

1 July 2021

ASX ANNOUNCEMENT

## Development Update - TGME Underground Projects

Theta Gold Mines Limited (“Theta Gold” or “Company”) (ASX: TGM | OTCQB: TGMGF) is pleased to provide an update on the development work at the TGME Underground Project following the release of the Maiden Underground Prefeasibility Study (PFS) and Maiden Underground Mining Reserve last quarter. The team onsite has been busy completing gravity surveys, mine surveys of historical mines that are as yet not included in current mineral resources, sampling of Rietfontein tailings dumps, and other workstreams.

### HIGHLIGHTS: TGME Initial development work

- Gravity survey completed across the existing tailing dam and planned extension area to ensure good ground conditions for future deposition.
- Rietfontein tailings dam has been sampled for gold content on 50m x 50m grid.
- Historical mine south of Beta had a mine survey completed to assist in orientating historical mine plans.
- Preparation for construction activities at the old gold plant.
- Eco Elementum / Triage has been appointed as engineers for waste management facilities and surface water management.
- Metallurgical testwork will continue in order to determine an optimised metallurgical process.
- Community forums have been established.
- Safety management system upgraded for site operations.
- Environmental monitoring in progress.



Figure 1 - Gravity Survey Grid Tailing Facilities and proposed extension

## Summary

The company continues with its active site program in order to ensure that the company is ready to commence with the mine development and preparing for plant construction activities in order to recommence mining Activities at TGME, Pilgrims Rest. The Phase 1 Underground Project (Beta, CDM and Frankfort Mines) Definitive Feasibility Study will be completed by Q1 2022. The Rietfontein mine Scoping study will be upgrade to a PFS.

The gravity survey is a requirement in terms of the National Standards (SANS 1936) in South Africa and is a prerequisite before any construction work can begin on the tailings dam. The gravity survey was completed successfully during May 2021.

As part of our ore reserve exploration strategy, focusing on both underground and surface sources, surface sampling was undertaken at the Rietfontein Mine's old tailings dam. Rietfontein tailings dam is not in the current resource estimate. If the initial drilling is positive then the Rietfontein tailings dam will be added to the resource table (See Appendix 1 Rietfontein Tailings Dam Drilling).

Mine survey activities involved the onsite mining team accessing the southern section of Beta Mine which does not as yet form part of the Company's resources. The team was able to identify markers and sample locations from historical mine plans. This will allow for the plans to be scanned and digitized, and now that the team has the spatial information required, to orient the plans correctly. Post validation and confirmation sampling of the historical stope samples. Should the validation sampling be successful this will allow the historical stope samples to be included in any future updated resource statement (See Appendix 2 Mine Survey).

Clean-up around the mine site has begun in readiness for decommissioning the old gold plant. The old CIL tanks were pumped out and cleaned for inspection. The inspection will determine if the tank can be salvaged (sold or reconditioned). (See Appendix 3 Decommissioning of the old gold plant).

Eco Elementum / Triage has been appointed to render professional engineering services to undertake the detailed designs for the proposed waste management facilities and surface water management infrastructure associated with the re-operationalisation of the MR83 UG mines.

Further metallurgical optimization work is required before finalising the process design. The larger equipment and long lead items, such as DMS, crushing circuit, tankage, etc. have been confirmed, however the carbon float recoveries will require further testwork in order to be optimised. Furthermore, pilot-scale oxidation and ultra-fine grinding work still needs to be undertaken as the simple laboratory-scale simulations will need to be confirmed on a larger scale. These activities are a work in progress and outcomes will be reported in due course.

Community engagements to support the development strategy and BEE restructure have commenced, with excellent sessions already taking place with the Pilgrims Rest Steering Committee and Maroabjang Communal Property Association, both of whom have already appointed representative trustees. These sessions are being led by the Mine Manager with support from the Director Government and Community Relations and Legal Executive. Community and political leadership have agreed to constitute a stakeholder engagement forum with management to lobby local government on expediting licencing and balancing regional conservation objectives with economic development. A meeting has been held with the

Department of Mineral Resources & Energy (“DMRE”) leadership to provide an update on the development strategy and appeal for reducing regulatory timelines.

A safety specialist has been working on-site to develop a Health, Safety and Environmental Management System for the operation. These include a baseline risk assessment that has been completed, issue-based risk assessment, critical task analysis, standards, and checklists. Standards, Managerial Instructions as well as COP’s and SOP’s will be implemented. This work is ongoing and is part of operational readiness.



**Figure 2 - Biomonitoring team on site**

Biomonitoring, surface and groundwater monitoring are conducted onsite regularly. Surface and groundwater monitoring is taking place monthly. Water samples are taken quarterly for analyses by REGEN Laboratory which includes samples from the tailings storage facility and rock waste dumps.

**Chairman Mr Bill Guy stated,** “The team has been busy following the release of the TGME Underground Project Prefeasibility Study which demonstrates that the extensive flat high-grade narrow reef systems of east Transvaal Goldfield can be mined economically, and modern mechanized mining and metallurgy can deliver strong project economics.”

“The team is focused on updating the safety and environmental management system which includes operational readiness workstreams that will lead the mine through the development phase into production.”

“The local community and onsite team have formed a community forum to petition for the support of the permitting process. The board thanks the local community for their support.”

This announcement was authorised for release by Mr Bill Guy, Chairman.

For more information please visit [www.thetagoldmines.com](http://www.thetagoldmines.com) or contact:



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### **ABOUT THETA GOLD MINES LIMITED**

Theta Gold Mines Limited (ASX: TGM | OTCQB: TGMGF) is a gold development company that holds a range of prospective gold assets in a world-renowned South African gold mining region. These assets include several surface and near-surface high-grade gold projects which provide cost advantages relative to other gold producers in the region.

Theta Gold's core project is located next to the historical gold mining town of Pilgrim's Rest, in Mpumalanga Province, some 370km northeast of Johannesburg by road or 95km north of Nelspruit (Capital City of Mpumalanga Province). Following small scale production from 2011 – 2015, the Company is currently focussing on the construction of a new gold processing plant within its approved footprint at the TGME plant, and for the processing of the Theta Open Pit oxide gold ore. Nearby surface and underground mines and prospects are expected to be further evaluated in the future.

The Company aims to build a solid production platform to over 160kozpa based primarily around shallow, open-pit or adit-entry shallow underground hard rock mining sources. Theta Gold has access to over 43 historical mines and prospect areas that can be accessed and explored, with over 6.7Moz of historical production recorded.

Theta Gold holds 100% issued capital of its South African subsidiary, Theta Gold (SA) Pty Ltd ("TGSA"). TGSA holds a 74% shareholding in both Transvaal Gold Mining Estates Limited ("TGME") and Sabie Mines (Pty) Ltd ("Sabie Mines"). The balance of shareholding is held by Black Economic Empowerment ("BEE") entities. The South African Mining Charter requires a minimum of 26% meaningful economic participation by the historically disadvantaged South Africans. The BEE shareholding in TGME and Sabie Mines is comprised of a combination of local community trusts, an employee trust and a strategic entrepreneurial partner.





## Appendix 1 Rietfontein Tailing Dam Drilling

As part of our ore reserve exploration strategy, focusing on both underground and surface sources, surface sampling was undertaken at the Rietfontein Mine's old tailings dam (Figures 3 & 4). The dump and dune sampling methods were used in taking these samples, this sampling method consists of a high-power auger drill inside a casing pipe. The auger drill uses a counterrotation motion between the outer core barrel and inner spiral, feeding a representative sample along the inside of the pipe casing.



**Figure 3 - Drill set up at Rietfontein Tailings Dam**



**Figure 4 - Dune Drilling Rietfontein Tailings Dam**



The Rietfontein tailings dam was sampled on a 50m by 50m grid covering the footprint of the dam. The drill holes were terminated at 8m with 10 kg bulk samples collected from each hole. In total 55 samples were collected and dispatched to the Gold 1 lab, a SANNAS approved laboratory.

## **Appendix 2 Mine Survey**

The onsite management team continues with underground investigations into the old mines, (Figures 5 and 6) gathering valuable information on accessibility, ground conditions, pre-development and possible sampling points. During the past months, access was gained into 3 old mines and historical data from these mines are now under review.



**Figure 5 – Onsite team reviewing historical underground plans of Beta Mine**



**Figure 6 – Chief Operating Officer underground at Historical Mine south of Beta Mine**

The onsite mining team accessed the southern section of the Beta mine which currently does not form part of the resource table. The team was able to identify markers and sample locations from historical mine plans.

The plans can now be correctly orientated in space which makes it possible to convert historical assay plans from a local grid co-ordinate system to a WG31 grid system. The plans will then be captured (scanned and digitized) into CAE (DataMine) Studio3™ via a digitising board.

The captured assay points can then be plotted on a plan of the underground workings to ensure that the points plot correctly. Scatter plots are then generated to examine the data set for errors introduced while capturing the data. This process will be used for all future projects which require modeling for the purpose of Mineral Resource estimation.

Later the team can come back for validation sampling once the geologists have determined the key areas.

### **Appendix 3: Preparation for upgrading of old gold plant**

Preparation for the upgrading work required in the plant has progressed well. Cleaning operations have been completed and decanting of tanks and bund areas will follow. The pump required to remove water from the tank areas has been installed. A Structural Engineer will visit the site during Q3 2021 do an assessment on the Pre-con tanks installed. The purpose is to determine if these tanks can be salvaged and re-used under the requirements for the plant PFS submitted. Stability and thickness test will be conducted, and a proposal submitted.



**Figure 7 - Tanks clean and ready for engineers inspection**