



# Tailings Storage Facility Inventory

as of May 15, 2023

1	2	2a	2b	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Tailing Storage Facility Name	Site Name (Location)	TSF Centroid Latitude	TSF Centroid Longitude	Ownership	TSF Status	TSF Start-up	Design Intent Compliance <sup>(a)</sup>	Raise Methodology <sup>(b)</sup>	Current Maximum Height	Current Tailings Volume	Planned Tailings Volume May 2028	Most recent Independent Review <sup>(c)</sup>	Engineering Records Complete	Hazard Classification <sup>(d)</sup>	Classification Guideline <sup>(e)</sup>	Stability ever Questioned <sup>(f)</sup>	Internal Oversight and/or External Support	Most Recent Dam Breach Study	Closure Plan in Place / Long Term Monitoring Included <sup>(g)</sup>	Climate Change Effects Considered <sup>(h)</sup>	Notes <sup>(i)</sup>
						(year)			(m)	(Mm <sup>3</sup> )	(Mm <sup>3</sup> )	(Month Year)	(Yes / No)			(Yes / No)	(Yes / No)	(Month Year)	(Yes / No)	(Yes / No)	
Fekola TSF 1 <sup>1</sup>	Fekola (Mali)	12°33'06" N	11°21'48" W	B2Gold (Mali) <sup>5</sup>	Operating	2017	Yes	DS	58.7	27.7	42.2	None <sup>12</sup>	Yes	High A	ANCOLD	No	Yes and Yes	Jun-2020	Yes and Yes	Yes	
Otjikoto TSF <sup>2</sup>	Otjikoto (Namibia)	20°00'15" S	17°04'50" W	B2Gold (EVI) <sup>6</sup>	Operating	2014	Yes	US <sup>10</sup>	25.0	20.0	32.4	Dec-2020	Yes	Very High	GISTM	Yes <sup>14</sup>	Yes and Yes	Jan-2023	Yes and Yes	Yes	
Masbate TSF <sup>3</sup>	Masbate (The Philippines)	12°26'45" N	123°23'47" E	Filminera (Zoom), PGPRC <sup>7</sup>	Operating	2009	Yes	DS, CL <sup>11</sup>	63.0	67.2	95.8	Jun-2020	Yes	Extreme	ANCOLD	Yes <sup>15</sup>	Yes and Yes	Apr-2019	Yes and Yes	Yes	
Atlas TSF <sup>4</sup>	Masbate (The Philippines)	12°28'38" N	123°23'03" E	Filminera (Zoom), PGPRC <sup>7</sup>	Inactive <sup>8</sup>	1980	Unknown <sup>9</sup>	DS	37.5	22.8	22.8	Jun-2020	Yes <sup>13</sup>	Extreme	ANCOLD	Yes <sup>16</sup>	Yes and Yes	Jul-2021	Yes and Yes	Yes	

## Column questions and applicable footnotes

### 1. "Tailings Facility" Name/identifier. Please identify every tailings storage facility and identify if there are multiple dams (saddle or secondary dams) within that facility.

- Fekola facility currently consists of three dam segments joined at approximately right angles to contain tailings within a natural basin.
- Otjikoto facility consists of seven dam segments (walls) that form a ring.
- Masbate facility consists of multiple saddle dams. Currently dams in place include, Main Dam, Saddle Dam 1&2, Saddle Dam 4, Saddle Dam 7, and Saddle Dam 8. Other segments of saddles have been eliminated as the facility reservoir level increased as they combined into one of the aforementioned dams.
- Atlas facility consists of three separate ponds with some segments of the dam walls shared with the adjacent ponds.

### 2. Location.

2a, 2b, Latitude and Longitude in decimal degrees of the approximate TSF centroid, as obtained from Google Earth Pro.

### 3. Ownership Please specify: Owned and Operated, Subsidiary, JV, NOJV, as of November 2021

- B2Gold owns an 80% interest in Fekola S.A. the Company's Malian exploitation company, the State of Mali holds the remaining 20% interest.
- B2Gold Namibia, the holder of Mining License 169 and operator of the Otjikoto Mine is 90% owned, indirectly, by B2Gold and 10% by EVI Mining (Proprietary) Ltd., a Namibian empowerment company.
- B2Gold holds its project interest through indirectly-owned subsidiaries. B2Gold has a 40% interest in Filminera and a 100% interest in PGPRC. The remaining 60% interest in Filminera is held by a Philippines-registered company, Zoom Mineral Holdings Inc. ("Zoom") that is owned by a Philippine shareholder.

### 4. Status: Active, Inactive/Care and Maintenance, Closed etc. Closed to mean: a closure plan was developed and approved by the relevant local government agency, and key stakeholders were involved in its development; a closed facility means the noted approved closure plan was fully implemented or the closure plan is in the process of being implemented. A facility that is inactive or under C&M is not considered closed until such time a closure plan has been implemented.

- Legacy facility inherited during property acquisition.

### 5. Date of initial operation.

### 6. Is the Dam currently operated or closed as per currently approved design?

- Unknown is indicated for legacy TSF that was acquired by B2Gold for which Engineering Records are not complete and the original design, operation and closure intent is not fully known.
- Additional field investigation and design work were completed in 2020 and 2021 to allow for Design Intent Compliance review [refer to note 15 (16) below for more information on the current status of the Atlas TSF].

### 7. Raising method: Upstream, Centerline, Modified Centreline, Downstream, Landform, Other.

- Upstream (US), centreline (CL), modified centreline (MCL), and/or downstream (DS) methodologies may have been used at any given facility.
- Otjikoto facility implements an upstream raise methodology, initial raise slurry deposition was performed by paddocking, in January 2017 the deposition methodology was changed to cycloning.
- The Masbate facility predominantly implements a downstream raise methodology, with the exception of stages 10 and 11 of the Main Dam and stage 11 of Saddle Dams 7 and 8 which were constructed as centreline raises.

### 8. Current Maximum Height

### 9. Current Tailings Storage Impoundment Volume: (m<sup>3</sup> as of May 2023)

### 10. Planned Tailings Storage Impoundment Volume in 5 years time. (m<sup>3</sup> as planned for May 2028)

### 11. Date of most recent Independent Expert Review. For this question we take 'Independent' to mean a suitably qualified individual or team, external to the Operation, that does not direct the design or construction work for that facility.

- Most recent 3<sup>rd</sup> Party Independent Review.
- A 3<sup>rd</sup> Party Independent Review is scheduled to take place in Q3 of 2023. B2Gold internal policies state; each tailings facility will conduct a 3<sup>rd</sup> Party Independent Review at minimum of every 5 years.

### 12. Do you have full and complete relevant engineering records including design, construction, operation, maintenance, and/or closure? We take the word "relevant" here to mean that you have all necessary documents to make an informed and substantiated decision on the safety of the dam, be it an old facility, or an acquisition, or legacy site.

- Not all engineering records were provided during acquisition of this legacy TSF. However, the data gathered from the geotechnical field investigation in 2020 and 2021 along with the additional slope stability assessment had allowed the completion of the engineering records of the Atlas TSF.

### 13. What is your hazard categorisation of this facility, based on the consequence of failure?

- It is imperative to note that hazard classification is determined based on the consequential impact if a facility were to experience a failure. The listed hazard classifications do not in any way represent a probability of failure, or risk of failure, of a facility.

### 14. What guideline do you follow for the classification system?

- ANCOLD = Australian National Committee on Large Dams, GISTM = Global Industry Standard on Tailings Management

### 15. Has this facility, at any point in its history, failed to be confirmed or certified as stable, or experienced notable stability concerns, as identified by an independent engineer (even if later certified as stable by the same or a different firm). We note that this will depend on factors including local legislation that are not necessarily tied to best practice. As such, and because remedial action may have been taken, a "Yes" answer may not indicate heightened risk. Stability concerns might include toe seepage, dam movement, overtopping, spillway failure, piping etc. If yes, have appropriately designed and reviewed mitigation actions been implemented? We also note that this question does not bear upon the appropriateness of the criteria, but rather the stewardship levels of the facility or the dam.

- Not being certified/confirmed as stable is assumed to be where a noted deficiency is deemed sufficiently significant to trigger a catastrophic failure –the term deficiency is used in that context herein; for operating facilities, this refers to any identified deficiency for the current life/stage and for a previous life/stage, any deficiency that was not addressed as vetted by independent review; for closed/legacy facilities, this refers to any deficiency identified that reflects the current state of the facility.

- Otjikoto TSF was originally designed using drained shear strength parameters for tailings deposit, following industry standards at that time. A cone penetration testing (CPT) program was carried out in 2022 to verify the in-situ behaviour of tailings. The undrained shear strength parameters estimated from the CPT data were used to evaluate the slope stability of the TSF dam walls at static, earthquake, and post-liquefaction conditions. The 2023 updated stability results indicated that TSF walls meet the minimum required factor of safety (FoS) under static and earthquake loading except for one cross section which was marginally below the minimum required FoS. B2Gold has taken immediate corrective action to flatten the steep downstream slopes of the non-compliant cross section to design profile to increase FoS and improve the overall stability of the TSF. However, the updated slope stability analyses indicated that if static (flow) liquefaction is triggered in the deposited contractive tailings, then the TSF walls will not meet the minimum required FoS recommended by international guidelines. A mitigation options study is underway, which will address the stability of the TSF under a static liquefaction event.

- The Masbate facility has been extensively reviewed by various independent consultants over the last three years; areas of investigation included 1) Historic use of lithic-tuff material in embankment construction, a detailed geotechnical drilling investigation was completed which showed that a narrow section in Main Dam stage 9 included lithic tuff, the stability modelling of the material resulted in Factor of Safety values larger than 1.5 which meets closure criteria. 2) Foundation preparation was investigated via geotechnical drilling and confirmed that all unsuitable material was removed. 3) A high phreatic surface was returned in a single piezometer within a saddle dam was investigated and determined that the piezometer was incorrectly drilled through natural ground level and into the groundwater table which was providing a false reading of a high phreatic surface. 4) A peer review of stage 11 pseudo-static stability conditions was questioned due to different assumed values of the tailings stability characteristics. In-situ samples of tailings were retrieved from the beach at various locations and depth to confirm material parameters and eliminate this concern. The stability analyses were updated using the recent field and laboratory data and the findings indicated that the TSF meet the minimum required FoS at the current constructed stages under static and earthquake loading conditions as recommended by ANCOLD. The stability of the TSF will continue to be assessed for future dam raises.

- The mine was abandoned in 1994; a new owner purchased the property in 1995 and performed a tailings management study in 1997 as part of a feasibility study. This document noted stability concerns under seismic conditions and recommended a stabilization buttress. B2Gold has not found any records to support if the historic recommendations were implemented. In 2020, B2Gold performed an independent third-party risk assessment and geotechnical investigation of the facility. The study has yielded critical information to guide our mitigation plan and achieve closure criteria. The largest cell, Pond ABCD (approximately 85% of the facility by volume) was noted as free draining and that it is not susceptible to a flow failure during a seismic event. Extensive ground investigation work was undertaken in 2020 and 2021. The results from the new field data confirmed that tailings within Pond ABCD and Pond F are unlikely to be susceptible to liquefaction. The updated slope stability analyses indicated that the embankment stability does not meet the minimum required factor of safety under Operating Base Earthquake and Maximum Credible Earthquake loads recommended by ANCOLD. However, numerical modelling indicated that under earthquake loading only limited deformation will occur in the TSF due to the closure capping layer and the high undrained shear strength of the tailings. B2Gold has taken immediate corrective action to remove the surface water from ponds and has finished the installation of a closure cover over the entire TSF surface area which prevents any accumulation of supernatant water and reduce the risk of flow failure. Moreover, erosion (flood) protection is currently under construction to protect the embankment against erosion due to flooding within the Guinobatan River. It is important to note that the facility has lay dormant for 30 years (1994) and the monitoring data returned over this time has not indicated stability concerns.

### 16. Do you have internal/in house engineering specialist oversight of this facility? Or do you have external engineering support for this purpose?

### 17. Has a formal analysis of the downstream impact on communities, ecosystems and critical infrastructure in the event of catastrophic failure been undertaken and to reflect final conditions? If so, when did this assessment take place? Please answer 'yes' or 'no', and if 'yes', provide a date.

### 18. Is there a) a closure plan in place for this dam, and b) does it include long term monitoring? Please answer both parts of this question (e.g. Yes and Yes)

- Closure plans are generated from start of design of a facility and are regularly updated throughout the life of the facility. Closure plans begin at a conceptual state and are progressively updated over the life of mine.

### 19. Have you, or do you plan to assess your tailings facilities against the impact of more regular extreme weather events as a result of climate change, e.g. over the next two years?

- Climate change effects are considered through regular review of extreme weather events records (e.g., event return period and precipitation magnitude). In addition, B2Gold plans to further incorporate climate change risks into our enterprise and site assessment and planning processes, to better adapt to the physical impacts of climate change and to increase the resilience of our operations and business.

### 20. Any other relevant information and supporting documentation. Please state if you have omitted any other exposure to tailings facilities through any joint ventures you may have.

- Information is current as of the date 15 May 2023.