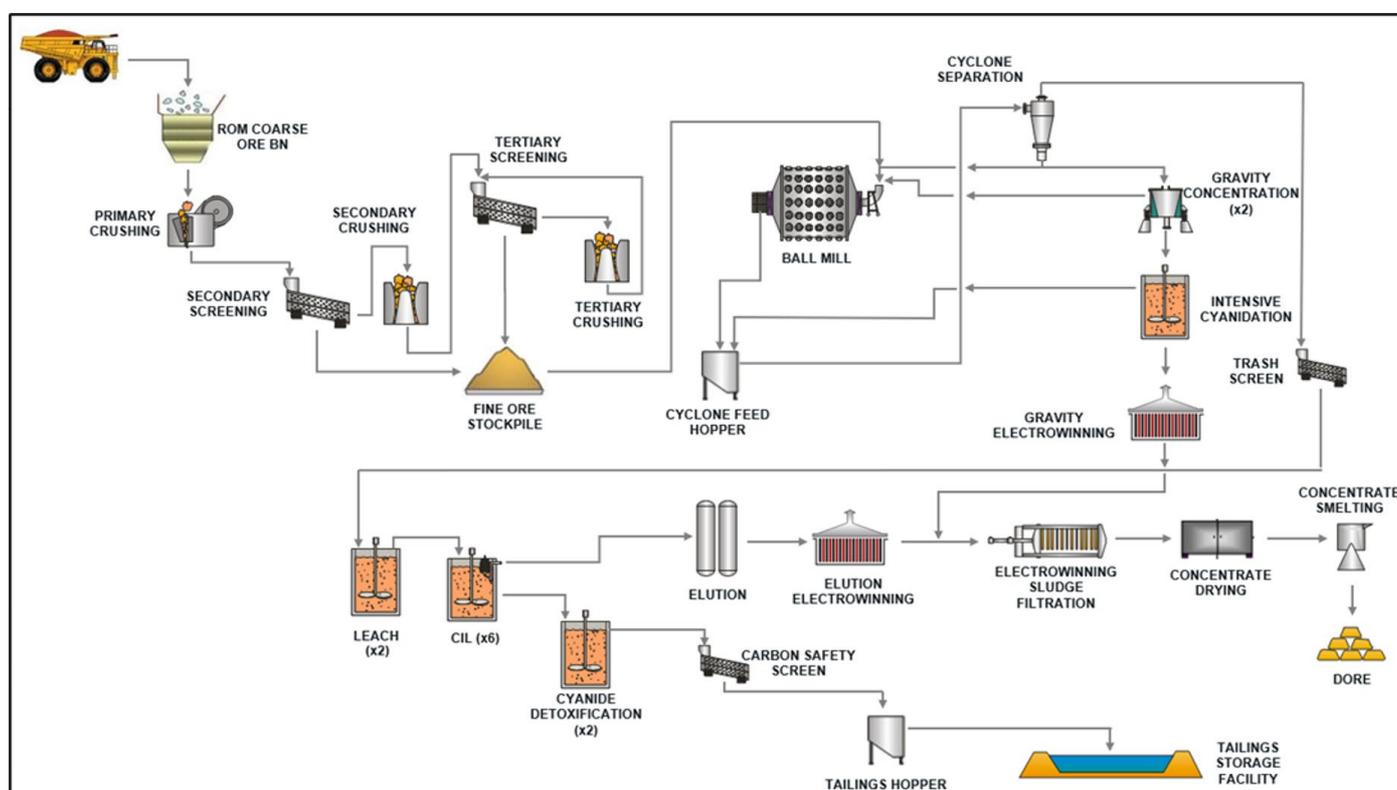
Testwork indicates the mineralisation is medium hardness with a bond mill work index of approximately 13.8 (metric) for 15-Mile, 15.3 (metric) for Beaver Dam and 16.6 (metric) for Cochrane Hill. The process plant is anticipated to operate at a rate of 8,220 tonnes per day at a mill availability of 92%.



The process design for the 15-Mile Processing Hub consists of:

- Three stage crushing, consisting primary jaw crusher, secondary cone crusher and tertiary cone crusher with associated material handling and screening equipment;
- Grinding of crushed material to 80% passing 150 – 180 microns (depending on open pit source) with a 20ft (diameter) x 27ft (length) metre ball mill operating in closed circuit with hydro-cyclones with the ball mill equipped with a 5.5 MW motor;
- A gravity concentration circuit is included with gold recovery up to 60% anticipated, depending on mill feed type;
- Leaching and adsorption circuit includes two leach tank and six carbon-in-leach (CIL) tanks, for a total leach and adsorption retention time of 24 hours;
- Cyanide destruction using an SO<sub>2</sub>/air system on the final tailings slurry; and
- Final tails from the cyanide destruction circuit will be discharged to the tailings management facility.

**Figure 14: Process Flow Diagram**



### **15-Mile Metallurgy**

Metallurgical testing for 15-Mile ore was completed on drill core samples from all four open pits at Base Metallurgical Laboratories Ltd (“**BaseMet**”), independent of St Barbara, in the Q2 Sep FY23. The test results indicated recovery of approximately 97.1% was achievable on all 15-Mile ore sources.

### **Beaver Dam Metallurgy**

Metallurgical testing for Beaver Dam was completed on drill core samples at ALS Metallurgy Ltd, independent of St Barbara, in Q2 Mar FY15 and the Q3 Mar FY21. Additional metallurgy testing for Beaver Dam was completed on drill core samples at BaseMet in Q3 Mar FY15 and Q3 Mar FY21. The test results indicated overall recovery on all Beaver Dam ore sources of approximately 95.8% was achievable.

### **Cochrane Hill Metallurgy**

Recent metallurgical test work for Cochrane Hill was completed on drill core samples at BaseMet, independent of St Barbara, in the Q1 Sep FY24. The test results indicate recovery of approximately 95.0% at a new relaxed grind size of 150um. The test work indicates the material is amenable to conventional leaching techniques. Additional cyanide leach testing is ongoing and expected to be completed by Q4 Jun FY25 for the PFS.



## Tailings Management

### **15-Mile Processing Hub**

The tailings management design was completed by Ausenco and is based on conventional slurried tailings storage to help reduce potential acid generation. The tailings management facility will be centreline construction and consist of a “starter” storage facility followed by subsequent engineered lifts during operation.

Potentially acid generating waste material mined in the early years of production will be stored in the tailings management facility, along with any overburden material that has been potentially impacted by historic mining in the area (occurring in late 1800s/early 1900s).

### **Beaver Dam and Cochrane Hill**

Mill feed from Beaver Dam and Cochrane Hill is transported and processed at 15-Mile, therefore Beaver Dam and Cochrane Hill processed mill feed will be stored in the 15-Mile tailings management facility. The 15-Mile tailings management facility has been designed with sufficient storage capacity to account for all deposits.

## Approvals and Environmental Considerations.

All three project sites have historic mine workings and tailings from late 1800's and early 1900's. The project has been designed to rehabilitate any areas impacted by historic mine workings or tailings, using similar successful methodologies employed at Touquoy. The projects have all been designed considering environmental constraints, previous project feedback and considering final closure in the upfront design.

### **15-Mile**

The 15-Mile project is subject to Provincial primary approvals and certain Federal approvals as applicable prior to development. This includes permits such as Environmental Impact Study, MDMER and Fisheries Authorisation.

The 15-Mile project has been designed with environmental constraints considered to reduce impacts. This approach has significantly reduced impacts compared to previous designs. This includes limiting stockpiles, efficient tailings design and reducing waste rock disturbance and impacts. This also includes no storage of potentially acid generating waste material at surface. All potentially acid generating material is designed to be either deposited in the tailings storage facility or backfilled to completed open pits. This is the industry recognised best practice for storage of potentially acid generating materials.

Seloam Brook was redirected into the mineralised area by historic mining and now unfortunately runs through areas of historic tailings within the 15 Mile Project area. Seloam Brook and its watershed is heavily impacted by historic mining. Presently the area contains tailings and byproducts of the historic mining process. Seloam Brook is proposed to be realigned, close to where it is believed to have originally ran, using an engineered design that will enhance fish habitat and ensure existing flows are accommodated. As part of this diversion, the historic contamination in the area will be rehabilitated with approximately 61 hectares impacted by historic tailings anticipated to be rehabilitated and contained in modern storage infrastructure.

Site infrastructure design including for buildings, water treatment and auxiliary support equipment has been updated and estimated based on the earlier 15-Mile and Beaver Dam PFS with appropriate cost escalation.

### **Beaver Dam**

The Beaver Dam project is subject to Provincial primary approvals and certain Federal approvals as applicable prior to development. This includes permits such as Environmental Impact Study, MDMER and Fisheries Authorisation.

The Beaver Dam project as proposed has taken into consideration environmental limitations and opportunities to reduce impacts. This has resulted in a reduction of approximately 50% in surface disturbance compared to previous designs. This includes a smaller pit design, less mined waste, better management of potentially acid generating material, no requirement for a new haul road, minimised trucking frequency and reduced water consumption.

The project footprint has largely reduced as a result of the smaller pit design. This resulted in reduced waste rock stockpiles. The potential acid generating material will be separated from the non-acid generating material. The potential acid generating material will be re-handled back into the completed pit to help mitigate acid generation potential. Additionally, the project no longer requires the construction of a 12.3 km haul road to the Touquoy processing facility.

Site infrastructure designs including for buildings, water treatment and auxiliary support equipment has been updated and estimated based on the earlier 15-Mile and Beaver Dam PFS with appropriate escalation.



## **Cochrane Hill**

The Cochrane Hill project is subject to Provincial primary approvals and certain Federal approvals as applicable prior to development. This includes permits such as Environmental Impact Study, MDMER and Fisheries Authorisation.

The Cochrane Hill project has been completely re-designed, taking into consideration previous feedback from regulators, communities, stakeholder and rights holders. The open pit has been reduced in size to avoid the need for realignment of public roads and to avoid nearby waterways. Additionally, the project is now a quarry-style operation with no processing facility, no tailings management facility or need for significant water extraction. The site design also includes a lined stockpile for potentially acid generating material mined during operation to be backfilled into the open pit immediately after operation. This will minimise impacts and allow final reclamation landforms significantly sooner. The site layout has been optimised to minimise disturbance to existing potentially sensitive watersheds while capturing all site run off for water treatment before discharge.

Site infrastructure design including for buildings, water treatment and auxiliary support equipment has been updated and estimated based on the earlier 15-Mile and Beaver Dam PFS with appropriate escalation.

## **Social Acceptability and License to Operate**

In addition to applicable regulations, the 15-Mile Processing Hub and satellite mines will require social acceptance. Early information and engagement meetings were previously held with local communities, First Nation communities, and local, Provincial, and Federal governmental authorities on earlier concepts proposed by Atlantic Gold. The extensive feedback has significantly influenced several of the changes in design of the 15-Mile Processing Hub and the open pits proposed at Beaver Dam and Cochrane Hill.

Consultation with Community Liaison Committees has continued during the redesign of the respective projects and the Company looks forward to presenting these new project designs for feedback in future sessions. Community engagement offices have been established in Sheet Harbour, Stellarton and Guysborough.

The 15-Mile Processing Hub and the Beaver Dam and Cochrane Hill open pits will be primarily subject to Provincial permitting and regulations but also certain Federal environmental regulations including fisheries authorisations. Environmental baseline studies and impact analysis are well advanced to support permitting.

St Barbara will continue to regularly meet with stakeholders and First Nation representatives as project milestones are reached and will be presenting and discussing the study results with host communities.

## **Capital Costs**

The total initial capital cost for the 15-Mile Processing Hub is estimated to be approximately C\$251 million (A\$279 million), including allowances for contingency. Sustaining capital is estimated to be approximately C\$365 million (A\$405 million) over life of mine. Closure and reclamation are estimated to be C\$148 million (A\$165 million).

Capital and sustaining costs were compiled by Ausenco and MMTS from the following sources:

- Mining initial capital cost estimates were developed by MMTS. Cost estimates include the equipment lease payments for the mine fleet and the pre-production mine operating costs for the mining of material from the open pits and the targeting of waste rock quantities for construction purposes.
- Mining sustaining capital cost estimates were developed by MMTS and include equipment lease payments. Mine fleet leases are setup as 10% down payment in the period the equipment is commissioned, followed by 16 quarterly lease balance payments, at a 7% rate. The lease arrangements are applied to all mine fleet purchases up to year 3 of the project, afterwards all expansion and replacement fleet is assumed to be purchased under a traditional capital purchase arrangement. Further consideration of assumptions and trade-offs for mine fleet options will take place during Feasibility Study and accounting treatments may change accordingly.
- Processing, infrastructure, project delivery and project indirect cost estimates were developed by Ausenco, and are inclusive of a 3 Mtpa conventional leach/CIL processing plant, power substation, tailings facility initial construction and other required infrastructure with the repurposing of Touquoy fixed plant equipment captured in the processing capital costs where it is cost effective to do so; and
- The Processing Sustaining Capital cost estimates mainly consist of new infrastructure and the pre-stripping required to initiate mining at Beaver Dam in Year 4 and Cochrane Hill in Year 6 of the life of mine. The remaining Sustaining Capital cost estimate mainly consists of tailings management facility lifts that occur through life of mine.



**Table 7: Initial and Sustaining Capital Costs (C\$M)<sup>1</sup>**

Area	Initial Capital (C\$M)	LOM Sustaining Capital (C\$M)	Total Capital (C\$M)
Mining	56	111	167
Processing	67	0.5	68
Tailings Management	19	35	54
On Site Infrastructure	21	-	21
Project Indirect costs	30	9	41
Owner's Costs	16	23	39
Contingency	43	2	43
Beaver Dam Capital (Spent Year 4)	-	60	60
Cochrane Hill Capital (Spent Year 6)	-	91	91
Mill Feed Transport Costs	-	33	33
<b>Total</b>	<b>251</b>	<b>365</b>	<b>616</b>

The estimated total initial capital cost of approximately C\$251M is comparatively low against other similar scale gold projects due to the reuse of existing processing equipment from Touquoy which incorporates the same consolidated footprint design that was successfully used at Touquoy and noting that the capital costs relating to Beaver Dam and Cochrane Hill only occur in Years 4 and 6 respectively, rather than as part of initial capital.

## Operating Costs

Operating costs have been compiled based on the following sources and assumptions:

- Operating cost estimates are derived from first principles, with benchmarking aligned to actual costs from the Touquoy operation, adjusted for inflation.
- Mining unit cost estimates have been estimated by MMTS, built up from first principles, assuming owner run operations, and utilising 2025 vendor quotes and internal database cost inputs;
- Processing unit cost estimates have been estimated by Ausenco using first principles, experience from the Touquoy process plant and 2025 prices for major reagents and media;
- Mill feed transportation cost estimates have been estimated by MMTS using first principles assuming contractor run operations;
- G&A costs are based on experience with Touquoy project adjusted for cost escalation.

<sup>1</sup> Does not include salvage value and closure costs. Numbers are rounded to the near whole value and may not add up.



**Table 8: Total Life of Mine Operating Costs**

Cost Centre	C\$/t milled
Processing	\$10.2
Mining*	\$21.3
G&A	\$4.2
Mill Feed Transport	\$6.0
<b>Total Site Operating Cost</b>	<b>\$41.8</b>

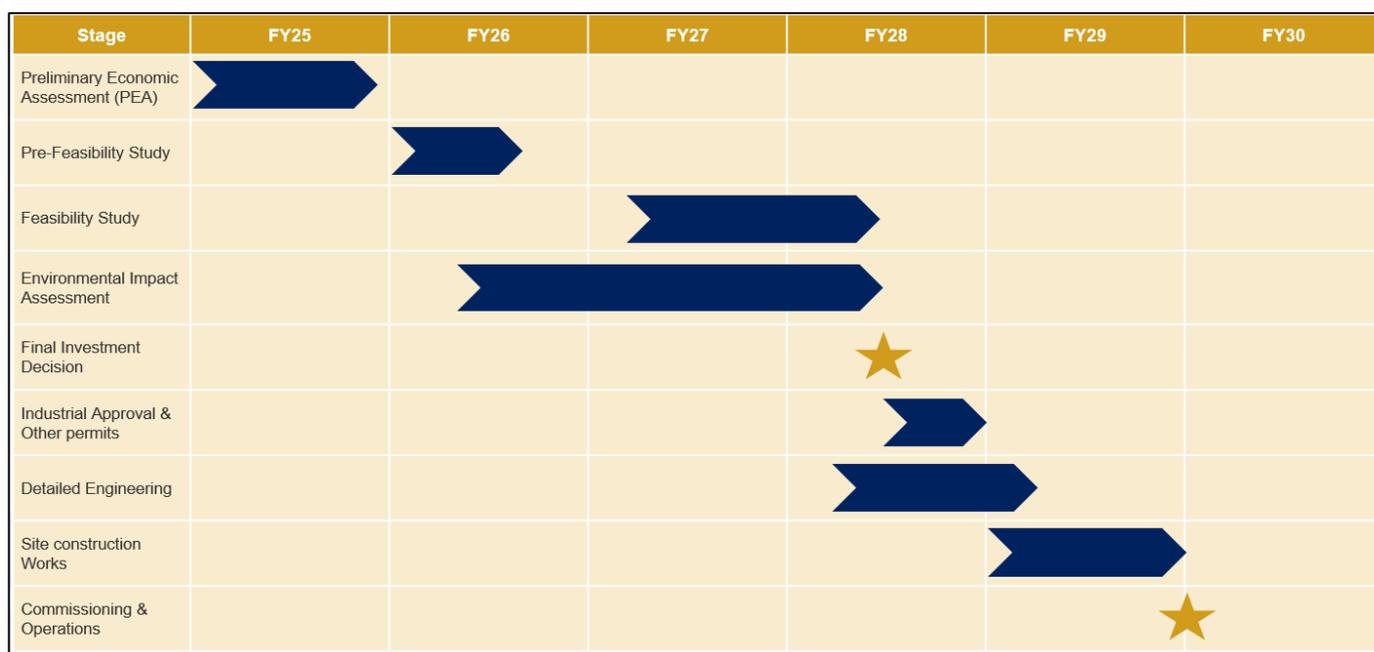
\* \$5.11/t mined.

### Next Steps

Environmental baseline monitoring and community engagement are ongoing in support of the 15-Mile Processing Hub and the Beaver Dam and Cochrane Hill Project locations. Trade-off studies are currently underway to inform the advancement of a PFS, targeted for completion in Q3 Mar FY26.

In addition, work is underway in preparation for an Environmental and Impact Assessment submission for mid-FY27. Project development timelines and milestones are shown in Figure 15.

**Figure 15: Indicative Project Development Timeline**





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## JORC Code Compliance Statements

The information relating to Beaver Dam and 15-Mile Mineral Resources and Ore Reserves contained in this announcement is extracted from “*Atlantic Projects Updated Prefeasibility*” released to ASX on 10 October 2024. The information relating to Mineral Resources for Cochrane Hill is extracted from “*Mineral Resources and Ore Reserves Statement as at 31 December 2024*” released to ASX on 19 February 2025.

These reports can be viewed on the Company’s website [here](https://stbarbara.com.au/investors/announcements/): <https://stbarbara.com.au/investors/announcements/>

The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and, in the case of estimates of Mineral Resources or Ore Reserves, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person’s findings are presented have not been materially modified from the original market announcement.

## Competent Person Statements

The information in this report that relates to Mineral Resources is based on information compiled by Ms. Jane Bateman who is a Fellow of the Australasian Institute of Mining and Metallurgy. Jane Bateman is a full-time employee of St Barbara Ltd and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which she is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the “Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves”. Jane Bateman consents to the inclusion in this report of the matters based on her information in the form and context in which it appears.

The information in this report that relates to Ore Reserves at Beaver Dam and 15 Mile is based on information compiled by Marc Schulte who is a Member of the Association of Professional Engineers, Geologists and Geophysicists of Alberta. Marc Schulte is an associate of Moose Mountain Technical Services and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the “Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves”. Marc Schulte consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

## Forward looking statements

Some statements in this announcement regarding estimates or future events are forward-looking statements. They include indications of, and guidance on, future matters. Forward-looking statements include, but are not limited to, statements preceded by words such as “planned”, “expected”, “projected”, “estimated”, “may”, “scheduled”, “intends”, “anticipates”, “believes”, “potential”, “could”, “nominal”, “conceptual” and similar expressions. Forward-looking statements, opinions and estimates included in this announcement are based on assumptions and contingencies which are subject to change without notice, as are statements about market and industry trends, which are based on interpretations of current market conditions.

Forward-looking statements are provided as a general guide only and should not be relied on as a guarantee of future performance. Forward-looking statements may be affected by a range of variables that could cause actual results to differ from estimated results and may cause St Barbara’s actual performance and financial results in future periods to materially differ from any projections of future performance or results expressed or implied by such forward-looking statements. These risks and uncertainties include but are not limited to liabilities inherent in mine development and production, geological, mining and processing technical problems, the inability to obtain any additional mine licenses, permits and other regulatory approvals required in connection with mining and third party processing operations, competition for among other things, capital, acquisition of reserves, undeveloped lands and skilled personnel, incorrect assessments of the value of acquisitions, changes in commodity prices and exchange rate, currency and interest fluctuations, various events which could disrupt operations and/or the transportation of mineral products, including labour stoppages and severe weather conditions, the demand for and availability of transportation services, the ability to secure adequate financing and management’s ability to anticipate and manage the foregoing factors and risks. These and other factors should be considered carefully, and readers should not place undue reliance on such forward-looking information. There can be no assurance that forward-looking statements will prove to be correct.



## Mineral Resource Material Assumptions

### Geology and Geological Interpretation

The Meguma Terrane of Nova Scotia hosts the Moose River Member, Tangier Member, and Taylors Head Member of the basal greywacke-dominated Goldenville Formation. Gold mineralization is generally hosted in argillite and/or greywacke sequences of the Moose River Member and is associated with regional-scale anticlines. Structural repetition due to folding and faulting may result in thickening of gold-bearing units.

Gold occurs as native gold, and has been observed in a number of settings, including along shear cleavage, hair line fractures; in pressure shadows; as inclusions; on the margins of sulphide grains; in thin, bedding-parallel quartz veins and stringers. Mineralization is associated with sulphides, including arsenopyrite, pyrite and pyrrhotite. Lesser chalcopyrite, galena, and sphalerite have been observed.

Gold grade was estimated using multiple indicator kriging (MIK) for all deposits. The basic unit of estimation is a panel with horizontal dimensions equal to the average drill hole spacing.

### Drilling Techniques

Drilling has used primarily NQ (47.6 mm diameter) core. Some drill holes at Cochrane Hill were HQ (63.5 mm) or PQ (85mm) size for various technical drill programs. Drilling performed by Massval and Northumberland at Cochrane Hill used AQ (30.5 mm) and BQ sizes. Drill contractors used in historical drill programs are not known. Drill contractors that are known have included Maritime Diamond Drilling, Logan Drilling, and Archibald Drilling.

### Sampling and Sub-Sampling Techniques

Diamond drilling recovery percentages were measured by comparing actual metres recovered per drill run versus metres measured on the core blocks. Recoveries averaged over >90% with increased core loss present in fault zones and zones of strong alteration.

Drill core logging procedures are described on a metre-by-metre basis with regards to lithology, texture, sulphide mineralization, alteration, quartz veining, structure, and in some cases magnetic susceptibility. All drill core has been photographed both wet and dry. Core recovery and rock quality designation (RQD) were measured for each hole at the same metre-by-metre intervals.

Information was initially captured using logging sheets; later programs used direct computer entry. Core recoveries are very good overall.

The main independent laboratories used for sample preparation and analysis include ALS Chemex and SGS; these laboratories hold accreditations for selected analytical techniques. Samples have been typically crushed and pulverized to P85 75 µm.

Sample preparation, analysis, and security procedures undertaken are performed in accordance with exploration best practices and industry standards.

### Sample Analysis Method

Sample lengths have varied depending on the drill program, ranging from about 1 cm to 4.85 m, averaging about 0.9–1 m. Core has been halved for sampling using mechanical core splitters and core saws. Some early programs submitted whole core the default sample length was 1.0 m, and all half-core samples were sawn.

The main independent laboratories used for sample preparation and analysis include ALS Chemex and SGS; these laboratories hold accreditations for selected analytical techniques. Samples have been typically crushed and pulverized to P85 75 µm.

### Estimation Methodology

Multiple indicator kriging (MIK) was used to estimate the Mineral Resources based on an anticipated approach to mill feed material selection in mining. The basic unit of estimation is a panel with horizontal dimensions equal to the average drill hole spacing.

Depending on the deposit, samples were composited to either 1 m or 2 m intervals. Statistical properties of the composites were reviewed in terms of histogram and spatial continuity to identify areas of consistent mineralization style. For a number of the resource models, a single mineralized domain was used. However, in Cochrane Hill and Fifteen Mile Stream Egerton Zone, distinctly different mineralization styles with clearly different histograms of composite grade were identified and modelled with different parameters. Typically grade capping was not considered to be warranted; however, some high-grade samples in the Fifteen Mile Stream database were top-cut.

Where possible, directional sample variograms and variogram models were generated for the domains, and the resulting data used to inform estimation search criteria.

The resource estimates assume mining ore selection in all deposits will take place on 5m flitches with a minimum mining width of around 5 m. For all deposits, following variance adjustment, the resultant block histograms were



assumed to be log-normal in shape. The variance included an adjustment for the information effect introduced by grade control sampling. A grade control drill hole pattern of 10 m by 5 m with a downhole sampling interval of 2.5 m was assumed for Cochrane Hill and the Fifteen Mile Stream zones of Egerton and Hudson. The assumptions for the remaining deposits of Plenty and Beaver Dam was a 5 m by 5 m pattern, with a down-hole sampling interval of 2.5 m.

### Mineral Resource Classification

The resource estimate for each panel was initially classified as Category 1, 2, or 3 based on the results of the data search in the panel neighbourhood:

- Category 1: uses search radii (1), and search parameters (1). If the data found in this search satisfy these criteria (at least 24 samples found in at least four octants), the panel is given a Category 1 flag;
- Category 2: If the first search criteria are not satisfied, search radii (2) are used with search parameters (1). If these criteria are satisfied, the panel is given a Category 2 flag;
- Category 3: If the second search criteria are not satisfied, search radii (2) are used with search parameters (2) (at least 12 samples found in at least two octants). If these criteria are satisfied, a Category 3 flag is applied. If not, no estimate for the panel is generated.

In reporting the resource estimates, Category 1 panel estimates were assigned to Measured Mineral Resources, Category 2 to Indicated Mineral Resources and Category 3 to Inferred Mineral Resources.

### Cut-off Grades

The estimate is based on assumptions of conventional open pit mining, and considerations used in the constraining pit shell include the following:

The 15-Mile deposit is reported at a 0.3g/t cut-off. The cut-off grade includes the following considerations:

- Gold Price US\$2,000/oz;
- Exchange rate of 0.78 US\$:C\$;
- Process recovery of 97.1%
- Mining cost C\$4.12/t
- Processing Cost C\$13.01/t
- General/Administration Cost C\$5.08/t
- Variable overall pit slope angles

The Beaver Dam deposit is reported at a 0.3g/t cut-off. The cut-off grade includes the following considerations:

- Gold Price US\$1,800/oz;
- Exchange rate of 0.77 US\$:C\$;
- Process recovery of 92%
- Mining cost (pit rim) C\$2.90/t
- Processing Cost C\$18.00/t
- General/Administration Cost C\$2.50/t
- Variable overall pit slope angles

The Cochrane Hill deposit is reported at a 0.3g/t cut-off. The cut-off grade includes the following considerations:

- Gold Price US\$1,800/oz;
- Exchange rate of 0.77 US\$:C\$;
- Process recovery of 92%
- Mining cost C\$3.10/t
- Processing Cost C\$8.64/t
- General/Administration Cost C\$2.50/t
- Variable overall pit slope angles

### Metallurgy

Metallurgical testing for 15-Mile was completed on drill core samples from all four open pits at Base Metallurgical Laboratories Ltd. ("BaseMet") (independent of St Barbara) in September quarter of 2023. The test results indicated recovery on all 15-Mile ore sources of 97% was achievable.

Metallurgical testing for Beaver Dam was completed on drill core samples at ALS Metallurgy Ltd. ("ALS") (independent of St Barbara) in March quarter of 2015 and March quarter of 2021. Additional metallurgy testing for Beaver Dam was completed on drill core samples at BaseMet in March quarter of 2015 and March quarter of 2021. The test results indicated overall recovery on all Beaver Dam ore sources of 95.8% was achievable.

Recent metallurgical test work for Cochrane Hill was completed on drill core samples at Base Metallurgical Laboratories Ltd. ("BaseMet") (independent of St Barbara) in the September quarter of 2024. The test results indicate



recovery of 95% at a grind size of 150um. The test work indicates the material is amenable to conventional leaching techniques.

#### **Modifying factors**

No modifying factors have been applied to Mineral Resources.

## **Ore Reserve Estimate Summary – Beaver Dam and 15-Mile**

#### **Studies**

15-Mile and Beaver Dam studies have been progressed to Pre-Feasibility Studies (PFS) in 2024. These studies form the basis of the inputs into the 2025 Concept Study

#### **Classification criteria**

The basis for the classification was the Mineral Resources classification.

No portion of the Probable Ore Reserve has been derived from Inferred Mineral Resources.

#### **Mining method and assumptions**

Open pit optimisation for 15-Mile is run using Pseudoflow Ultimate economic pit limits are chosen independently for each deposit and range from 0.90 to 1.13 revenue factor pit shells. Pit designs incorporating further practical mining considerations, such as minimum mining width, bench configurations and ramp access are carried out using these target optimisation shells. The overall slopes used for the pit optimisation and design work were sourced from reports carried out by external geotechnical consultants, with overall slopes ranging from 35 to 51 degrees in the various geotechnical zones.

Minimum phase mining width is planned as 45 m, with pit bottoms designed down to 25 m.

Mining dilution and recovery factors have been incorporated based on grade control and reconciliation work completed on the nearby Touquoy gold mine, which was mined using the same methods and with the same equipment as proposed for 15-Mile. Global mining dilution of 1.6% @ 0.2 g/t gold grade and 98.4% mining recovery factors are applied to the Mineral Resource block model tonnages and grades.

The mine and mill production schedules are developed using the bench Ore Reserves and waste tonnages within the phased pit designs. Mine operations are planned as owner operated with conventional drill/blast/load/haul activities.

Mining cost estimates are built up from first principles. Equipment and operations productivity is based on historical production at the nearby Touquoy gold mine, and simulated hauler cycle times for all planned 15-Mile sources and destinations. Equipment fuel, lube, tire, equipment parts, explosives and labour usages rates have also been estimated based on experience from the nearby Touquoy gold mine as well as supplier recommendations. Costs inputs are based on supplier quotations in Q3 FY25.

Open pit optimisation for Beaver Dam is run using Pseudoflow. Ultimate economic pit limits are chosen based on a 0.80 revenue factor pit shell. Pit designs incorporating further practical mining considerations, such as minimum mining width, bench configurations and ramp access are carried out using these target optimisation shells. The overall slopes used for the pit optimisation and design work were sourced from reports carried out by external geotechnical consultants, with overall slopes ranging from 42 to 53 degrees in the various geotechnical zones.

Minimum phase mining width is planned as 45 m, with pit bottoms designed down to 25 m.

Mining dilution and recovery factors have been incorporated based on grade control and reconciliation work completed on the nearby Touquoy gold mine, which was mined using the same methods and with the same equipment as proposed for Beaver Dam. Global mining dilution of 1.6% @ 0.3 g/t gold grade and 98.4% mining recovery factors are applied to the Mineral Resource block model tonnages and grades.

The mine and mill production schedules are developed using the bench ore and waste tonnages within the phased pit designs. Mine operations are planned as owner operated with conventional drill/blast/load/haul activities.

Mining cost estimates are built up from first principles. Equipment and operations productivity is based on historical production at the nearby Touquoy gold mine, and simulated hauler cycle times for all planned Beaver Dam sources and destinations. Equipment fuel, lube, tire, equipment parts, explosives and labour usages rates have also been estimated based on experience from the nearby Touquoy gold mine as well as supplier recommendations. Costs inputs are based on supplier quotations in Q3 FY25.

#### **Processing method and assumptions**

The metallurgical testing confirmed Beaver Dam and 15-Mile ore are highly amenable to conventional recovery methods of gravity and carbon in leach cyanidation. Beaver Dam will be trucked to the proposed 15-Mile mill as whole-ore.



Process studies undertaken by Ausenco confirmed the Touquoy processing plant is suitable for high gold recovery from 15-Mile, Beaver Dam and Cochrane Hill ore and therefore the process flowsheet has been designed to maximise repurposing of Touquoy equipment at to reduce initial capital costs. The expansion to 3 Mtpa requires minimal changes to the overall process flowsheet, the expansion only requires an upgrade to the Ball Mill from a 3.5MW to a 5.5MW along with an additional leach tank to extend retention time.

Testwork indicates the ore is medium hardness with a bond mill work index approximately 13.8 (metric) for 15-Mile, 15.3 (metric) for Beaver Dam and 16.6. The process plant will operate 8,220 tonnes per day at a mill availability of 92%.

The process design for the Project consists of:

- Three stage crushing, consisting primary jaw crusher, secondary cone crusher and tertiary cone crusher with associated material handling and screening equipment;
- Grinding of crushed material to 80% passing 150 – 180 microns (depending on open pit source) with a 20ft (diameter) x 27ft (length) metre ball mill operating in closed circuit with hydrocyclones with the ball mill equipped with a 5.5 MW motor;
- A gravity concentration circuit is included with gold recovery up to 60% depending on ore type;
- Leaching and adsorption circuit includes two leach tank and six carbon-in-leach (CIL) tanks, for a total leach and adsorption retention time of 24 hours;
- Cyanide destruction using an SO<sub>2</sub>/air system on the final tailings slurry; and
- Final tails from the cyanide destruction circuit will be discharged to the tailings management facility.

#### **Cut-off grades**

COG estimates are based on a net value calculation that includes recoveries, gold price, payability; royalty, selling costs and operating costs associated with deposits. Economically positive blocks are considered for inclusion in the mining material. inventory.

#### **Estimation methodology**

The Beaver Dam and 15-Mile Ore Reserves are based on the underlying Mineral Resource classifications with the application of costs and modifying factors. Pit optimisations are run using these assumptions to generate the appropriate revenue factor shell. Pit designs are then generated using these shells along with practical mining considerations. Mine and mill productions schedules are generated using bench ore and waste tonnages within the phased pit designs.

#### **Approvals and infrastructure**

The Beaver Dam and 15-Mile projects assume Federal and Provincial Approvals prior to development. This includes permits such as Environmental Impact Study, MDMER and Fisheries Authorization.

Site infrastructure including buildings, water treatment and auxiliary support equipment has been updated from previous studies and estimated based on the 2025 Concept Study.

## **Cochrane Hill Concept Study assumptions**

#### **Studies**

Cochrane Hill was progressed to a PFS in 2019 by Atlantic Gold Corporation. Designs and assumptions have been updated in the 2025 Concept Study using first principles and benchmarks from the 15-Mile and Beaver Dam PFS.

#### **Classification Criteria**

The basis for the classification was the Mineral Resources classification.

No portion of the mine plan has been derived from Inferred Mineral Resources.

#### **Mining method and assumptions**

Open pit optimisation for Cochrane Hill is run using Pseudoflow. Chosen ultimate economic pit limits are based on a 0.78 revenue factor pit shells. Pit designs incorporating further practical mining considerations, such as minimum mining width, bench configurations and ramp access are carried out using this target optimisation shell. The overall slopes used for the pit optimisation and design work were sourced from reports carried out by external geotechnical consultants, with overall slopes ranging from 29 to 49 degrees in the various geotechnical zones.

Minimum phase mining width is planned as 45 m, with pit bottoms designed down to 25 m.



Mining dilution and recovery factors have been incorporated based on grade control and reconciliation work completed on the nearby Touquoy gold mine, which was mined using the same methods and with the same equipment as proposed for Cochrane Hill. Global mining dilution of 1.6% @ 0.3 g/t gold grade and 98.4% mining recovery factors are applied to the Mineral Resource block model tonnages and grades.

The mine and mill production schedules are developed using the diluted bench mill feed and waste tonnages within the phased pit designs. Mine operations are planned as owner operated with conventional drill/blast/load/haul activities.

Mining cost estimates are built up from first principles. Equipment and operations productivity is based on historical production at the nearby Touquoy gold mine, and simulated hauler cycle times for all planned Cochrane Hill sources and destinations. Equipment fuel, lube, tire, equipment parts, explosives and labour usages rates have also been estimated based on experience from the nearby Touquoy gold mine as well as supplier recommendations. Costs inputs for these supplies and workers are based on internal Canadian cost databases dated in Q3 FY25.

### **Processing method and assumptions**

The metallurgical testing confirmed Cochrane Hill mill feed is highly amenable to conventional recovery methods of gravity and carbon in leach cyanidation. Cochrane Hill will be trucked to the proposed 15-Mile mill as whole-ore.

Process studies undertaken by Ausenco confirmed the Touquoy processing plant is suitable for high gold recovery from 15-Mile, Beaver Dam and Cochrane Hill mineralisation and therefore the process flowsheet has been designed to maximise repurposing of Touquoy equipment at to reduce initial capital costs. The expansion to 3 Mtpa requires minimal changes to the overall process flowsheet, the expansion only requires an upgrade to the Ball Mill from a 3.5MW to a 5.5MW along with an additional leach tank to extend retention time.

Mill feed from Cochrane Hill pit will be transported 70km respectively via public roads. No modifications are needed at the process plant to accommodate these two mill feed sources.

Testwork indicates the mineralisation is medium hardness with a bond mill work index approximately 16.6 (metric) for Cochrane Hill. The process plant will operate 8,220 tonnes per day at a mill availability of 92%.

The process design for the Project consists of:

- Three stage crushing, consisting primary jaw crusher, secondary cone crusher and tertiary cone crusher with associated material handling and screening equipment;
- Grinding of crushed material to 80% passing 150 – 180 microns (depending on open pit source) with a 20ft (diameter) x 27ft (length) metre ball mill operating in closed circuit with hydrocyclones with the ball mill equipped with a 5.5 MW motor;
- A gravity concentration circuit is included with gold recovery up to 60% depending on mill feed type;
- Leaching and adsorption circuit includes two leach tank and six carbon-in-leach (CIL) tanks, for a total leach and adsorption retention time of 24 hours;
- Cyanide destruction using an SO<sub>2</sub>/air system on the final tailings slurry; and
- Final tails from the cyanide destruction circuit will be discharged to the tailings management facility.

### **Cut-off Grades**

COG estimates are based on a net value calculation that includes recoveries, gold price, payability; royalty, selling costs and operating costs associated with deposits. Economically positive blocks are considered for inclusion in the mining material inventory.

### **Estimation Methodology**

The Cochrane Hill estimate of material used in the concept study is based on the underlying Mineral Resource classifications with the application of costs and modifying factors. Pit optimisations are run using these assumptions to generate the appropriate revenue factor shell. Pit designs are then generated using these shells along with practical mining considerations. Mine and mill productions schedules are generated using bench tonnages within the phased pit designs.

### **Approvals and Infrastructure**

The Beaver Dam and 15-Mile projects assume Federal and Provincial Approvals prior to development. This includes permits such as Environmental Impact Study, MDMER and Fisheries Authorisation.

Site infrastructure including buildings, water treatment and auxiliary support equipment has been updated from previous studies and estimated based on the 2025 concept Study.