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10 October 2023

## Strong 15 Mile Project Pre-feasibility Results

NPV<sub>5</sub> of A\$198 million and Post Tax IRR of 20.3% at US\$1,700/oz gold price

### Highlights

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- **Ore Reserves:** Increased by 7% to 618,000 ounces of contained gold.
  - **Mineral Resources:** Increased by 7% to 836,000 ounces of contained gold.
  - **Strong Project Economics:** Post-tax NPV (discount rate 5%) of C\$174 million (A\$198 million) and post-tax IRR of 20.3% using a long-term gold price of US\$1,700 per ounce, exchange rates of C\$1.00 = US\$0.78 and C\$1.00 = A\$1.14.
  - **Capital Efficient Outcome:** Initial capital of C\$182 million (A\$207 million) including mine pre-production, mine fleet, processing, and infrastructure (roads, power distribution, tailings facility, ancillary buildings and water management).
  - **Low unit costs:** Life of mine All-In Sustaining Cost for this low strip ratio project estimated to be US\$992 per ounce (A\$1,445 per ounce).
  - **Efficient Layout:** Consolidation of infrastructure and efficient storage of waste and low-grade materials has greatly reduced surface disturbance.
  - **Stable Production Profile:** Average 55 – 60 koz gold produced per year over the 11 year life of mine.
  - **Short Construction and Ramp-Up Time Frame:** Optimised starter tailings dam will shorten construction time frame to <12 months. Utilisation of existing equipment from Touquoy mine will de-risk commissioning and allow for short ramp up to commercial production.
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St Barbara Limited (“**St Barbara**” or the “**Company**”) (ASX: SBM) is pleased to announce the completion of the Pre-feasibility Study (PFS) of its 100% owned 15 Mile Project, in Trafalgar, Nova Scotia, prepared in accordance with Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (“the JORC Code”).

Previously identified as “Fifteen Mile Stream Gold Project”, the 15 Mile Project has been modified from producing flotation and gravity concentrates to delivering gold dore bars through conventional gravity and carbon in leach cyanidation techniques. The change of project design allows for the reuse of the existing Touquoy processing plant, reducing the capital expenditure from previous management estimates and improving overall gold recoveries from direct whole ore leach as opposed to leaching of concentrates. The Project design layout has undergone a complete revision to achieve minimal disturbance and maximum capital and operating cost efficiency.

Managing Director and CEO Andrew Strelein stated “*With this strong PFS result, St Barbara will now focus on preparation of an updated environmental and social impact assessment for this new standalone design of the 15 Mile Project. St Barbara is looking forward to working with Nova Scotia to create hundreds of well paid rural jobs and to remediating the historical tailings at the site. The Feasibility Study engineering is intended to be ramped up as we see progress towards Environmental Approval with commencement of development entirely achievable in mid calendar 2026.*”



The PFS does not incorporate the possibility of the transport of ore from St Barbara's Beaver Dam property located 25 kilometres to the south-west of 15 Mile Project. St Barbara anticipates updating the Mineral Resource and Ore Reserve for Beaver Dam during the March 2024 quarter.

### Overview

The 15 Mile Project is located approximately 40 kilometres northeast of the Touquoy Mine in Nova Scotia, Canada (Figure 1). The PFS 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 PFS.

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

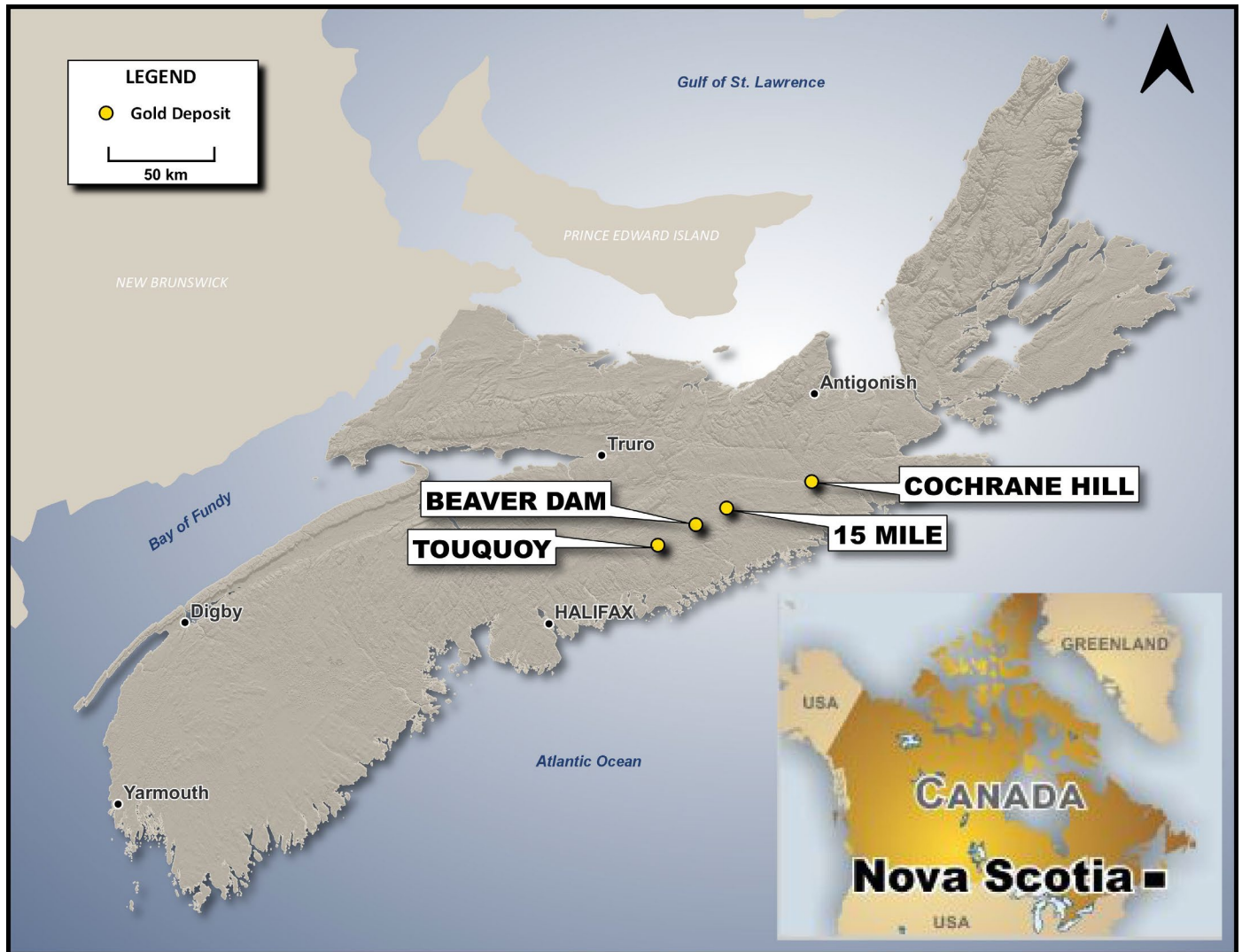
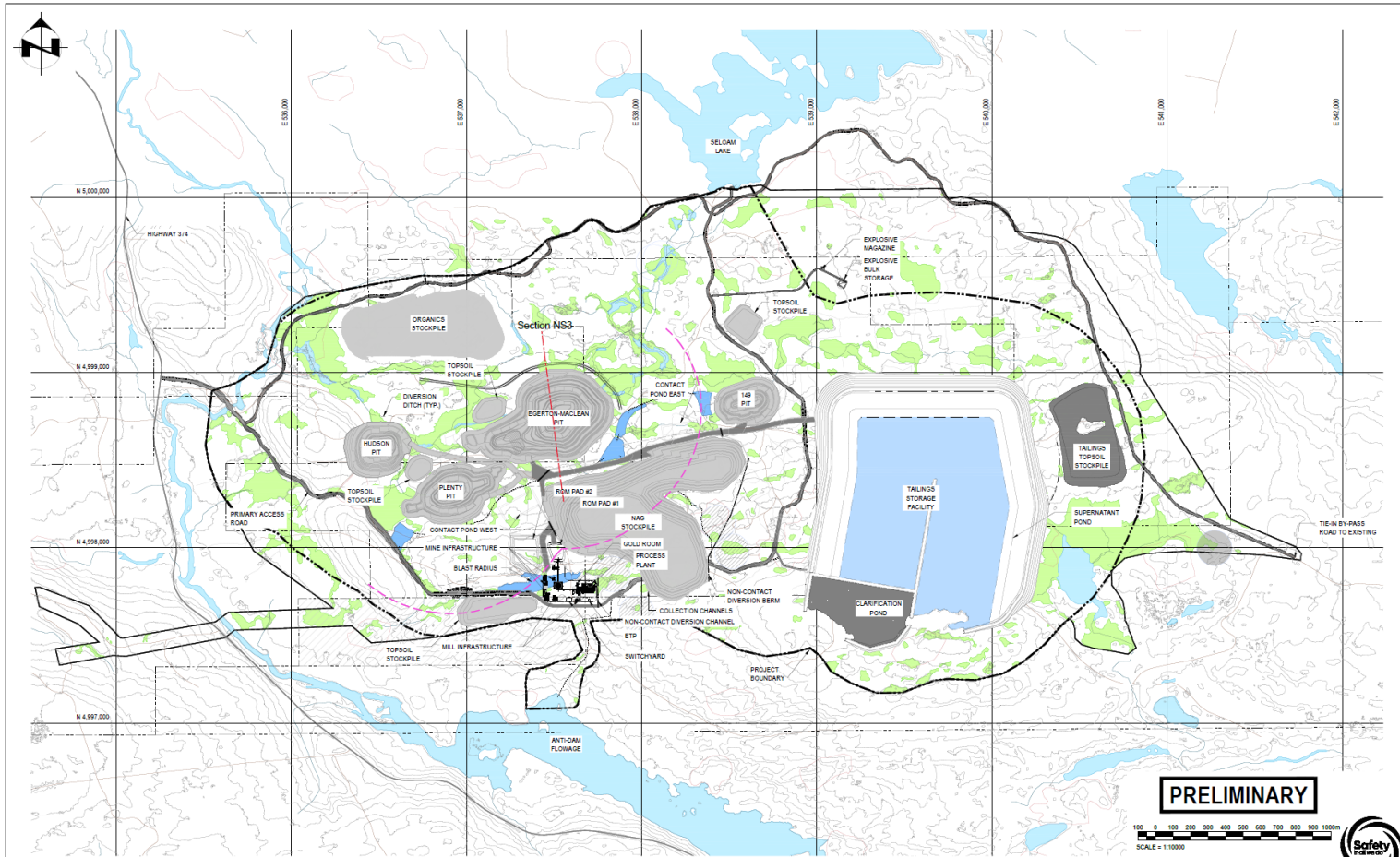


Figure 2: Overall Proposed 15 Mile Site Layout (note location of cross-section NS3 through the Egerton-MacLean Pit shown in Figure 5)



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## Project Economics

A summary of the 15 Mile Project economics is listed in Tables 1-1 to 1-4 and shown graphically in the figures below. On a pre-tax basis, the net present value (NPV) is C\$220 million (A\$250 million) and the internal rate of return (IRR) is 22.0%. On a post-tax basis, the NPV is C\$174 million (A\$198 million) and the IRR is 20.3%.

**Table 1-1: Project Economics**

Project Economics	Unit	Life of Mine (LOM) Total or Average	Life of Mine (LOM) Total or Average
Gold Price	US\$/oz	\$1,700	\$1,900
Exchange Rate	C\$:US\$	0.78	0.78
Cash Costs <sup>1</sup>	US\$/oz Au	\$817	\$821
All-In Sustaining Cost <sup>2</sup>	US\$/oz Au	\$992	\$996
Pre-Tax NPV (5%)	C\$M	\$220	\$329
Pre-Tax NPV (5%)	A\$M	\$250	\$374
Pre-Tax IRR	%	22.0%	29.2%
Pre-Tax Payback	years	4.3	3.4
Post-Tax NPV (5%)	C\$M	\$174	\$254
Post-Tax NPV (5%)	A\$M	\$198	\$289
Post-Tax IRR	%	20.3%	26.6%
Post-Tax Payback	years	4.3	3.4
Post-Tax NPV/Capex Ratio	-	0.96	1.40

**Table 1-1: Capital Costs**

Capital Costs	Life of Mine (LOM) Total	Life of Mine (LOM) Total
	C\$M	A\$M
Initial Capital	\$182	\$207
Sustaining Capital	\$76	\$86
Closure Costs	\$68	\$77
Salvage Costs	\$10	\$11

<sup>1</sup> Cash costs consist of mining costs, processing costs, mine-level general and administrative costs and refining/transport charges and royalties.

<sup>2</sup> All-In Sustaining Costs include cash costs plus sustaining capital and closure costs (net of salvage value).



**Table 1-3: Operating Costs**

Operating Costs	Unit	Life of Mine (LOM) Average
Mining Cost	\$C/t mined	\$4.12
Mining Cost	\$C/t milled	\$14.38
Processing Cost	\$C/t milled	\$13.01
G&A Cost	\$C/t milled	\$5.08
<b>Total Operating Cost</b>	<b>\$C/t milled</b>	<b>\$32.47</b>

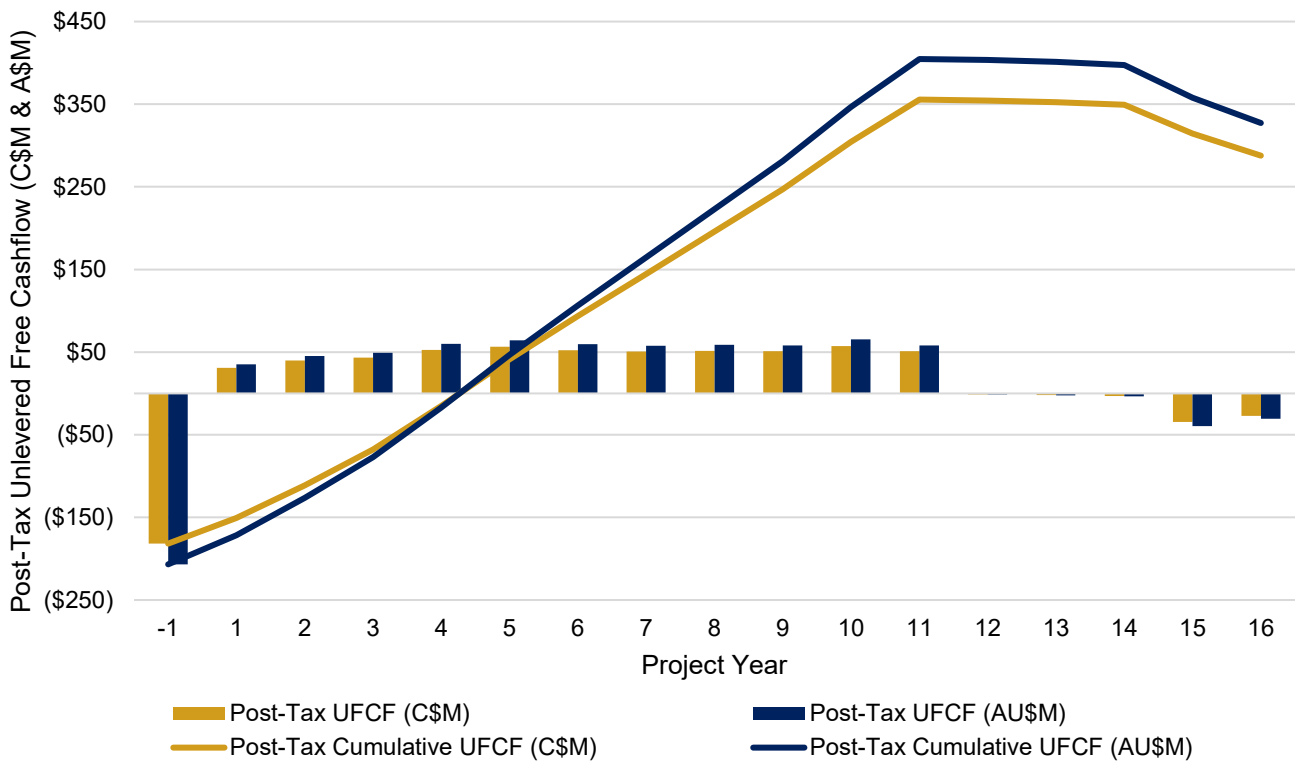
**Table 1-4: Production Summary**

Production Summary	Unit	Life of Mine (LOM) Total or Average
Mine Life	years	11
Total Waste Mined	Kt	52,135
Total Ore Mined	Kt	18,467
Average Strip Ratio	w:o	2.8
Total Mill Feed Tonnes	Kt	18,467
Average Mill Feed Grade	g/t	1.04
Total Contained Gold	koz	618
Total Recovered Gold	koz	600
Average Gold Recovery	%	97.1%
Average Annual Gold Production	koz	56



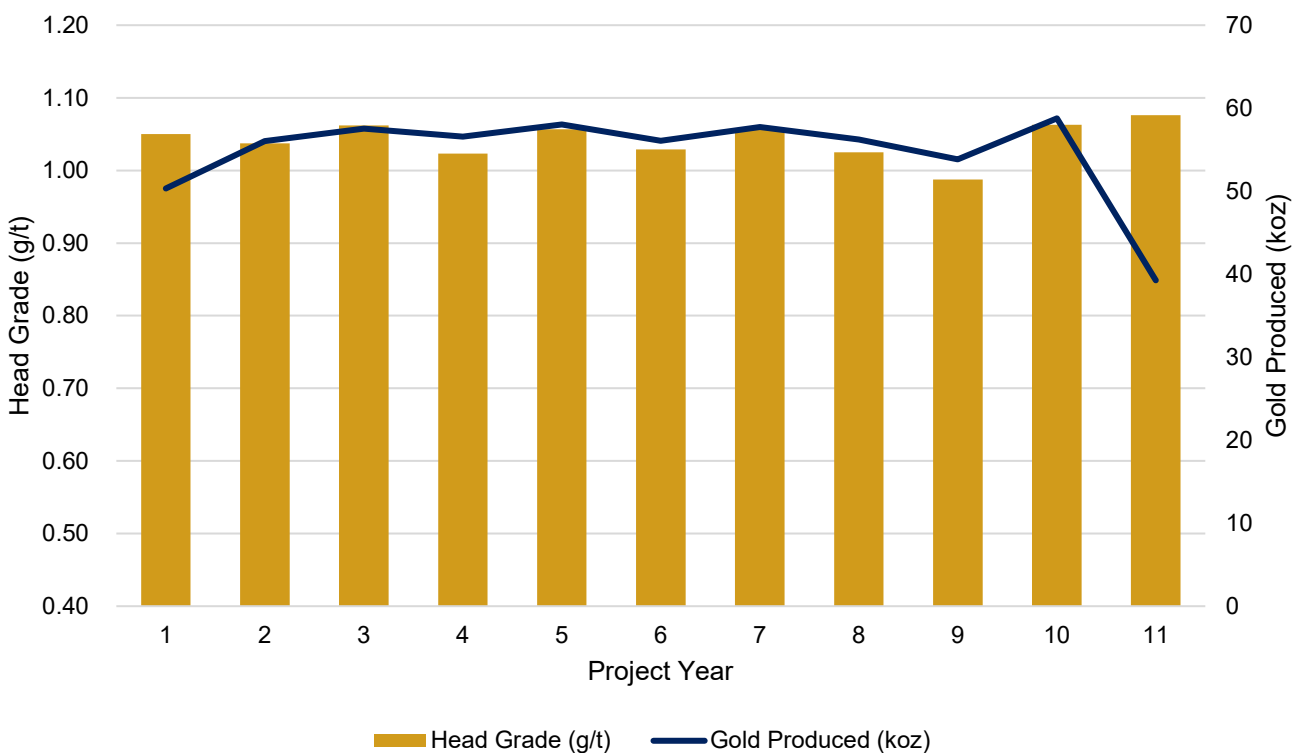
## Post-Tax-Free Cash Flow

Figure 3: Projected Annual and Cumulative LOM Post-Tax Unlevered Free Cash Flow



## Gold Production

Figure 4: Projected LOM Production (koz)





## Sensitivity Analysis

A sensitivity analysis was conducted on the base case after-tax NPV and IRR of the 15 Mile Project. Tables 2 and 3 below provide a summary using the following variables: gold price, initial capital expenditure (Capex), total operating cost in both C\$M and A\$M.

**Table 2: Post-Tax NPV (5%) Sensitivity, C\$M**

Gold Price (US\$/oz)	Base Case	Initial Capex (-10%)	Initial Capex (+10%)	Opex (-10%)	Opex (+10%)	FX (0.70)	FX (0.85)
\$1,600	\$134	\$148	\$120	\$167	\$101	\$208	\$79
\$1,700	\$174	\$188	\$160	\$207	\$142	\$252	\$118
\$1,800	\$214	\$228	\$200	\$247	\$182	\$296	\$155
\$1,900	\$254	\$268	\$240	\$286	\$222	\$340	\$192

**Table 3: Post-Tax NPV (5%) Sensitivity, A\$M**

Gold Price (US\$/oz)	Base Case	Initial Capex (-10%)	Initial Capex (+10%)	Opex (-10%)	Opex (+10%)	FX (0.70)	FX (0.85)
\$1,600	\$152	\$168	\$137	\$190	\$115	\$237	\$90
\$1,700	\$198	\$214	\$182	\$236	\$162	\$287	\$134
\$1,800	\$244	\$259	\$228	\$281	\$207	\$337	\$176
\$1,900	\$289	\$305	\$273	\$325	\$253	\$387	\$218

**Table 4: Post-Tax IRR Sensitivity**

Gold Price (US\$/oz)	Base Case	Initial Capex (-10%)	Initial Capex (+10%)	Opex (-10%)	Opex (+10%)	FX (0.70)	FX (0.85)
\$1,600	16.9%	19.3%	14.9%	19.8%	14.0%	22.9%	12.3%
\$1,700	20.3%	22.8%	18.1%	23.1%	17.4%	26.4%	15.6%
\$1,800	23.5%	26.3%	21.1%	26.2%	20.7%	29.8%	18.7%
\$1,900	26.6%	29.7%	24.0%	29.3%	23.9%	33.1%	21.7%



## Mineral Resources

The PFS is based on a Mineral Resource estimate completed for an earlier unpublished study in April 2022 by FSSI Consultants.

The previous Measured, Indicated and Inferred Mineral Resources reported at 31 December 2022 was 23.65 Mt @ 1.0g/t Au containing 781,000 ounces of gold. This has increased by 55,000 ounces of gold to 24.52 Mt @ 1.1g/t Au containing 836,000 ounces of gold. The increase is due to the inclusion of the previously unreported 149 deposit and reporting the Mineral Resource at a higher gold price of US\$2,000/oz (previously US\$1,800/oz).

**Table 5: 15 Mile Mineral Resources Summary**

Deposit	Measured			Indicated			Total Measured and Indicated			Inferred		
	Tonnes (Mt)	Grade (g/t Au)	Gold ('000)	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>Egerton - Maclean</b>	2.57	1.2	101	12.86	1.1	461	15.43	1.1	562	1.36	1.3	56
<b>Plenty</b>	0.2	1.1	7	2.78	1.0	86	2.98	1.0	93	0.67	1.5	33
<b>Hudson</b>	0.7	0.8	18	1.16	0.7	26	1.86	0.7	44	0.19	1.0	6
<b>149</b>	0.95	0.7	21	0.93	0.6	19	1.88	0.7	40	0.15	0.6	3
<b>Total</b>	<b>4.41</b>	<b>1.0</b>	<b>147</b>	<b>17.73</b>	<b>1.0</b>	<b>592</b>	<b>22.15</b>	<b>1.0</b>	<b>739</b>	<b>2.37</b>	<b>1.3</b>	<b>98</b>

**Notes:**

1. Mineral Resources are reported inclusive of Ore Reserves.
2. Mineral Resources are based on a gold price of US\$2,000/oz
3. Mineral Resources are reported at a cutoff grade of 0.30 g/t Au.
4. Summation errors may occur due to rounding.





## Ore Reserves

The PFS is based on an Ore Reserve estimate completed September 29, 2023 by Moose Mountain Technical Services.

The previous Proved and Probable Ore Reserves reported at 31 December 2022 was 16.7 Mt @ 1.1g/t Au containing 577,000 ounces of gold. This has increased by 41,000 ounces of gold to 18.5 Mt @ 1.0 g/t Au for 618,000 ounces of contained gold. The increase is due to the inclusion of the previously unreported 149 deposit and reporting the Ore Reserve at a higher gold price of US\$1,500/oz (previously US\$1,300/oz).

**Table 6: 15 Mile Ore Reserves Summary**

Deposit	Proved			Probable			Total		
	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>Egerton-MacLean</b>	2.55	1.2	99	10.78	1.1	387	13.33	1.1	486
<b>Plenty</b>	0.18	1.1	6	1.75	1.0	54	1.93	1.0	60
<b>Hudson</b>	0.68	0.8	17	1.20	0.7	27	1.88	0.7	44
<b>149</b>	0.78	0.7	17	0.54	0.6	11	1.33	0.7	28
<b>Total</b>	<b>4.20</b>	<b>1.0</b>	<b>140</b>	<b>14.27</b>	<b>1.0</b>	<b>478</b>	<b>18.47</b>	<b>1.0</b>	<b>618</b>

Notes:

- Ore Reserves are based on a gold price of C\$1,920/oz (US\$1,500/oz @ 0.78 C\$/US\$)
- Ore Reserves are reported at a cutoff grade of 0.30 g/t Au.
- Summation errors may occur due to rounding.

## Operations

### Mining

The 15 Mile Project will be mined with a conventional drill, blast and haul setup. There are four open pits: Egerton-Maclean, Plenty, Hudson and 149. In summary:

- The peak mining rate is 8.7 million tonnes per year over a mine life of 11 years;
- A total of 18.5 million tonnes of ore will be mined at an average grade of 1.04 g/t, with a total of 52.1 million tonnes of waste mined, resulting in a stripping ratio of 2.8 tonnes waste per tonne of ore;
- The primary production equipment includes 4.5 m<sup>3</sup> bucket production excavators and 64 tonne payload off highway mining trucks; and
- Stockpile rehandling is minimal with two small Run of Mine stockpiles for storing mill feed, with peak inventory of 0.5 million tonnes.

Changes to the previously intended mining sequence were undertaken to allow for smooth production profile across life of mine and use of exhausted open pits for backfill of selected waste to further reduce environmental disturbance.

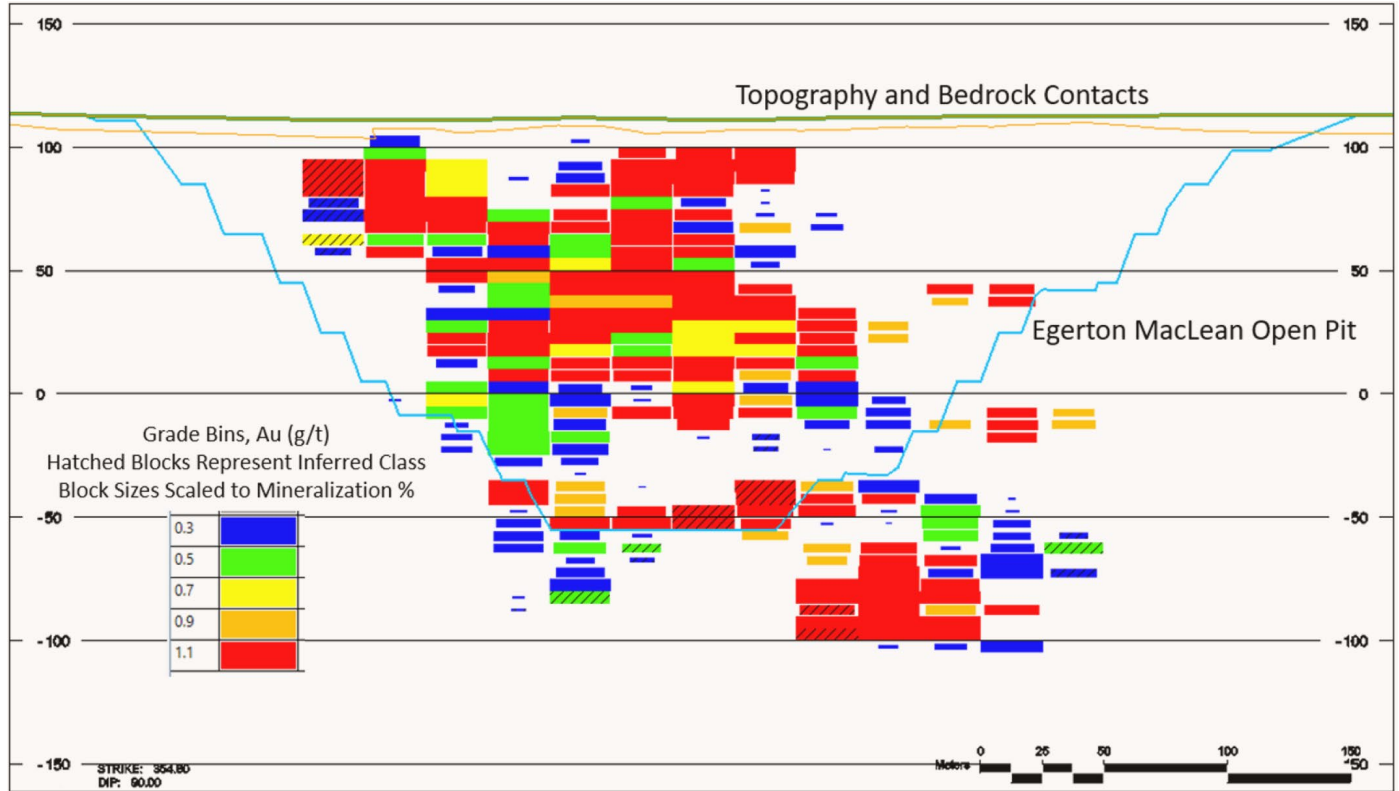
**Table 7: PFS Mine Plan Production Summary**

Parameter	Units	Life of Mine	Y-1	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11
Total Tonnage Mined	kt	70,601	6,073	8,663	8,000	7,500	7,500	7,475	7,000	5,591	4,127	2,984	3,466	2,222
Waste Tonnage Mined	kt	52,135	5,815	7,362	6,250	5,750	5,750	5,725	5,250	3,841	2,376	1,234	1,716	1,065
ROM Ore Tonnage Mined	kt	18,467	258	1,300	1,750	1,750	1,750	1,750	1,750	1,750	1,750	1,750	1,750	1,157
Strip Ratio	W:O	2.8	22.5	5.7	3.6	3.3	3.3	3.3	3.0	2.2	1.4	0.7	1.0	0.9
ROM Gold Head Grade	g/t	1.04	0.93	1.05	1.04	1.06	1.02	1.06	1.03	1.06	1.03	0.99	1.06	1.08



Figure 5 shows a cross-section view through Egerton-Maclean pit (location of the cross-section is shown in Figure 2). Blocks in the section view show gold grade in all blocks above a 0.30 g/t gold cut-off. 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 blue lines the ultimate pit shell.

**Figure 5: Cross Section NS3 through Egerton-Maclean pit looking West**



### Metallurgical Recoveries

Metallurgical testing 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 ore sources of 97% was achievable.

### Processing

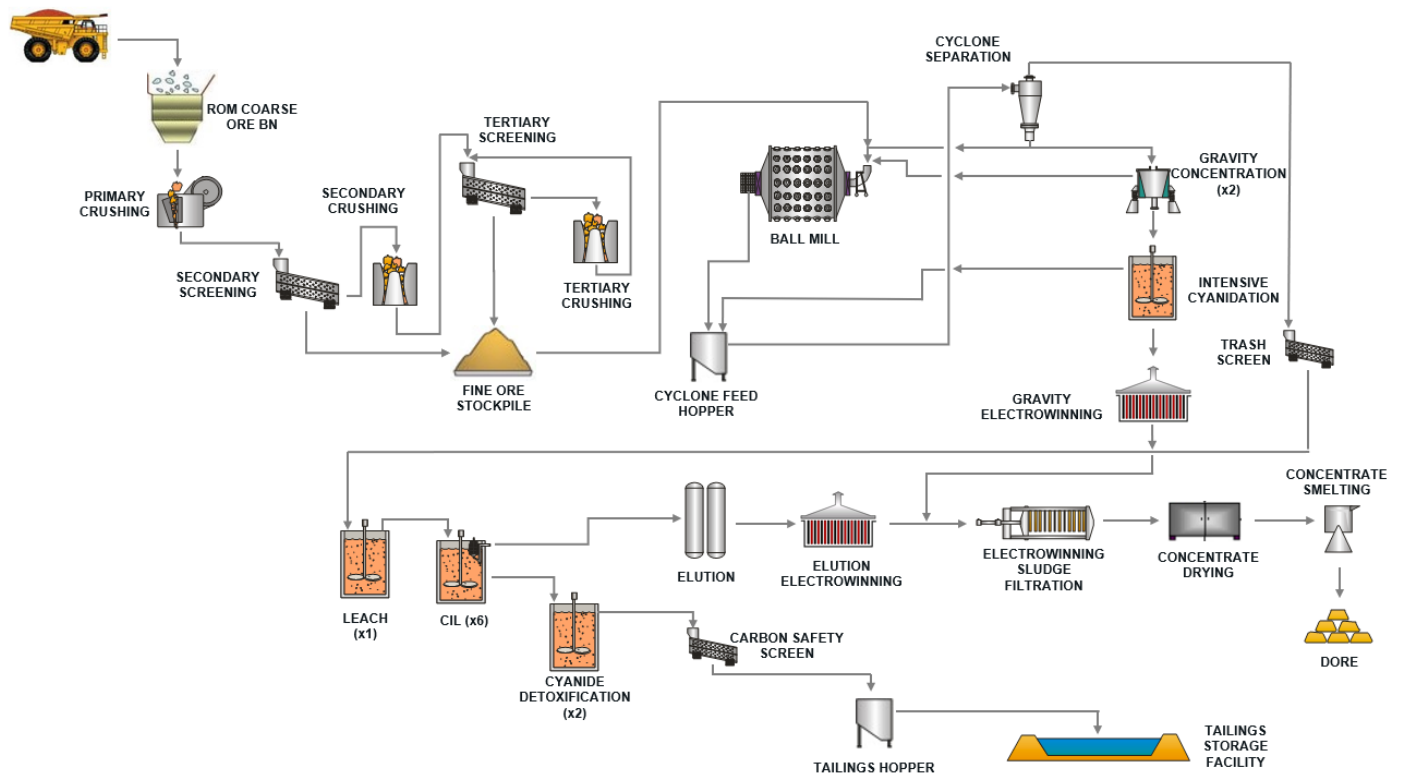
The metallurgical testing confirmed the 15 Mile ore is highly amenable to conventional recovery methods of gravity and carbon in leach cyanidation, similar to the Touquoy operation 40 km away. The process review undertaken by Ausenco confirmed the Touquoy processing plant is suitable for recovering gold from 15 Mile ore and therefore the process flowsheet for 15 Mile has been designed to maximise repurposing of Touquoy equipment at 15 Mile to reduce initial capital costs. Previously completed testwork indicates the ore is medium hardness with a Bond ball mill work index approximately 13.8 (metric). The processing plant will operate at 1.75 million tonnes per annum, or 4,800 tonnes per day at 92% availability.

The process design for the 15 Mile 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 5 (diameter) x 8 (length) metre ball mill operating in closed circuit with hydrocyclones with the ball mill equipped with a 3.5 MW motor;
- A gravity concentration circuit is included in the grinding area with gold recovery up to 60% expected from the gravity concentrate depending on ore type;
- Leaching and adsorption circuit includes one 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 6: 15 Mile Process Flow Diagram



### Tailings Management

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). The total storage capacity of the tailings facility is 24.5 million cubic metres (Mm<sup>3</sup>).



## Capital Costs

The total initial (pre-production) capital cost for the 15 Mile Project is estimated to be C\$182 million (A\$207 million) including allowances for contingency. Sustaining costs are estimated to be C\$76 million (A\$86 million) over the life of mine with closure costs estimated to be C\$68 million (A\$77 million).

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

- Mining initial capital costs were developed by MMTS. Costs include the owner's lease to own mine fleet, and pre-production mine operating costs for mining 6.1 Mt of material from the open pits, targeting waste rock quantities for construction purposes.
- Mining sustaining capital costs were developed by MMTS and include ongoing equipment lease payments;
- Processing, infrastructure, project delivery and project indirect costs were developed by Ausenco, and are inclusive of a 1.75 Mtpa conventional leach/CIL processing plant, power substation, tailings facility initial construction, diversion of Seloam Brook and other required infrastructure with repurposing of Touquoy fixed plant equipment captured in the processing capital costs where cost effective; and
- Sustaining capital costs for infrastructure mainly consists of tailings management facility lifts that occur through life of mine.

**Table 8: Initial and Sustaining Capital Costs (C\$M)<sup>3</sup>**

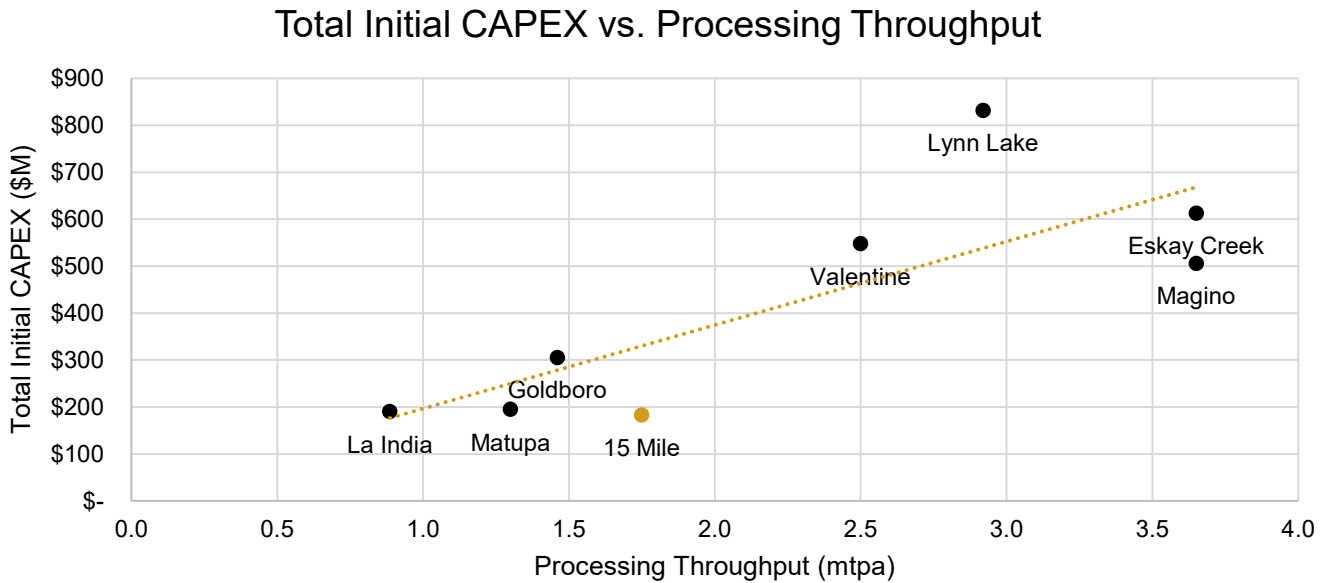
Area	Initial Capital (C\$M)	LOM Sustaining Capital (C\$M)	Total Capital (C\$M)
Mining	37	45	83
Processing	55	-	55
Tailings Management	15	20	35
On Site Infrastructure	16	-	16
Project Indirect costs	20	-	20
Owner's Costs	14	11	25
Contingency	25	-	25
<b>Total</b>	<b>182</b>	<b>76</b>	<b>258</b>

The total initial capital cost of C\$182M is comparatively low against other similar scale projects in North and Central America, mostly due to the consolidated layout/lean design and reuse of existing processing equipment versus outright new purchase. Figure 8 shows the total initial capital cost plotted against yearly mill throughput for 15 Mile Project alongside other similar gold projects. All the comparison projects come from published NI 43-101 Feasibility Studies. All the other projects are open pit gold mining operations.

<sup>3</sup> Does not include salvage value and closure costs. Numbers are rounded to the near whole value and may not add up.



Figure 8: Total Initial CAPEX<sup>4</sup> vs. Processing Throughput for 15 Mile and Similar Projects



### Operating Costs

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

- Mining unit costs have been estimated by MMTS, built up from first principles, and utilising 2023 vendor quotes and internal database cost inputs;
- Processing unit costs have been estimated by Ausenco using first principles, experience at Touquoy process plant and 2023 prices for major reagents and media; and
- G&A costs are based on experience with Touquoy project adjusted for current pricing.

Table 9: Total Life of Mine Operating Costs

Cost Centre	C\$/t milled
Processing	13.01
Mining	14.38
G&A	5.08
<b>Total Site Operating Cost</b>	<b>32.47</b>

<sup>4</sup> Costs from published NI43-101 Feasibility Studies, with pricing escalated to 2023 Canadian Dollars where required. Refer to Appendix 1 Supporting Sources for more details.



## Social Acceptability and License to Operate

In addition to applicable regulations, the 15 Mile Project will require social acceptance. Early information and engagement meetings have been held with local communities, First Nation communities, and local, provincial, and federal governmental authorities to initiate collaborative work to obtain social acceptability of the project. Feedback has significantly influenced several of the changes in design of this standalone project.

The Project will be subject to federal and provincial environmental regulations. Environmental baseline studies and analysis are well advanced which will support a simplified permitting timeline.

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 PFS results with host communities.

## Environmental Considerations

The 15 Mile Project as now proposed has taken into consideration environmental limitations and opportunities within the Project area together with feedback on the previous design. Environmental constraints and potential interactions were considered in proposed location of infrastructure and materials management decisions. This has resulted in a decrease in environmental impacts compared to previous designs. The new approach to the Project means no truck movements of concentrate as previously anticipated in earlier designs.

### Project Footprint

The Project design has been undertaken in full consideration of both direct (e.g. wetland avoidance where possible) and indirect (e.g. surface water changes) potential environmental interactions. Project design decisions have reduced the pathways of potential environmental effects, such as through the sub-aqueous management of acid generating waste which removes the potential for interactions with freshwater on site. Best management practices will be applied, and additional mitigation may be identified through the environmental permitting process. Where environmental impacts cannot be avoided, compensation will be applied where there is a mechanism to do so, such as through compensation for wetland and fish habitat areas, and the acquisition and protection of conservation lands outside of the Project area.

### Waterway Rehabilitation

Seloam Brook runs through areas of historic tailings within the 15 Mile Project area. Seloam Brook and its watershed is highly disturbed and has been impacted by power infrastructure and historic mining. Presently the area contains tailings and byproducts of the historic mining process. As part of St Barbara's 15 Mile Project, Seloam Brook will be realigned 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.

## Next Steps

Following the release of this PFS, St Barbara will now focus on preparation of updated environmental and social impact assessment for this new standalone design of the 15 Mile Project. The Feasibility Study engineering is intended to be ramped up as St Barbara sees progress towards Environmental Approval with commencement of development considered entirely achievable in mid calendar 2026.

St Barbara is well-funded to progress the Feasibility Study as well as preparing the required environmental submissions.

### Authorised by

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## Appendix 1 Supporting Sources

**Table 10 outlines total initial capital costs for 15 Mile and other similar gold mining projects in North and Central America.** These projects are all open pit, gold projects using conventional recovery methods. The capital costs come from published NI 43-101 compliant Feasibility Study level reports converted using appropriate currency conversions where applicable. Adjusted capital was calculated using published Consumer Price Index scaling factors to adjust to 2023 dollars.

**Table 10: Recently published total initial capital costs of gold projects in North and Central America**

Company	Project	Published Initial Capex (C\$M)	Publish date	Adjusted 2023 Initial CAPEX (C\$M)	Throughput (mtpa)	Location	Ref
Signal Gold	Goldboro	\$ 279	Dec-21	\$ 306	1.5	Canada	1
Skeena	Eskay Creek	\$ 592	Aug-22	\$ 613	3.7	Canada	2
Marathon Gold	Valentine	\$ 534	Nov-22	\$ 548	2.5	Canada	3
Alamos	Lynn Lake	\$ 810	Aug-23	\$ 832	2.9	Canada	4
Argonaut Gold	Magino	\$ 470	Feb-22	\$ 506	3.7	Canada	5
St Barbara	15 Mile	\$ 182	Sep-23	\$ 182	1.8	Canada	-
Aura Minerals	Matupa	\$ 188	Aug-22	\$ 195	1.3	Brazil	6
Condor Minerals	La India	\$ 185	Oct-22	\$ 190	0.89	Nicaragua	7

### Notes:

- NI 43-101 Technical Report and Feasibility Study for the Goldboro Gold Project, Eastern Goldfields District, Nova Scotia: <https://cdn-dms-issuerservices.s3.amazonaws.com/3135/100443/1642699787/19JAN2022%2020048-02%20NI%2043%20101%20FS%20FINAL.pdf>
- Skeena Completes Robust Feasibility Study for Eskay Creek: After-Tax NPV (5%) of C\$1.4B, 50% IRR and 1 Year Payback: [https://skeenaresources.com/site/assets/files/6521/09\\_08\\_2022\\_skeena\\_completes\\_robust\\_feasibility\\_study\\_for\\_eskay\\_creek\\_final7.pdf](https://skeenaresources.com/site/assets/files/6521/09_08_2022_skeena_completes_robust_feasibility_study_for_eskay_creek_final7.pdf)
- Valentine Gold Project NI 43-101 Technical Report and Feasibility Study: [https://marathon-gold.com/site/uploads/2022/12/FINAL-REPORT-Valentine-Gold-43-101-FS\\_Dec20compressed.pdf](https://marathon-gold.com/site/uploads/2022/12/FINAL-REPORT-Valentine-Gold-43-101-FS_Dec20compressed.pdf)
- Alamos Gold Announces Updated Feasibility Study for the Lynn Lake Project Outlining Larger, Longer-Life, Low-Cost Operation in Canada with Attractive Economics and Significant Exploration Upside: [https://s24.q4cdn.com/779615370/files/doc\\_news/2023/Aug/20230802-Lynn-Lake-Feasibility-Study\\_FINAL.pdf](https://s24.q4cdn.com/779615370/files/doc_news/2023/Aug/20230802-Lynn-Lake-Feasibility-Study_FINAL.pdf)
- Magino Gold project Ontario, Canada NI 43-101 Technical Report Mineral Resource and Mineral Reserve Update: [https://minedocs.com/22/Magino\\_TR\\_02142022.pdf](https://minedocs.com/22/Magino_TR_02142022.pdf)
- Feasibility Study Technical Report (NI 43-101) for the Matupa Gold Project, Matupa Municipality, Mato Grosso, Brazil: <https://auraminerals.com/en/operations/?data-id=matupa>
- Condor Gold Technical Project on the La India Gold Project, Nicaragua, 2022: [http://ca.condorgold.com/sites/default/files/technical\\_reports/31246\\_La%20India%20NI43-101\\_FS\\_V251022\\_SS.pdf](http://ca.condorgold.com/sites/default/files/technical_reports/31246_La%20India%20NI43-101_FS_V251022_SS.pdf)
- Exchange rate applied where necessary of C\$1.00 = US\$0.78.
- Bank of Canada published Consumer Price Index used to scale to 2023 dollars where required: <https://www.bankofcanada.ca/rates/price-indexes/cpi/>



## JORC Code Compliance Statements

The information in this report that relates to Ore Reserves is based on information compiled by Mr. 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 the statement of the matters based on his information in the form and context in which it appears.

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 the statement of the matters based on her information in the form and context in which it appears.

### JORC Table 1 Checklist of Assessment and Reporting Criteria

#### Section 1 Sampling Techniques and Data – 15 Mile (Egerton – Maclean, Plenty, Hudson and 149)

Criteria	Comments
<b>Sampling Techniques</b>	<ul style="list-style-type: none"> <li>• 1985: Quartz vein material cut using core saw. Average sample length of 0.28m</li> <li>• 1986-1988: Whole core split using core-splitter. Samples included quartz veins and adjacent wall rock and zones of elevated sulphide content.</li> <li>• 2009-2010: Resampling program. Sampled intervals represented previously unsampled core that generally did not include quartz veins or significant alteration. Resample length was generally determined by subdividing the sample length into regular intervals of 3 ft (91 cm) or less, although in some case intervals did exceed 3 ft.</li> <li>• 2011: Sawn to half core using diamond-tipped core saw. Maximum sample length of 1.5 m and minimum sample length of 0.25 m.</li> <li>• 2016-2017: Core samples sawn to half core using a diamond-tipped core saw. Nominal 1 m sample intervals. Samples were dispatched from Atlantic’s core facility in Moose River, directly to ALS in Sudbury, ON.</li> <li>• 2017-2018: Selectively based on geology, core samples have been processed as: (1) sawn to half core using a diamond-tipped core saw with nominal 1m half-core sample intervals; or (2) after core has been geologically logged and photographed, whole core has been sampled on 1 m sample intervals. Samples were dispatched from Atlantic’s core facility in Moose River, directly to ALS in Sudbury, ON</li> <li>• 2018-2019 (Atlantic Gold) : Core samples sawn to half core using a diamond-tipped core saw. Nominal 1 m sample intervals. Samples were dispatched from Atlantic’s core facility in Moose River, directly to ALS preparatory lab in Sudbury, ON or Moncton, New Brunswick.</li> </ul>
<b>Drilling Techniques</b>	<ul style="list-style-type: none"> <li>• Drilling has used primarily NQ (47.6 mm diameter) core.</li> <li>• Core is not orientated</li> </ul>
<b>Drill Sample Recovery</b>	<ul style="list-style-type: none"> <li>• Diamond drilling recovery percentages were measured by comparing actual metres recovered per drill run versus metres measured on the core blocks. Recoveries averaged over &gt;90% with increased core loss associated with faults, shear zones and proximal to underground workings.</li> <li>• There is no relationship between sample recovery and gold grade</li> </ul>
<b>Logging</b>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Information was initially captured using logging sheets; later programs used direct computer entry.</li> </ul>
<b>Sub-sampling techniques and sample preparation</b>	<ul style="list-style-type: none"> <li>• 1985: Bondar Clegg assayed using a one assay ton split (29.17 g/t Au) of the pulverized sample by conventional fire assay and atomic absorption method. Of 577 samples submitted, 22 samples containing visible gold were assayed by screen fire assay based on a weighted average of the fire assay for a one assay ton split of the -150 mesh fraction with the fire assay for the entire +150 mesh fraction.</li> <li>• 1986–1988: Chemlab samples were assayed by conventional fire assay and atomic absorption on a 30g sample. For all samples assaying over 1 g/t Au (this limit was subsequently reduced to (0.5 g/t Au), the reject material was re-assayed by the screen fire assay method. Bondar Clegg samples used a similar method. The screen size used was 80 mesh and two 30 g samples of the fine fraction were assayed and weight-averaged with assays for the entire +80 mesh fraction.</li> <li>• 2010: Samples selected for resampling were assayed at ALS using the “Screen Metallics Gold, Double Minus” procedure which is designed for samples which contain coarse gold. The sample is dried, crushed, pulverised in a ring mill and the entire sample sieved through a 100 µm screen. The coarse fraction was completely digested in a classic fire assay with gravimetric finish. The fine fraction was homogenized and two 30 g samples (Au-AA25 and Au-AA25D) split from this fraction and assayed by fire assay with AAS finish. The weighted assay value of the entire sample was then calculated from the three analyses.</li> <li>• 2011: Similar methodologies as used for the 2010 resampling program.</li> <li>• 2016–2017: Sawn half-core samples were submitted to ALS Chemex facility in Sudbury, Ontario where each sample was dried, coarse crushed and pulverized in a ring mill to 85% passing 75 µm or better. A subsample was taken for 50 g charge fire assay with AAS finish (ALS method Au-AA26).</li> <li>• September 2017 to February 2018: Sawn half-core (97%) or whole core (3%) samples were submitted to</li> </ul>





	<p>ALS Chemex facility in Sudbury, Ontario where each sample was dried, finely crushed to better than 70% passing a 2 mm screen. A split up to 1,000 g was taken using a Boyd rotary splitter and pulverized to better than 85% passing a 75 µm screen. A subsample was taken for 50 g charge fire assay with AAS finish (ALS method Au-AA26).</p> <ul style="list-style-type: none"> <li>February 2018 to December 2018: Sawn half-core samples were submitted to ALS Chemex facility in Sudbury, Ontario where each sample was dried, finely crushed to better than 70% passing a 2 mm screen. A split up to 1,000 g was taken using a Boyd rotary splitter and pulverized to better than 85% passing a 75 µm screen. A subsample was taken for 50 g charge fire assay with AAS finish (ALS method Au-AA26). A 1:10 duplicate sample was also performed (Au-AA26D).</li> <li>2018-2019 149: Sawn half-core samples were submitted to ALS Chemex facility in Sudbury, Ontario or Moncton, New Brunswick, where each sample was dried, finely crushed to better than 70% passing a 2 mm screen. A split up to 1,000 g was taken using a Boyd rotary splitter and pulverized to better than 85% passing a 75 µm screen. A subsample was taken for 50 g charge fire assay with AAS finish (ALS method Au-AA26). A 1:10 duplicate sample was also performed (Au-AA26D).</li> </ul>
<b>Quality of assay data and laboratory tests</b>	<ul style="list-style-type: none"> <li>Analysis for gold using screen fire assay and fire assay across all drill programs is appropriate for the type of mineralisation.</li> <li>1985 – 1988: Unknown quality control procedures. These holes were selectively sampled, and are not used for grade estimation.</li> <li>2011: Protocols included insertion of blanks, insertion of certified reference materials (CRM) (1:20) and field half-core duplicates (1:20). Blanks indicate minimal contamination. CRMs indicate acceptable levels of analytical accuracy and precision.</li> <li>2016 -2017: Protocols included insertion of blanks (1:28 and after visible gold), insertion of CRM (1:28) and duplicate pulp fire assay (1:10). Blank performance was acceptable. CRMs indicate acceptable levels of analytical accuracy and precision. Original samples and duplicate showed a correlation of 0.94.</li> <li>2017 – 2019: Protocols were as described for 2016 -2017. Blank and CRM performance were acceptable and Original and duplicate samples had a correlation of 0.84.</li> </ul>
<b>Verification of sampling and assay</b>	<ul style="list-style-type: none"> <li>Drilling from 1985 – 1988 that was selectively sampled has been re-drilled. There is good correlation with the width and tenor of assays between early and later holes.</li> <li>Prior to 2016 data capture was completed manually on hard copy logs, which was transferred to Excel spreadsheets and then loaded to MS Access databases. The data was then validated and transferred to an SQL server database using DataShed software.</li> <li>Since 2016 data has been captured electronically either using Excel spreadsheets or LogChief.</li> <li>A selection of sample data has been cross-checked against logs from annual reports with no issues detected.</li> </ul>
<b>Location of data points</b>	<ul style="list-style-type: none"> <li>In 2011 a number of the 1980s-era drill holes were surveyed using a Trimble differential GPS, re-establishing the local grid and defining transformation co-ordinates between the local grid and the UTM NAD83 projection.</li> <li>Elevation data from historic drilling showed a regional systematic error and this was corrected for drill holes in the Egerton–MacLean and Hudson Zones where a topographic surface based on a surveyed 25 x 25 m grid was established.</li> <li>Prior to Atlantic Gold’s 2016–2017 drill campaign, an independent surveyor (WSP) was contracted to validate the local grid transformation used previously by re-surveying in historic holes and re-establishing the grid.</li> <li>Once established, WSP surveyed in the proposed drill hole locations in UTM NAD83 projection. Upon drill hole completion, WSP surveyed in the final collar location.</li> <li>Holes are surveyed downhole at approximately 30 m intervals and at the final hole depth. Survey instruments have included Pajari, Sperry-sun, FlexIT and Reflex tools.</li> </ul>
<b>Data spacing and distribution</b>	<ul style="list-style-type: none"> <li>Data spacing is approximately on 25m spaced sections. Drilling data is sufficient to establish continuity for all lodes.</li> </ul>
<b>Orientation of data in relation to geological structure</b>	<ul style="list-style-type: none"> <li>Gold mineralisation at 15 Mile Stream is to some degree stratiform. Bedding was intersected at angles of between 45° and 90° such that the true thickness of mineralisation is generally between 70% and 100% of the downhole intercepts.</li> </ul>
<b>Sample security</b>	<ul style="list-style-type: none"> <li>Security procedures prior to Atlantic Gold Corp’s involvement in the Project are not known, although check sampling and re-examination of core from a large number of drill holes has not shown any sign of sample tampering.</li> <li>Core was kept in a secure and locked area with limited access. Samples are typically conveyed from the Project site to the laboratory using commercial transport firms.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>No external audits or reviews of sampling techniques and data have been completed.</li> </ul>



## Section 2 Reporting of Exploration Results – 15 Mile (Egerton – Maclean, Plenty, Hudson and 149)

Criteria	Comments
<b>Mineral Tenement and Land Tenure Status</b>	<ul style="list-style-type: none"> <li>Atlantic Mining NS Inc (AMNS) has 100% ownership of the tenements over 15 Mile (EL05889, EL52901 and EL10406).</li> <li>The tenements are in good standing at the time of reporting.</li> </ul>
<b>Exploration Done by Other Parties</b>	<ul style="list-style-type: none"> <li>No recent Mineral Resource drilling has been completed by AMNS. Work completed by other parties is covered in the previous section.</li> </ul>
<b>Geology</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>
<b>Drill Hole Information</b>	<ul style="list-style-type: none"> <li>No exploration results are presented.</li> </ul>
<b>Data Aggregation Methods</b>	<ul style="list-style-type: none"> <li>No exploration results are presented.</li> </ul>
<b>Relationship Between Mineralisation Widths and Intercept Lengths</b>	<ul style="list-style-type: none"> <li>No exploration results are presented.</li> </ul>
<b>Diagrams</b>	<ul style="list-style-type: none"> <li>No exploration results are presented</li> </ul>
<b>Balanced Reporting</b>	<ul style="list-style-type: none"> <li>No exploration results are presented</li> </ul>
<b>Other Substantive Exploration Data</b>	<ul style="list-style-type: none"> <li>No exploration results are presented</li> </ul>
<b>Further Work</b>	<ul style="list-style-type: none"> <li>No further resource definition drilling is planned at this stage</li> </ul>

## Section 3 Estimation and Reporting of Mineral Resources – 15 Mile (Egerton – Maclean, Plenty, Hudson and 149)

Criteria	Comments
<b>Database integrity</b>	<ul style="list-style-type: none"> <li>Internal data verification programs have included review of QA/QC data, re-sampling and sample re-analysis programs, and database verification for issues such as overlapping sample intervals, duplicate sample numbers, or lack of information for certain intervals. Validation checks are performed on data used to support estimation, and comprise checks on surveys, collar co-ordinates, lithology data, and assay data.</li> </ul>
<b>Site visits</b>	<ul style="list-style-type: none"> <li>The Competent Person most recently visited site in September 2023.</li> </ul>
<b>Geological interpretation</b>	<ul style="list-style-type: none"> <li>No geological models or wireframe domain models were used for the Mineral Resource estimation.</li> <li>Mineralization domaining uses geostatistical techniques. The drill-hole composites have been assigned to mineralization domains comprising the Egerton Zone East, the Egerton Zone West, the Hudson Zone, the Plenty Zone and the 149 Zone.</li> <li>In the 149 Zone, the drill hole composites were separated into two mineralization domains: a higher-grade northern domain and a lower grade southern domain.</li> </ul>
<b>Dimensions</b>	<ul style="list-style-type: none"> <li>strike extent = 1400m ; width = variable 20m to 100m; vertical extent = 225m</li> </ul>
<b>Estimation and modelling techniques</b>	<ul style="list-style-type: none"> <li>Model completed in April 2022.</li> <li>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.</li> <li>Samples were composited to 2 m intervals. Statistical properties of the composites were reviewed in terms of histogram and spatial continuity to identify areas of consistent mineralization style. Distinctly different mineralization styles with clearly different histograms of composite grade were identified and modelled with different parameters within 15-Mile.</li> <li>In the Egerton Zone East, four 2 m composites with grades &gt;750 g/t Au were capped at 300 g/t Au in the dataset used for mineral resource estimation. The highest grade in a 2 m composite with grade &lt;750 g/t Au was 259 g/t Au.</li> <li>Where possible, directional sample variograms and variogram models were generated for the domains, and the resulting data used to inform estimation search criteria.</li> </ul>



Criteria	Comments
	<ul style="list-style-type: none"> <li>The resource estimates assume mining ore selection will take place on 5m flitches with a minimum mining width of around 5 m. 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 5m by 5m with a downhole sampling interval of 2.5 m was assumed for Egerton Zone and 149 and 10 m by 5 m was assumed for Hudson and Plenty.</li> </ul>
<b>Moisture</b>	<ul style="list-style-type: none"> <li>Tonnages are estimated on a dry basis.</li> </ul>
<b>Cut-off parameters</b>	<ul style="list-style-type: none"> <li>The deposits are reported at a 0.3g/t cut-off. The cut-off grade includes the following considerations: <ul style="list-style-type: none"> <li>US\$1,500/oz gold at a currency exchange rate of 0.78 C\$ per US\$</li> <li>99.9% payable gold</li> <li>\$2.13/oz offsite costs (refining and transport)</li> <li>2% royalty</li> <li>97% metallurgical recovery. Processing costs of \$12.88/t</li> <li>General and administrative (G&amp;A) costs of \$5.13/t.</li> </ul> </li> </ul>
<b>Mining factors or assumptions</b>	<ul style="list-style-type: none"> <li>The mining method is conventional open pit</li> </ul>
<b>Metallurgical factors or assumptions</b>	<ul style="list-style-type: none"> <li>Conventional gravity and carbon in leach cyanidation utilising the Touquoy mine processing equipment</li> </ul>
<b>Environmental factors or assumptions</b>	<ul style="list-style-type: none"> <li>The 15 Mile project as proposed has taken into consideration environmental limitations and opportunities within the project area. Storage of site materials follows most environmentally responsible guidelines and every opportunity to mitigate disturbance has been considered. This has resulted in a decrease in environmental impacts compared to previous designs.</li> <li>Project Footprint: The potentially acid generating waste generated during mining will be managed through sub-aqueous deposition within the TMF and exhausted open pits, versus being stockpile at surface. The production profile has been smoothed to mitigate the need for a low/medium grade stockpile on surface. The layout of the process/admin/mining area has been optimized to reduce impacts to wetlands and species of special significance within the project area. Wherever modifications to these areas are required, translocation will be undertaken wherever possible. Compensation will be carried out wherever translocation is not applicable, at or above ratios specified by provincial and federal regulatory requirements.</li> <li>Waterway Rehabilitation: A watercourse runs through the main project area at 15 Mile, "Seloam Brook". Seloam Brook's original pathway was re-routed to accommodate historic mining operations in the early 1900s and presently the area contains tailings and by products of the historic mining process. The waterway is presently sub-optimal for fish habitat. As part of St Barbara's 15 Mile project Seloam Brook will be re-routed using an engineered design that will accommodate fish habitat and ensure existing waterways remain connected. As part of this diversion, the historic contamination in the area will be rehabilitated and in total 61 hectares impacted by historic tailings will be rehabilitated throughout the project area.</li> </ul>
<b>Bulk density</b>	<ul style="list-style-type: none"> <li>The global bulk density used for all of the 15 Mile mineralization is 2.78 t/m<sup>3</sup>. This average bulk density is the mean of 95 bulk density measurements made on unwaxed core samples using the immersion method.</li> <li>For the 149 Zone, a bulk density of 2.75 t/m<sup>3</sup> was used.</li> </ul>
<b>Classification</b>	<ul style="list-style-type: none"> <li>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: <ul style="list-style-type: none"> <li>Category 1: uses search radii (1), and search parameters (1). If the data found in this search satisfy these criteria (at least 20 samples found in at least four octants), the panel is given a Category 1 flag.</li> <li>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.</li> <li>Category 3: If the second search criteria are not satisfied, search radii (2) are used with search parameters (2) (at least 10 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.</li> </ul> </li> <li>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.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>The resource model was reviewed internally.</li> </ul>
<b>Discussion of relative accuracy/confidence</b>	<ul style="list-style-type: none"> <li>The resource estimates are global estimates. Grade control drilling will be completed in advance of mining to improve local estimates of grade.</li> </ul>



**Section 4 Estimation and Reporting of Ore Reserves – 15 Mile (Egerton – Maclean, Plenty, Hudson and 149)**

Criteria	Comments
<b>Mineral Resource Estimate for Conversion to Ore Reserves</b>	<ul style="list-style-type: none"> <li>The Ore Reserves estimate is based on the Mineral Resources estimates carried out by Neil Schofield of FSSI Consulting (Australia) Pty Ltd in April 2022. Gold grade was estimated using multiple indicator kriging (MIK).</li> <li>The Mineral Resources are reported inclusive of the Ore Reserves.</li> </ul>
<b>Site Visits</b>	<ul style="list-style-type: none"> <li>The Competent Person most recently visited site in October 2023</li> </ul>
<b>Study Status</b>	<ul style="list-style-type: none"> <li>The 15 Mile project is at Pre-Feasibility Study stage, following the completion of the October 2023 study</li> </ul>
<b>Cut-off Parameters</b>	<ul style="list-style-type: none"> <li>Cut-off grade assumes:</li> <li>US\$1,500/oz gold at a currency exchange rate of 0.78 C\$ per US\$</li> <li>99.9% payable gold</li> <li>\$2.13/oz offsite costs (refining and transport)</li> <li>2% royalty</li> <li>97% metallurgical recovery. Processing costs of \$12.88/t</li> <li>General and administrative (G&amp;A) costs of \$5.13/t.</li> <li>A breakeven incremental cut-off grade of 0.30 g/t Au is used for reporting</li> </ul>
<b>Mining Factors or Assumptions</b>	<ul style="list-style-type: none"> <li>Lerchs-Grossman (L-G) analysis, pit designs and mine production scheduling have been completed for all deposits to enable the conversion of Measured and Indicated Mineral Resources to Proved and Probable Ore Reserves. Inferred Mineral Resources are set to waste.</li> <li>The project will be mined with conventional drill, blast, load and haul setup. Primary production equipment includes 4.5 m<sup>3</sup> bucket production excavators and 64 tonne payload off highway mining trucks.</li> <li>The overall slopes used for the pit optimisation and design work were sourced from reports carried out by independent geotechnical consultants.</li> <li>Grade control drilling will be carried out in advance of mining and the information obtained from this drilling will be made available for decision making in advance of mining.</li> <li>Mining recovery of 98.4% and external mining dilution of 1.6% at 0.20 g/t Au grade is applied in addition to the modelled in-block dilution.</li> </ul>
<b>Metallurgical Factors or Assumptions</b>	<ul style="list-style-type: none"> <li>Metallurgical testing confirmed the 15 Mile ore is highly amenable to conventional recovery methods of gravity and carbon in leach cyanidation, similar to the Touquoy operation 40 kms away which has recently transitioned into Care and Maintenance. The process review undertaken by Ausenco confirmed the Touquoy processing equipment is suitable for recovering gold from 15 Mile ore and therefore the process flowsheet for 15 Mile has been designed to maximize repurposing of Touquoy equipment at 15 Mile and reduce initial capital costs.</li> <li>Previously completed test work indicates the ore is medium hardness with bond work index approximately 13.8 kWh/t. The processing plant will operate at 1.75 million tonnes per annum, or 4,800 tonnes per day at 92% availability.</li> </ul>
<b>Environmental</b>	<ul style="list-style-type: none"> <li>The 15 Mile project as proposed has taken into consideration environmental limitations and opportunities within the project area. Storage of site materials follows most environmentally responsible guidelines and every opportunity to mitigate disturbance has been considered. This has resulted in a decrease in environmental impacts compared to previous designs.</li> <li>Project Footprint: The potentially acid generating waste generated during mining will be managed through sub-aqueous deposition within the TMF and exhausted open pits, versus being stockpile at surface. The production profile has been smoothed to mitigate the need for a low/medium grade stockpile on surface. The layout of the process/admin/mining area has been optimized to reduce impacts to wetlands and species of special significance within the project area. Wherever modifications to these areas are required, translocation will be undertaken wherever possible. Compensation will be carried out wherever translocation is not applicable, at or above ratios specified by provincial and federal regulatory requirements.</li> <li>Waterway Rehabilitation: A watercourse runs through the main project area at 15 Mile, "Seloam Brook". Seloam Brook's original pathway was re-routed to accommodate historic mining operations in the early 1900s and presently the area contains tailings and by products of the historic mining process. The waterway is presently sub-optimal for fish habitat. As part of St Barbara's 15 Mile project Seloam Brook will be re-routed using an engineered design that will accommodate fish habitat and ensure existing waterways remain connected. As part of this diversion, the historic contamination in the area will be rehabilitated and in total 61 hectares impacted by historic tailings will be rehabilitated throughout the project area.</li> <li>It is assumed that Provincial approvals will be granted for 15 Mile ahead of mining.</li> <li>The project is still subject to Federal permitting such as: Fisheries Authorization, Schedule 2, MDMER and Species at Risk.</li> </ul>
<b>Infrastructure</b>	<ul style="list-style-type: none"> <li>Labour studies are underway to determine suitable labour pools and employee benefits.</li> <li>Site infrastructure including buildings, electrical equipment, mechanical equipment, and auxiliary support equipment is being sourced from the existing Touquoy project which is recently place in care and maintenance. Cost estimates account for dismantle, relocation and rebuild plus any replacement equipment.</li> </ul>
<b>Costs</b>	<ul style="list-style-type: none"> <li>Capital and sustaining costs were compiled by Ausenco from the following sources: <ul style="list-style-type: none"> <li>Mining initial capital costs were developed by Moose Mountain Technical Services (MMTS). Costs include the owner's lease to own mine fleet, and pre-producton operating costs for mining 6.1 Mt of material from the open pits, targeting waste rock quantities for construction purposes..</li> </ul> </li> </ul>



Criteria	Comments
	<ul style="list-style-type: none"> <li>○ Mining sustaining capital costs were developed by MMTS and include ongoing equipment lease payments.</li> <li>○ Processing, infrastructure, project delivery and project indirects were developed by Ausenco, and are inclusive of a 1.75 Mtpa conventional leach/CIL processing plant, power substation, tailings facility initial construction, diversion of Seloam Brook and other required infrastructure. Any opportunity for repurposing Touquoy fixed plant equipment was captured in the processing capital costs.</li> <li>○ Sustaining capital costs for infrastructure mainly consists of tailings management facility lifts that occur through life of mine.</li> <li>● Operating costs have been compiled based on the following sources and assumptions:               <ul style="list-style-type: none"> <li>○ Mining unit costs have been estimated by MMTS, built up from first principles, and utilising 2023 vendor quotes and database cost inputs.</li> <li>○ Processing unit costs have been estimated by Ausenco using first principles and 2023 prices for major reagents and media.</li> <li>○ G&amp;A costs are based on The Atlantic Operations Touquoy project.</li> </ul> </li> </ul>
<b>Revenue Factors</b>	<ul style="list-style-type: none"> <li>● A gold price of US\$1500/oz has been used in revenue calculations based on guidance provided by the company's Mineral Resources and Ore Reserves Steering Committee.</li> </ul>
<b>Market Assessment</b>	<ul style="list-style-type: none"> <li>● A contract was entered into for the transportation, security, insurance, and refining of doré gold bars from Touquoy. It is expected that doré produced from 15 Mile would be subject to similar contracts to that in place for Touquoy.</li> </ul>
<b>Economic</b>	<ul style="list-style-type: none"> <li>● The Ore Reserve estimate is based on a Pre-feasibility Study level of accuracy with inputs from open-pit, processing, transportation, sustaining capital and contingencies scheduled and costed to generate the initial Ore Reserve cost model.</li> <li>● A sensitivity analysis was completed on the base-case after-tax NPV(5%) using the following variables:               <ul style="list-style-type: none"> <li>○ Gold Price</li> <li>○ Initial Capital Expenditure</li> <li>○ Total Operating Cost</li> <li>○ US\$:C\$ exchange rate</li> </ul> </li> <li>● The sensitivity analysis demonstrates the project is financially robust and therefore economic extraction of the deposit can be reasonably justified.</li> </ul>
<b>Social</b>	<ul style="list-style-type: none"> <li>● In addition to applicable regulations, the 15 Mile project will require social acceptance. Early information and consultation meetings have been held with local communities, First Nation communities, local, provincial, and federal governmental authorities to initiate collaborative work to obtain social acceptability of the project.</li> <li>● The project will be subject to the regulations under the Nova Scotia Environmental Assessment Act and environmental baseline studies are well advanced which will permit the initiation of the environmental impact studies.</li> </ul>
<b>Other</b>	<ul style="list-style-type: none"> <li>● AMNS has not identified any material naturally occurring risks.</li> <li>● The company is committed to early engagement with all relevant stakeholders.</li> </ul>
<b>Classification</b>	<ul style="list-style-type: none"> <li>● The economically minable component of the Measured Mineral Resource has been classified as a Proved Ore Reserve.</li> <li>● The economically minable component of the Indicated Mineral Resource has been classified as a Probable Ore Reserve.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>● No audits or reviews of Ore Reserves have been completed.</li> </ul>
<b>Discussion of relative accuracy/ confidence</b>	<ul style="list-style-type: none"> <li>● The Ore Reserves are based on global estimates of Mineral Resources. Grade control drilling will be completed in advance of mining to improve local estimates of grade.</li> </ul>