
16 August 2023

Fifteen Mile Stream Project Update

Standalone project including relocation of Touquoy processing plant

Highlights

- Fifteen Mile Stream Project in Nova Scotia to be designed as standalone 1.7 to 1.8 Mtpa processing facility
 - Touquoy Processing Plant to be substantially relocated to Fifteen Mile Stream
 - Ausenco update of project design, capital and operating cost estimates to prefeasibility level due November 2023
 - Significantly improved environmental design criteria incorporating stakeholder engagement on previous design
 - Project design parameters targeting ten-year mine life and 60,000 ounces per annum average gold production
 - Updated Mineral Resources and Ore Reserve due in November 2023
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St Barbara Limited (“**St Barbara**” or the “**Company**”) (ASX: SBM) has completed concept level evaluations and determined that the relocation of the bulk of the Touquoy Processing Plant to Fifteen Mile Stream for a standalone whole ore leach facility of between 1.7 and 1.8 Mtpa throughput is the preferred development pathway for the next phase of the Company’s Atlantic business.

Fifteen Mile Stream is approximately 40 kilometres east-northeast of the Touquoy Mine, while the Company’s Beaver Dam project is mid-way between the Fifteen Mile Stream Project and the Touquoy Mine (see Figure 1).

Ausenco is working with the St Barbara study team to complete an updated process plant design and capital and operating cost estimates by early November 2023. The Touquoy Processing Plant was designed and built by Ausenco. In parallel, the Mineral Resources and Ore Reserves estimates for Fifteen Mile Stream will be updated for this revised basis of design by St Barbara and Moose Mountain Technical Services.

The Touquoy Processing Plant was commissioned in 2017 with a nameplate throughput rate of 2.0 Mtpa. Whilst the Fifteen Mile Stream ores are expected to be harder and require finer product size compared to the ore from Touquoy Mine, the processing plant is more than capable of achieving the targeted throughput rate of 1.7 and 1.8 Mtpa. Significant savings in capital costs will be realised through the re-use of equipment from the Touquoy Processing Plant.

In addition, previous testwork indicates that there is a significant gold recovery improvement for whole ore leach processing at Fifteen Mile Stream compared to the previous plan to produce a gold concentrate for final gold recovery at Touquoy.

St Barbara Managing Director and CEO Andrew Strelein said: “*This new design for Fifteen Mile Stream is an excellent alternative pathway to development with improved recoveries and with lower overall capital cost and execution risk. Given the delays in approvals to our in-pit tailings proposal it is time to move away from the earlier design which integrated with the Touquoy Mine. This is a simpler standalone proposition with design parameters targeting a ten year mine life and approximately 60,000 ounces per annum.*”



The Fifteen Mile Stream Project comprises up to four open pits, with low waste to ore strip ratios. Mineral Resources estimates are shown in Table 1 below while Ore Reserves estimates (and strip ratios) are shown in Table 2 below.

Benefits of the revised design for Fifteen Mile Stream Project include:

- Relocation of bulk of Touquoy Processing Plant, buildings etc (excluding leach tanks);
- Improved metallurgical recoveries from standalone whole ore leach recovery circuit on site;
- Remediation of more than 50 hectares of historic tailings and soils impacted by the historic tailings¹;
- Relocation of a small stream away from historic mine tailings; and
- Substantially reduced disturbance footprint.

Figure 1: Atlantic Project Locations



¹ Historic tailings arose from processing of gold ores in 19th century



Table 1: Fifteen Mile Stream Mineral Resources by individual open pit²

Deposit	Measured			Indicated			Inferred			Total		
	Tonnes ('000)	Gold (g/t)	Ounces ('000)	Tonnes ('000)	Gold (g/t)	Ounces ('000)	Tonnes ('000)	Gold (g/t)	Ounces ('000)	Tonnes ('000)	Gold (g/t)	Ounces ('000)
Egerton-MacLean	1,082	0.8	26	1,613	0.6	33	697	0.8	17	3,392	0.7	77
Hudson	3,704	1.2	137	12,395	1.1	422	1,875	1.1	64	17,974	1.1	623
Plenty	1,519	1.1	52	747	0.9	22	22	1.2	8	2,288	1.1	82
Total	6,305	1.1	215	14,755	1.0	477	2,594	1.1	89	23,654	1.0	781

Table 2: Fifteen Mile Stream Ore Reserves by individual open pit²

Deposit	Proved			Probable			Total			Strip Ratio waste:ore
	Tonnes ('000)	Gold (g/t)	Ounces ('000)	Tonnes ('000)	Gold (g/t)	Ounces ('000)	Tonnes ('000)	Gold (g/t)	Ounces ('000)	
Egerton-MacLean	3,590	1.1	132	9,800	1.1	346	13,390	1.1	478	2.0
Hudson	730	0.9	20	850	0.7	18	1,580	0.7	38	2.4
Plenty	1,260	1.1	44	530	1.0	17	1,790	1.1	61	4.8
Total	5,580	1.1	196	11,180	1.1	381	16,760	1.1	577	2.3

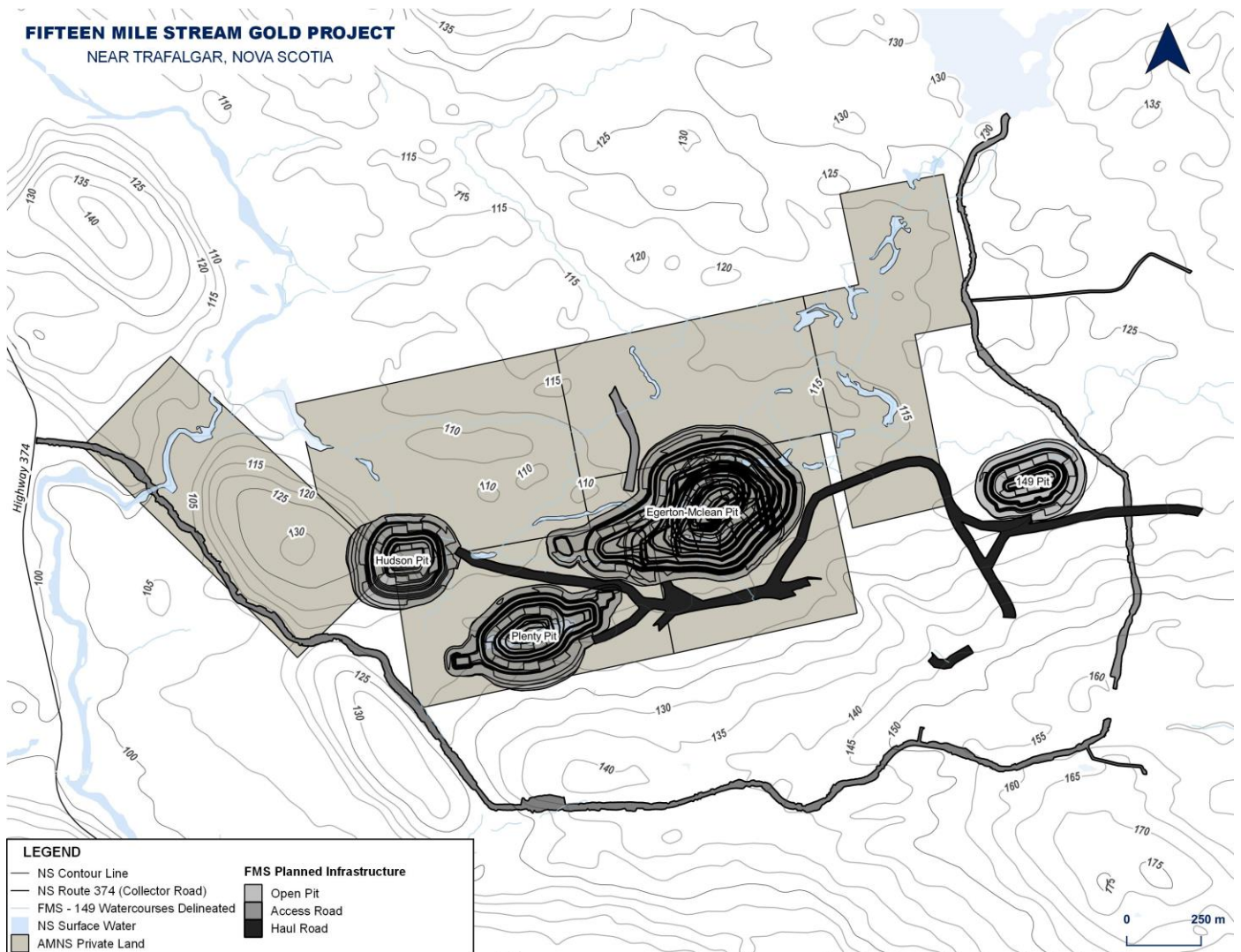
A fourth small open pit called *Pit One-Four-Nine* is yet to be included in Mineral Resources or Ore Reserves but will form part of the update work to be completed in November 2023.

Figure 2 below provides an outline of the open pits. Infrastructure is being wholly redesigned with a significantly reduced disturbance footprint compared to earlier designs for Fifteen Mile Stream. The Touquoy Processing Plant has a very small disturbance footprint and the Company is not proposing significant stockpiling of low grade ores as part of the operations plan.

² Refer to St Barbara's ASX announcement dated 18 May and entitled 'Notice of extraordinary general meeting and explanatory booklet' for a summary of all currently reported Mineral Resources and Ore Reserves at Atlantic and to St Barbara's ASX announcement dated 22 February 2023 and entitled 'Ore Reserves and Mineral Resources Statements as at 31 December 2022 for details of all currently reported Mineral Resources and Ore Reserves for St Barbara



Figure 2: Proposed Fifteen Mile Stream Open Pit Layout



New environmental assessment submissions will be made once the revised project design is sufficiently advanced. The stakeholder engagements to date on Fifteen Mile Stream have been very instructive and feedback received on the previous design will continue to inform this revised design.

In light of the revised design for Fifteen Mile Stream, St Barbara has withdrawn the existing Fifteen Mile Stream Gold Project application from the cooperative federal-provincial environmental assessment process under the Canadian Environmental Assessment Act and Part IV of the Nova Scotia Environment Act.

Processing of Beaver Dam ore through the Touquoy Processing Facility will no longer be contemplated given the planned relocation of Touquoy Processing Plant to Fifteen Mile Stream. Accordingly, St Barbara has also withdrawn the existing Beaver Dam Gold Project application from the cooperative federal-provincial environmental assessment process under the Canadian Environmental Assessment Act and Part IV of the Nova Scotia Environment Act.

St Barbara has also withdrawn the Touquoy open pit under the Touquoy Gold Project Modifications – Environmental Assessment Registration Document from the provincial environmental assessment process as it will no longer pursue approval of in-pit tailings to allow completion of low grade stockpile processing. The Company has previously announced that the processing of stockpiles at Touquoy Mine will unfortunately cease prematurely in September 2023.

Authorised by

Andrew Strelein
Managing Director and CEO



For more information

Investor Relations

David Cotterell
*General Manager Business Development &
Investor Relations*

info@stbarbara.com.au

T: +61 3 8660 1959

M: +61 447 644 648

Media Relations

Paul Ryan / Michael Weir

Citadel-MAGNUS

M: +61 409 296 511 / +61 402 347 032

Competent Persons Statements

Mineral Resources and Ore Reserves

The information in this report that relates to Mineral Resources or Ore Reserves is extracted from both the report titled 'Ore Reserves and Mineral Resources Statements as at 31 December 2022' released to the Australian Securities Exchange (ASX) on 22 February 2023 and from the 'Notice of Extraordinary General Meeting and Explanatory Booklet' related to the ASX on 18 May 2023 (Original Reports) and available to view at stbarbara.com.au and for which Competent Persons' consents were obtained. Each Competent Person's consent remains in place for subsequent releases by the Company of the same information in the same or similar form and context, until the consent is withdrawn or replaced by a subsequent report and accompanying consent.

The Company confirms that it is not aware of any new information or data that materially affects the information included in the Original Reports and, in the case of Mineral Resources or Ore Reserves estimates, that all material assumptions and technical parameters underpinning the estimates in the Original Reports 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 in this release have been disaggregated but have not been materially modified from the Original Reports. Full details and the basis of the Mineral Resources or Ore Reserves estimates are contained in Original Reports available at stbarbara.com.au.