
1 July 2024

Target Lifted by 50% to 1.5 Moz for Simberi Upgrade from Inferred to Indicated Mineral Resource

FY25 Resource Definition and Exploration Drilling Program Approved

Highlights

- Target for upgrading Inferred Mineral Resource to Indicated Mineral Resource lifted by 50% to 1.5 Moz, based on the work being carried out in preparation for the Updated Mineral Resource and Ore Reserve
 - Increase from previous upgrade target of 1.0 Moz (see announcement of 23 January 2024 titled “*Simberi Resource Definition Drilling 50% Complete; Targeting Upgrade of 1 Moz from Inferred to Indicated Mineral Resource*”)
 - On track to announce updated Mineral Resource and Ore Reserve in July (targeting week commencing 29 July)
 - Board has accelerated approval of the Simberi FY25 diamond drilling budget of A\$6.8 million for approximately 9,000 m incorporating:
 - ~4,750 m of resource definition drilling at the Sorowar-Pigiput trend and the Samat deposit; and
 - ~4,250 m of exploration and sterilisation drilling to test six areas
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St Barbara Limited (“**St Barbara**” or the “**Company**”) (ASX: SBM) announces that excellent progress has been made with the incorporation of the results from the FY24 diamond drilling program into the work being carried out to convert Simberi Inferred Mineral Resources to Indicated Mineral Resources as part of an Updated Mineral Resource and Ore Reserve estimate as at the end of the FY24 financial year. The teams are on track to complete the Updated Mineral Resource and Ore Reserve estimate for announcement in the week commencing 29 July.

The success of the resource definition diamond drilling program and the Mineral Resource estimation work completed to date gives the Company confidence to lift the upgrade target for Inferred to Indicated Mineral Resource to 1.5 Moz. This is an increase from the original upgrade target of 1.0 Moz announced on 23 January 2024 (see announcement titled “*Simberi Resource Definition Drilling 50% Complete Targeting Upgrade of 1 Moz from Inferred to Indicated Mineral Resource*”).

Managing Director and CEO Andrew Strelein said “*We are very pleased with the success of the FY24 diamond drilling program and wanted to move quickly to maintain the momentum in FY25 with early commitment to retain the two diamond drill rigs on Simberi Island. We have accelerated approval of the 9,000 m FY25 diamond drilling campaign and have already commenced the first hole in the program to follow up great results at the Sorowar – Pigiput Trend.*”

The progress with the work on the Updated Mineral Resource so far enables us to lift our targeted upgrade of Inferred Mineral Resources by 50% to 1.5 Moz compared to our earlier target announced in January. This sets us up very well for the Ore Reserves to be announced in late July.”

The Company has accelerated the approval of the 9,000 m FY25 diamond drilling program at Simberi to maintain momentum and provide early commitment to the drilling contractors. The FY25 budget approval is for A\$6.8 million. The FY25 diamond drilling program includes a combination of sulphide resource definition, exploration and sterilisation drilling. Resource definition drilling will focus at the Sorowar – Pigiput trend and the Samat deposit. Exploration and sterilisation drilling will test six areas within the mine lease adjacent to current resources.

The FY24 diamond drilling program is the first such program by St Barbara since acquisition of Simberi in 2012 and has been very successful. Results for all 15 Sorowar – Pigiput and four (of eight) Pigibo resource definition drill holes were incorporated into the FY24 Mineral Resource and Ore Reserve Update currently in progress. Final results have since been returned for the four Sorowar – Pigiput exploration holes and all eight Pigibo resource definition holes. The remaining results for the four Pigibo exploration holes will be available by late August.

Highlights of the Sorowar – Pigiput diamond program in FY24 included:

- **SDH524: 43 m @ 1.8 g/t Au from 95 m, including 23 m @ 2.6 g/t Au from 98 m;**
- **SDH525: 24 m @ 1.3 g/t Au from 105 m, 22 m @ 1.6 g/t Au from 147 m, 21 m @ 4.0 g/t Au from 176 m;**
- **SDH530: 50 m @ 1.7 g/t Au from 76 m, including 29 m @ 2.4 g/t Au from 77 m;**
- **SDH531: 56 m @ 2.9 g/t Au from 103 m, including 28 m @ 4.7 g/t Au from 103 m;**
- **SDH533: 45 m @ 2.2 g/t Au from 0 m, including 10 m @ 5.1 g/t Au from 26 m;**
- **SDH534: 14 m @ 2.2 g/t Au from 122 m, 16 m @ 2.0 g/t Au from 184 m;**
- **SDH537: 24 m @ 2.1 g/t Au from 90 m, including 3 m @ 12.2 g/t Au from 102 m; and,**
- **SDH542: 44 m @ 2.5 g/t Au from 113 m, including 9 m @ 6.7 g/t Au from 119 m.**

Highlights of the Pigibo diamond program in FY24 included:

- **SDH550: 40 m @ 3.1 g/t Au from 21 m, including 24 m @ 4.4 g/t Au from 37 m;**
- **SDH539: 71 m @ 1.2 g/t Au from 0 m;**
- **SDH535: 56 m @ 1.2 g/t Au from 0 m, including 8 m @ 3.2 g/t Au from 48 m;**
- **SDH536: 36 m @ 1.7 g/t Au from 97 m, including 6 m @ 5.6 g/t Au from 113 m; and,**
- **SDH532: 21 m @ 2.7 g/t Au from 54 m, including 10 m @ 4.6 g/t Au from 63 m.**

Excellent potential exists for further increases to the Simberi Mineral Resource and Ore Reserves due to the following:

- The presence of ore grade intercepts located in the southeast corner of the current Sorowar conceptual sulphide pit highlights the potential for southeast strike and down dip extensions to the southeast portion of the Sorowar – Pigiput Trend;
- The current Sulphide pit optimisation at Samat is partly constrained at depth by the limits of drilling, including limited drilling into the 'productive window';
- Based on metal zonation studies, higher grades can be expected to be encountered across the deposits in a 'productive window' between -25m and +75mRL which is not fully tested;
- The recognition of the gold – molybdenum association with recent higher grade gold intercepts returned from the FY24 Sorowar – Pigiput drilling highlights additional targets around known molybdenum zones;
- The interpretation of a diatreme breccia model potentially constraining a significant proportion of gold mineralisation at Sorowar, Pigiput and Pigibo combined with the recognition of limited drilling of the western portion of the diatreme surrounding Pigibo North; and,
- Improved geological understanding of the controls on mineralisation following the insights gained from the extensive FY24 diamond drilling.

Explanatory Notes

Figure 1 shows the location of the proposed FY25 sulphide diamond drilling program on ML136. The eight target areas include individual drill hole collar locations and drill traces. The two resource definition drilling areas include the Sorowar-Pigiput trend and Samat deposit and are highlighted by dark blue polygons. The six exploration and / or sterilisation drilling areas are highlighted by light blue polygons. The exploration targets include Pigibo North, Monun East, Southeast Pigibo, between Pigibo and Botlu, between Botlu and Pigicow, and North Samat. It should be noted that the individual drill hole designs within the target areas will vary, in particular the resource definition drilling, once the updated Mineral Resource and Ore Reserve are released in July.

The upper part of Figure 2 is a 3D view (looking down to the east) at the proposed FY25 sulphide diamond drilling program. The target areas, preliminary drill hole collar locations and drill traces are displayed relative to the conceptual sulphide pit designs and all previous >0.6 g/t Au drill intercepts. The proposed exploration drilling in the Pigibo North area will test a large portion of the western side of the interpreted diatreme breccia margin where there has been limited shallow drilling to date. The lower part of Figure 2 is a long section looking east and displays the proposed drilling in relation to the conceptual sulphide pit designs.

Figure 3 shows the location of the planned resource definition drilling at the Samat deposit in relation to the conceptual sulphide pit design. The location of a northeast orientated cross section is shown as a white line.

Figure 4 is a cross-section looking northwest, that displays the location of proposed resource definition drill holes in relation to significant drill intercepts, the 0.25 g/t Au grade shell and conceptual Samat sulphide pit design. The proposed resource definition drill holes extend well below the Samat deposit into the 'productive window' located at a specific elevation (between +75m RL and -25m RL), where there are generally higher gold grades present elsewhere within the mine lease.

Figure 1. Plan View of Proposed FY25 Sulphide Drilling, ML136, Simberi

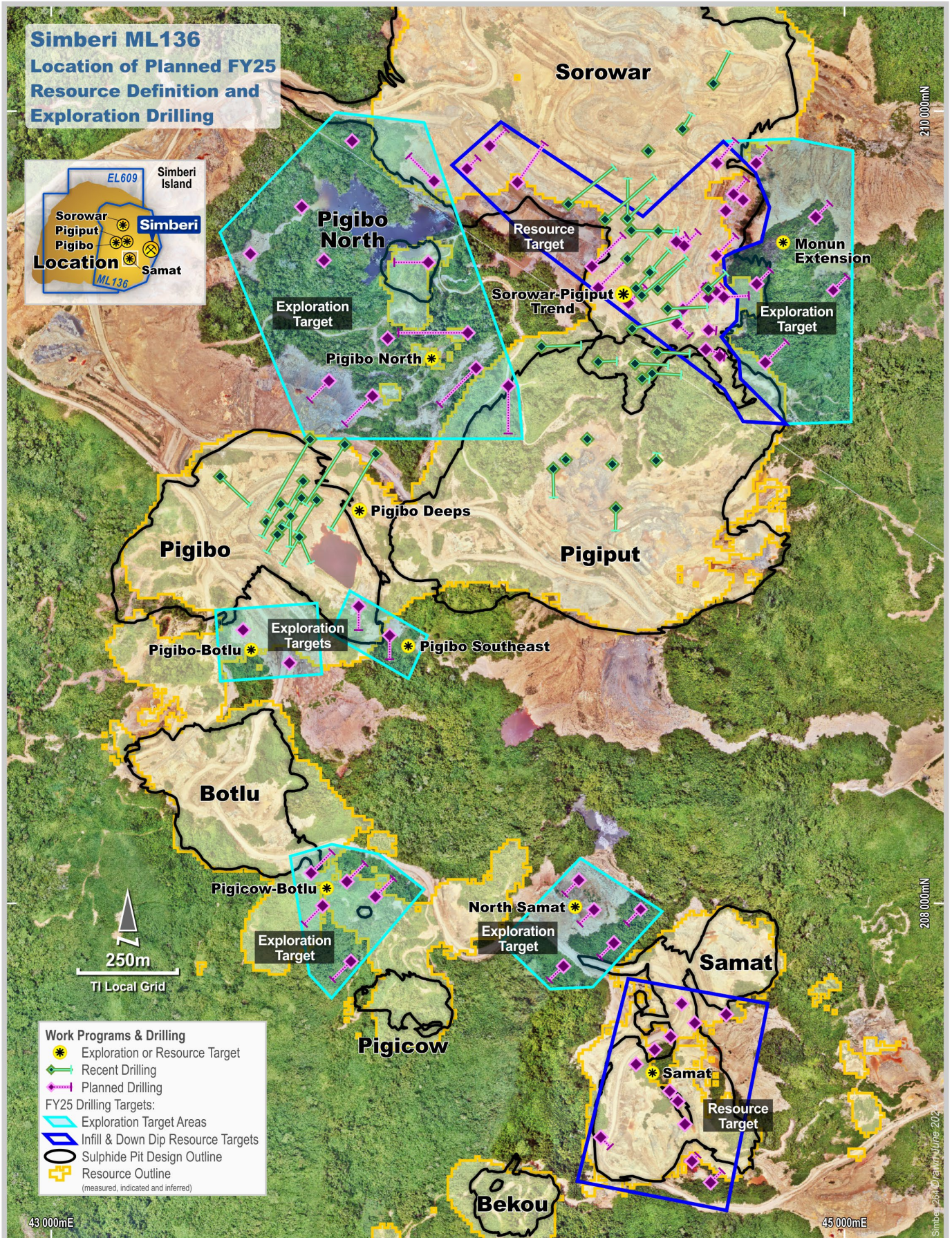


Figure 2. 3D View and Long Section of Proposed FY25 Sulphide Drilling, ML136, Simberi

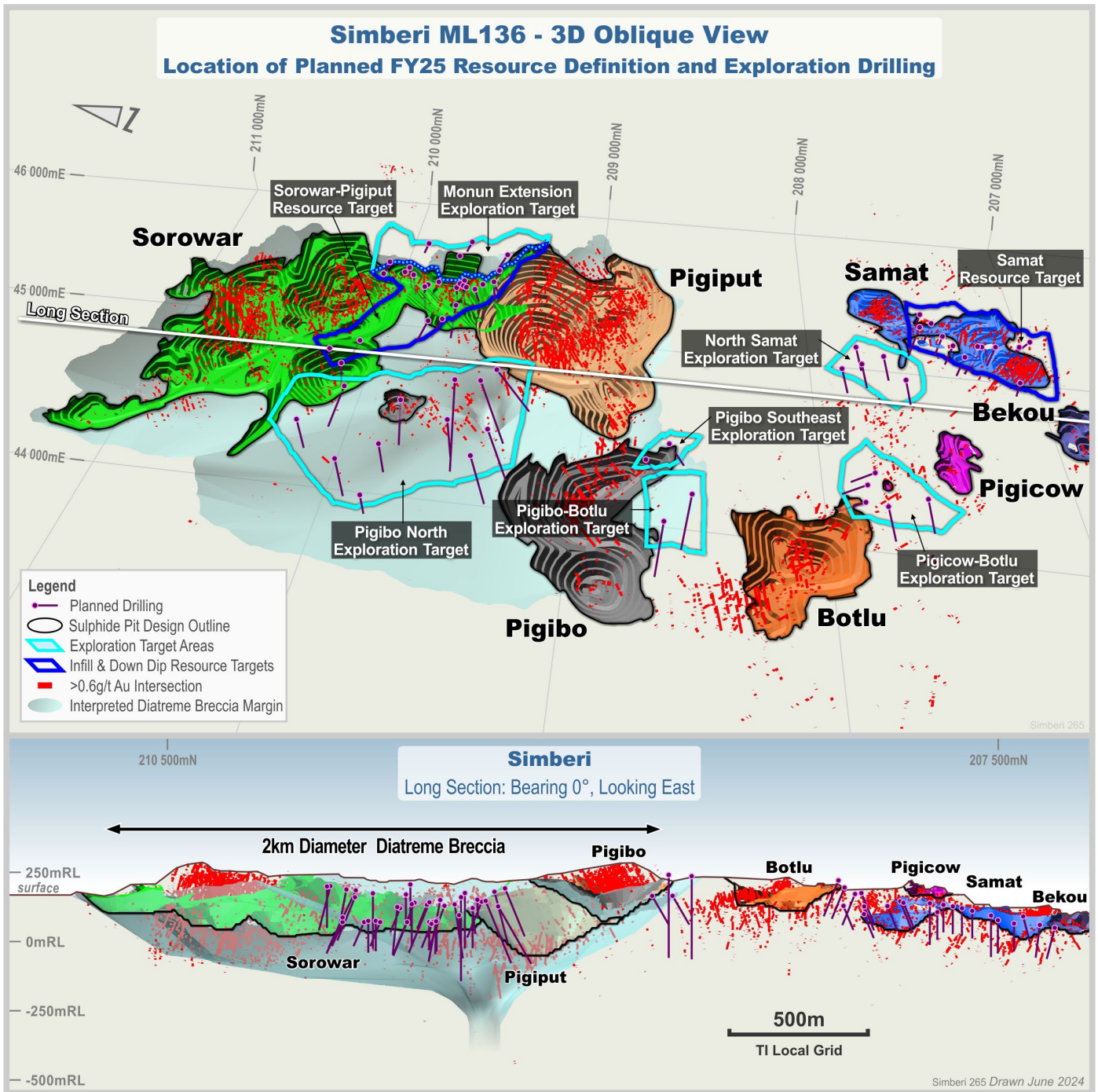


Figure 3. Proposed FY25 Resource Definition Drilling, Samat, Simberi Island

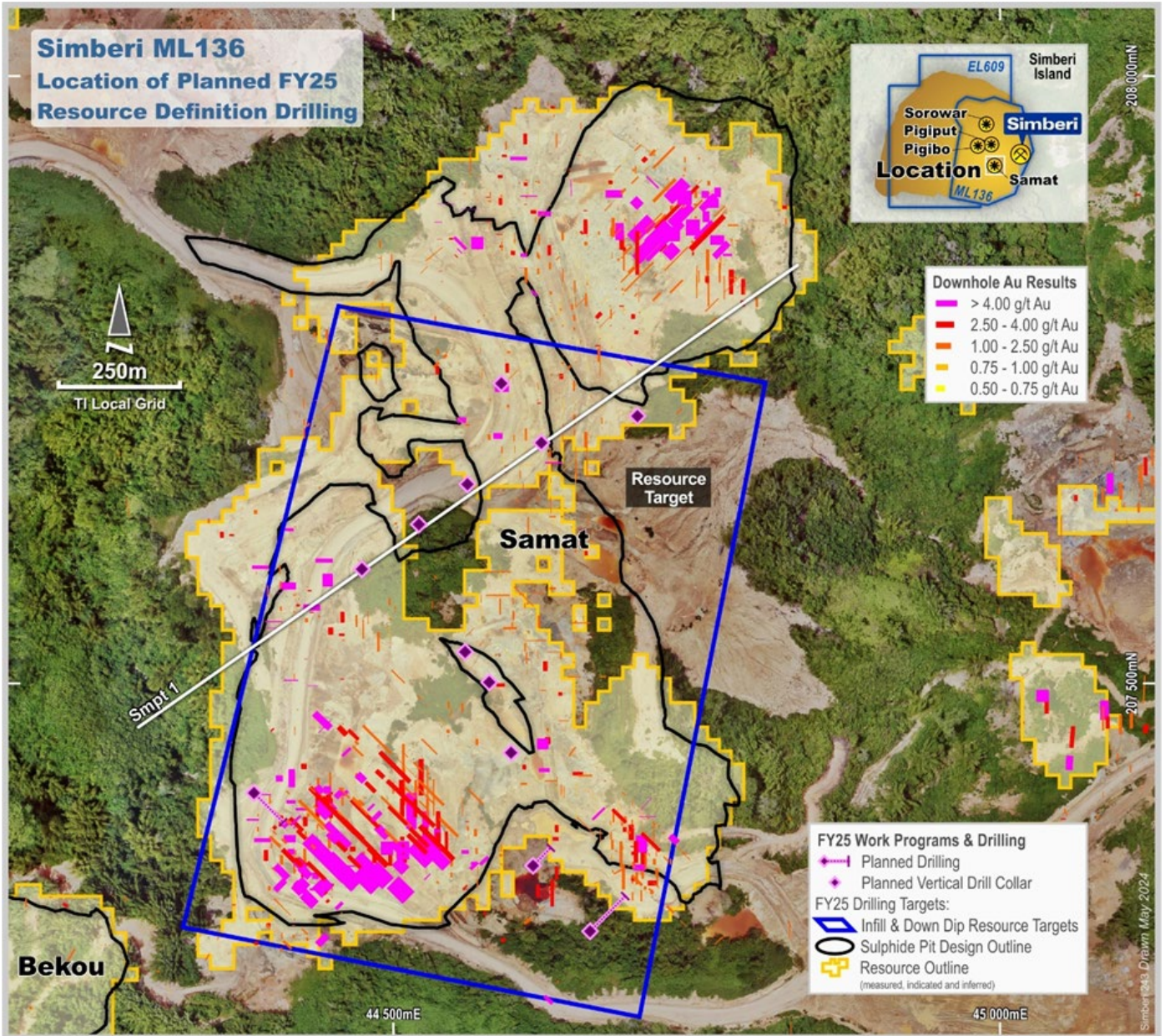
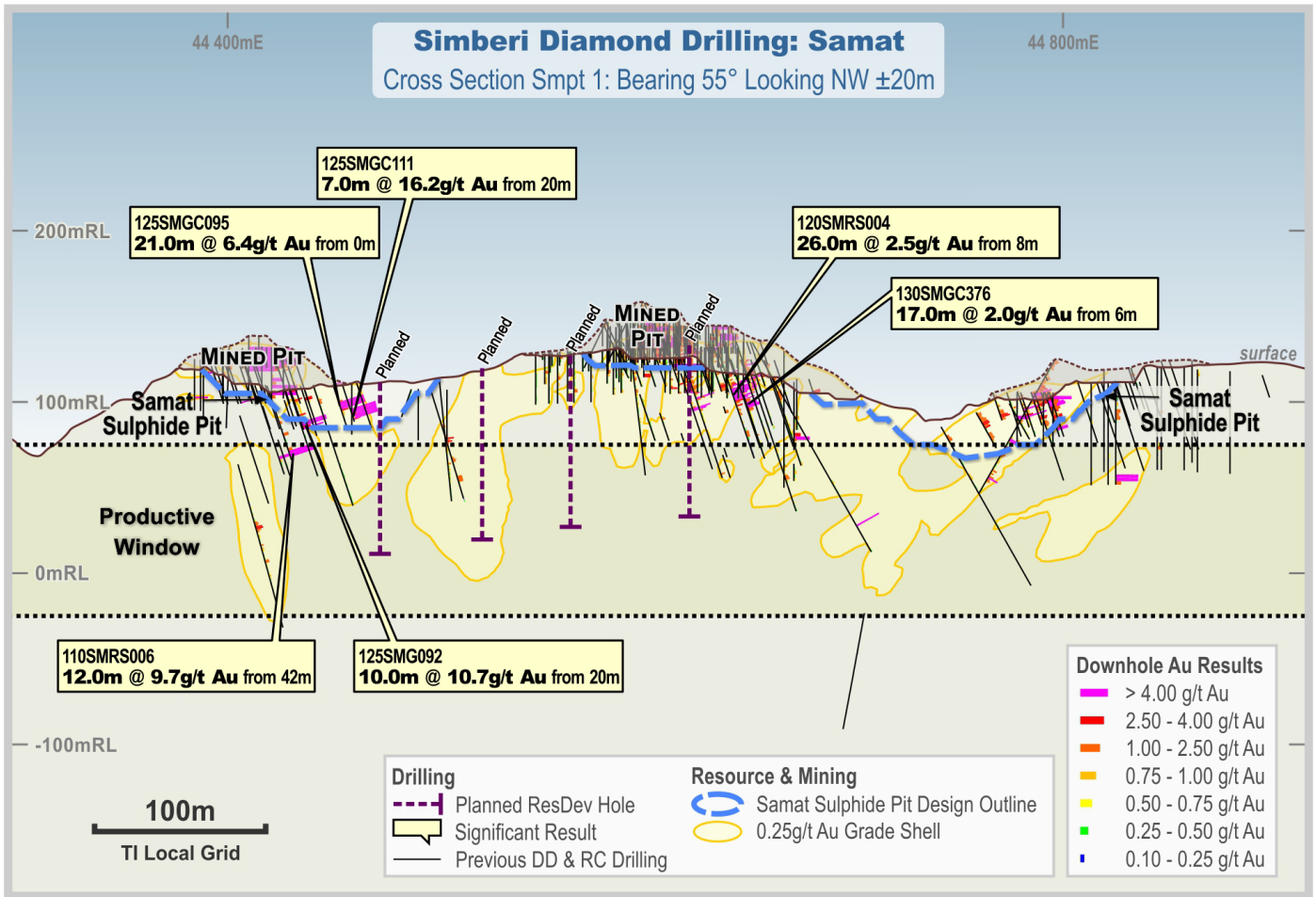


Figure 4. Drill Cross Section Smpt1 (View Looking Northwest), Samat, Simberi Island



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Competent Persons Statement

The information in this report that relates to Exploration Results is based on information compiled by Dr Roger Mustard, who is a Member of The Australasian Institute of Mining and Metallurgy. Dr Mustard is a full-time employee of St Barbara 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'. Dr Mustard consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.