

DECEMBER 2022

KAREE TAILINGS STORAGE  
 FACILITY (TSF) 2 & 3

DETAILS OF TAILINGS STORAGE FACILITY

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|--|--|
| Tailings Storage Facility (TSF) Name     | Karee Mine Tailings Dams 2 and 3 (TD2 & TD3)   |
| Operation                                | Marikana   |
| Operational Status                       | Active   |
| Operating Segment                        | RSA - PGM  |
| Location                                 | 40km east of the town of Rustenburg in the Northwest Province - please refer to Figure 1 |
| Latitude, Longitude (decimals)           | TD2: -25.6769, 27.4460<br>TD3: -25.6769, 27.6769   |
| Ore Source                               | Underground  |
| Type of Storage Facility                 | Impoundment (upstream development)   |
| Deposition Methodology                   | Spigot, converting to Hybrid Paddock System during 2023                                  |
| Year of Commissioning                    | TD2: 2001<br>TD3: 2002   |
| Consequence Classification (GISTM, 2020) | Very High  |
| Operating Contractor                     | Fraser Alexander (Pty) Ltd (FAT)   |
| Engineer of Record (EoR)                 | SLR Consulting (Pty) Ltd   |
| Current Maximum Height (m)               | TD2: 32<br>TD3: 33   |
| Final Maximum Height (m)                 | TD2: 35<br>TD3: 36   |
| Maximum Storage Capacity (tons/month)    | TD2: 130 000<br>TD3: 190 000   |
| Life of TSF (year)                       | TD2: 2026 @1.3m/yr<br>TD3A: 2024 @1,5m/yr and TD3B: 2024 @2,1m/yr                        |



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## TECHNICAL ASPECTS:

|  |  |
|--|--|
| Adopted Factor of Safety                                     | Australian National Committee on Large Dams (ANCOLD) (July 2019)   |
| Stability Assessment and Mitigation Measures (if applicable) | A detailed stability assessment based on piezocone probing and laboratory test work was conducted in 2022. (SLR Project No: 720.19129.00042 Rev A, December 2022)<br><br>All the FoS are above the required limits |
| Dam Breach Assessment  | Assessment completed in 2022 (SLR Project No: 720.19129.00011 Rev 1, December 2022)  |
| Area of Inundation   | Has been identified by EoRs – please refer to Figure 2   |
| Summary of Human Exposure                                    | Consequence classification has been based on Population at Risk (PAR). Communities have been identified and are being engaged through various means including Community Engagement Forums (CEF)                    |
| <b>DOCUMENTATION:</b>  |  |
| Site Specific OMS Manual                                     | Version 2022 available   |
| Dam Safety Review (DSR)                                      | Carried out by an independent third party in 2020. All recommendations at the time have been addressed in the last 2 years. (KP Reference: RI301-00877/02 Rev B, 26 August 2022)                                   |
| Design Basis Report (DBR)                                    | Version 2022 available (SLR Project No: 720.19129.00032 Rev 1, December 2022)  |
| Environmental Management Programme (EMPr)                    | In place   |
| <u>Surveillance:</u>   |  |
| Surveillance Frequency                                       | Daily by the Operator and monthly reports of critical controls submitted to and reviewed by the EoR  |
| Surveillance Technology/System                               | K2Fly Decipher   |
| Deformation Monitoring                                       | Interferometric Synthetic Aperture Radar (InSAR)   |
| Phreatic Surface Levels & Pore Pressure Measurements         | Standpipe piezometers<br>AquaSense Retrofit piezometers (IoT device)<br>Vibrating Wire Piezometers (VWP's)   |

## RISK MANAGEMENT / EMERGENCY PREPAREDNESS:

### Risk Assessment

Annual Risk Assessment (Bowtie) completed with no untoward risk identified

### Risk Management

Site specific OMS Manual in place  
 Site specific Trigger Action Response Plans (TARPs) in place  
 Critical controls established and implemented  
 Operating contractor Technical and Operational Risk Assessment System (TORAS)

### Site Specific Emergency Preparedness & Response Plans (EPRP)

Version 2022 available

Annual emergency mock drill for a catastrophic TSF failure – undertaken on 18 November 2022 with SSW employees and contractors.

## CLOSURE & POST CLOSURE

### Closure Planning

In place - report prepared by Golder Associates (Golder Reference: 20141966-340280-9, June 2021)

### Closure Costing

Adequate financial capacity in place  
 Financials prepared by Golder Associates (Golder Reference: 21467970-349390-1, December 2021)

### Asset Insurance Cover

In place – July 2022 to June 2023

## Independent Reviews:

### Independent Tailings Review Board (ITRB)

12 July 2022 with no material concerns identified

### Future ITRB Review

2025

### Performance Reviews

Annual and quarterly reports and inspections completed by EoR (SLR Project No: 720.19129.00032 Rev 0, March 2022)



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Figure 1: Layout of Karee Tailings Dam Complex

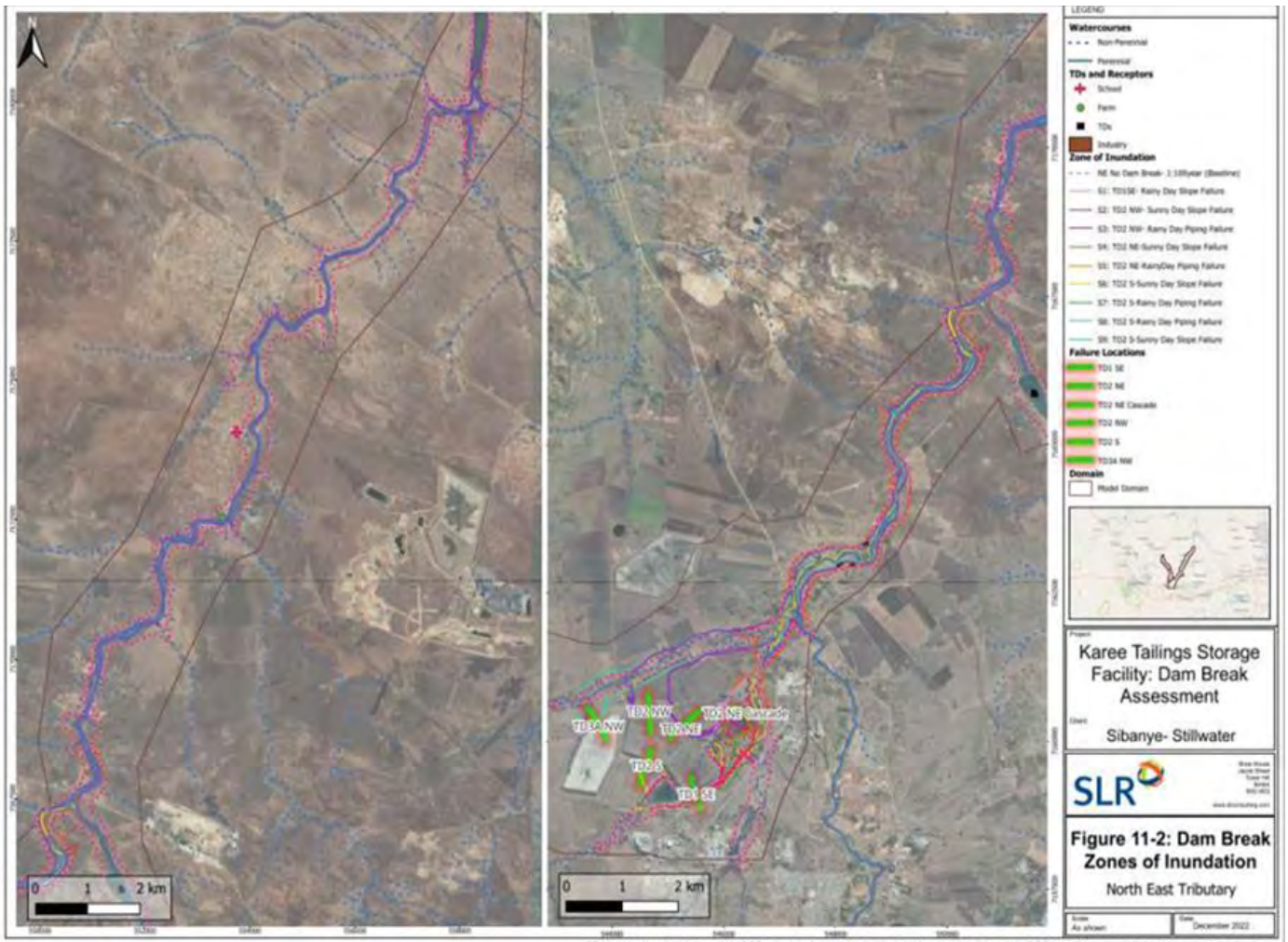


Figure 2: Area of Inundation (North-East tributary)