



DECEMBER 2023

KLOOF TAILINGS
STORAGE FACILITY (TSF) 2

DETAILS OF TAILINGS STORAGE FACILITY

Tailings Storage Facility (TSF) Name	Kloof TSF 2
Operation	Kloof
Operational Status	Dormant since December 2022
Operating Segment	RSA - Gold
Location	Near Westonaria, southwest of Johannesburg - please refer to Figure 1
Latitude, Longitude (decimals)	-26.4434417, 27.5908444
Ore Source	Underground
Type of Storage Facility	Impoundment (upstream development)
Deposition Methodology	Day-Wall Paddock
Year of Commissioning	1960
Consequence Classification (GISTM, 2020)	High
Operating Contractor	Stefanutti Stocks Inland (SSI)
Engineer of Record (EoR)	Knight Piesold (Pty) Ltd
Current Maximum Height (m)	60
Final Maximum Height (m)	60
Total Volume Already Deposited (Mm³)	41.8
Life of TSF (year)	N/A



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TECHNICAL ASPECTS:

Design Criteria

GISTM and best practice guidelines including Australian National Committee on Large Dams (ANCOLD) (Guidelines on Tailings Dams, July 2019). Site specific design criteria were specified by the EoR. Details are included in the Design Basis Report (DBR).

Stability Assessment and Mitigation Measures

A detailed stability assessment based on piezocone probing was conducted in 2022. (KP Reference: RI301-00726/22-A Rev A, 23 June 2023)

All the FoS are above the recommended limits and thus no mitigation measures were required.

Dam Breach Assessment

Assessment completed in 2022
(KP Reference: RI301-00726/22 Rev A, 23 June 2023)

Area of Inundation

Has been identified by EoRs – please refer to Figures 2 to 7

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)

DOCUMENTATION:

Site Specific OMS Manual

Version 2022 available

Mandatory Code of Practice (MCOP) Document No: RI301-00726/08 is in place (dated September 2022)

Design Basis Report (DBR)

Version 2022 available
(KP Reference: RI301-00726/28-A Rev 0, 9 December 2022)

Environmental Management System

The Environmental Management System is ISO accredited (ISO 14001:2015)

The initial Environmental Management Programme (EMPr) is dated 2011.



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Surveillance:

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
AquaSense Retrofit piezometers (IoT device)
Vibrating Wire Piezometers (VWP's) to be installed in 2023

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

Site Specific Emergency Preparedness & Response Plans (EPRP)

Version 2023 available

Annual emergency mock drill for a catastrophic TSF failure – undertaken on 15 June 2023 with SSW employees and contractors.

CLOSURE & POST CLOSURE

Closure Planning

In place - report prepared by Golder Associates (Golder Reference: 20360027-341339-2, April 2021)

Closure Costing

Adequate financial capacity in place
Financials prepared by Golder Associates (Golder Reference: 20447293-349383-5, December 2021)

Asset Insurance Cover

In place – July 2023 to June 2024



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Independent Reviews:

Independent Tailings Review Board (ITRB)	25 August 2021 with no material concerns identified
Future ITRB Review	2025
Performance Reviews	Annual and quarterly reports with inspections completed by EoR (KP Reference: RI301-00726/28 Rev 0, 3 April 2023)
Dam Safety Review (DSR)	Carried out by an independent third party in 2019/2020 with no material findings (KP Reference: 301-00840/02-004 Rev 1, February 2020) Next review scheduled for 2025



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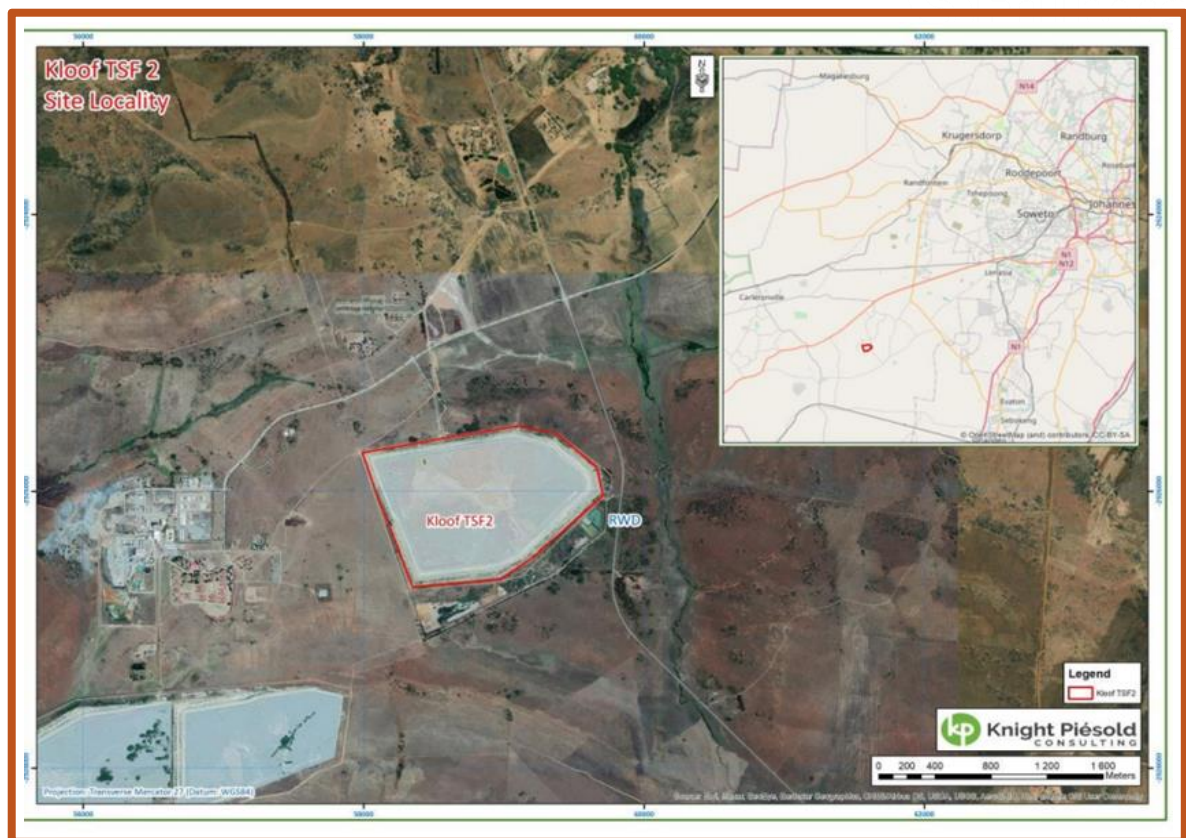


Figure 1: Layout of Kloof TSF 2

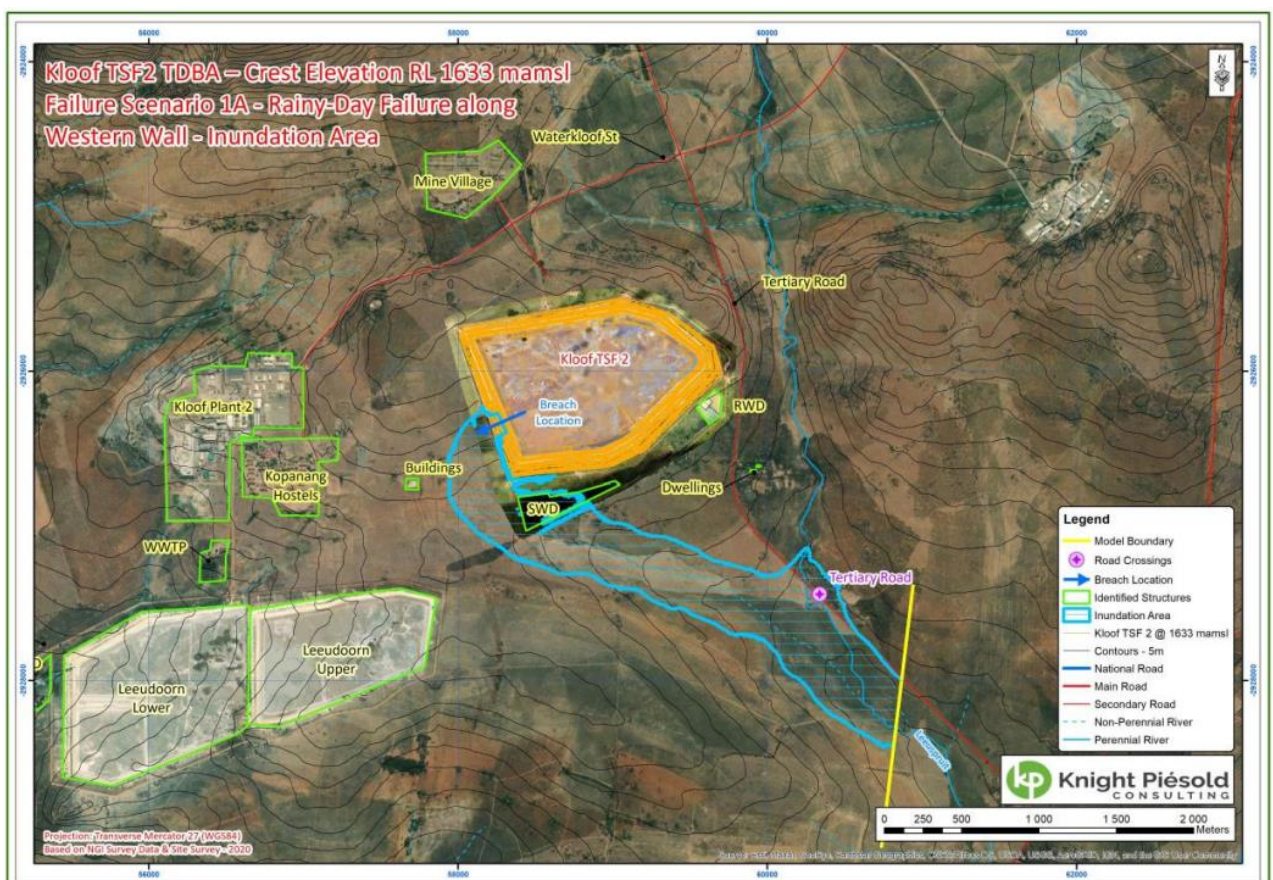


Figure 2: : Inundation Map for a Breach at the Western Wall (preliminary)



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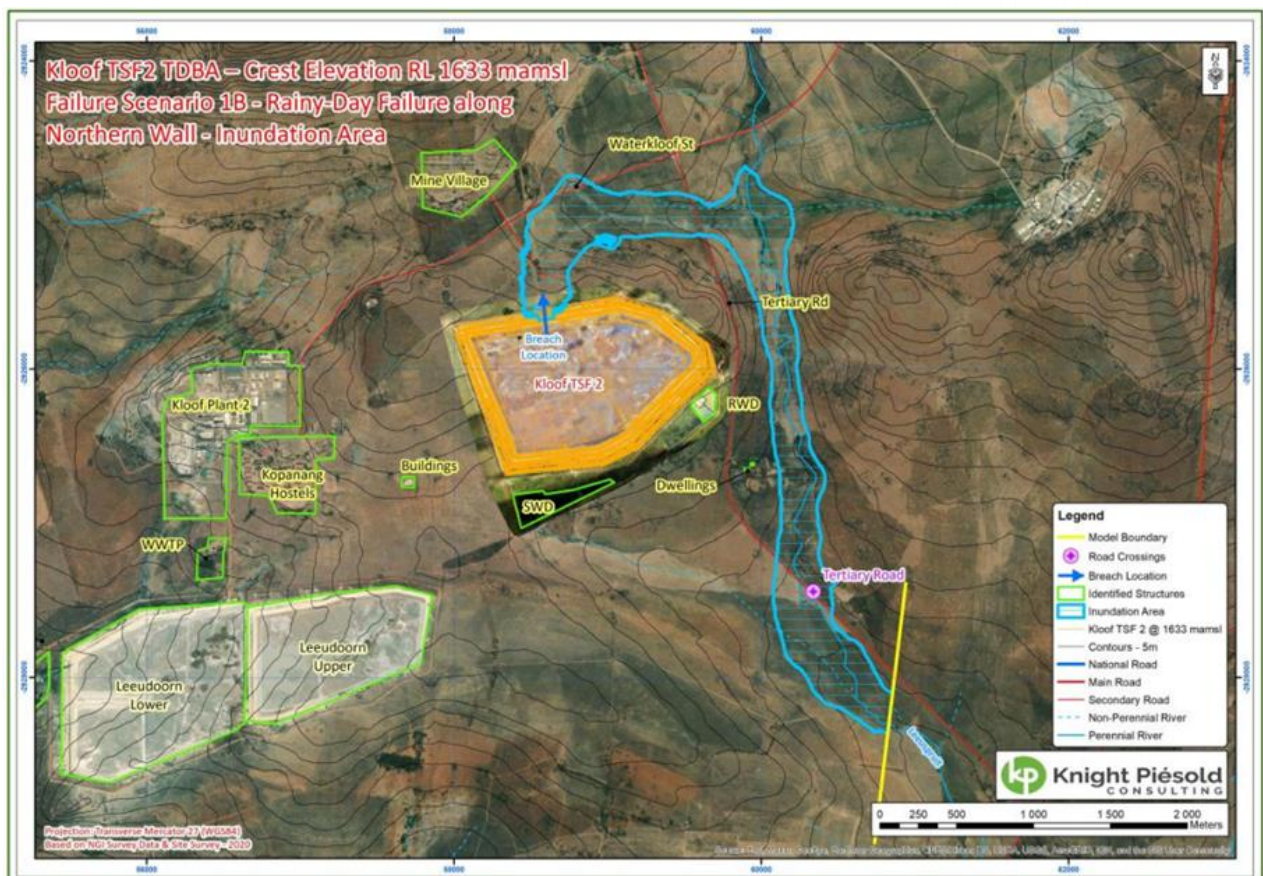


Figure 3: Inundation Map for a Breach at the Northern Wall (preliminary)

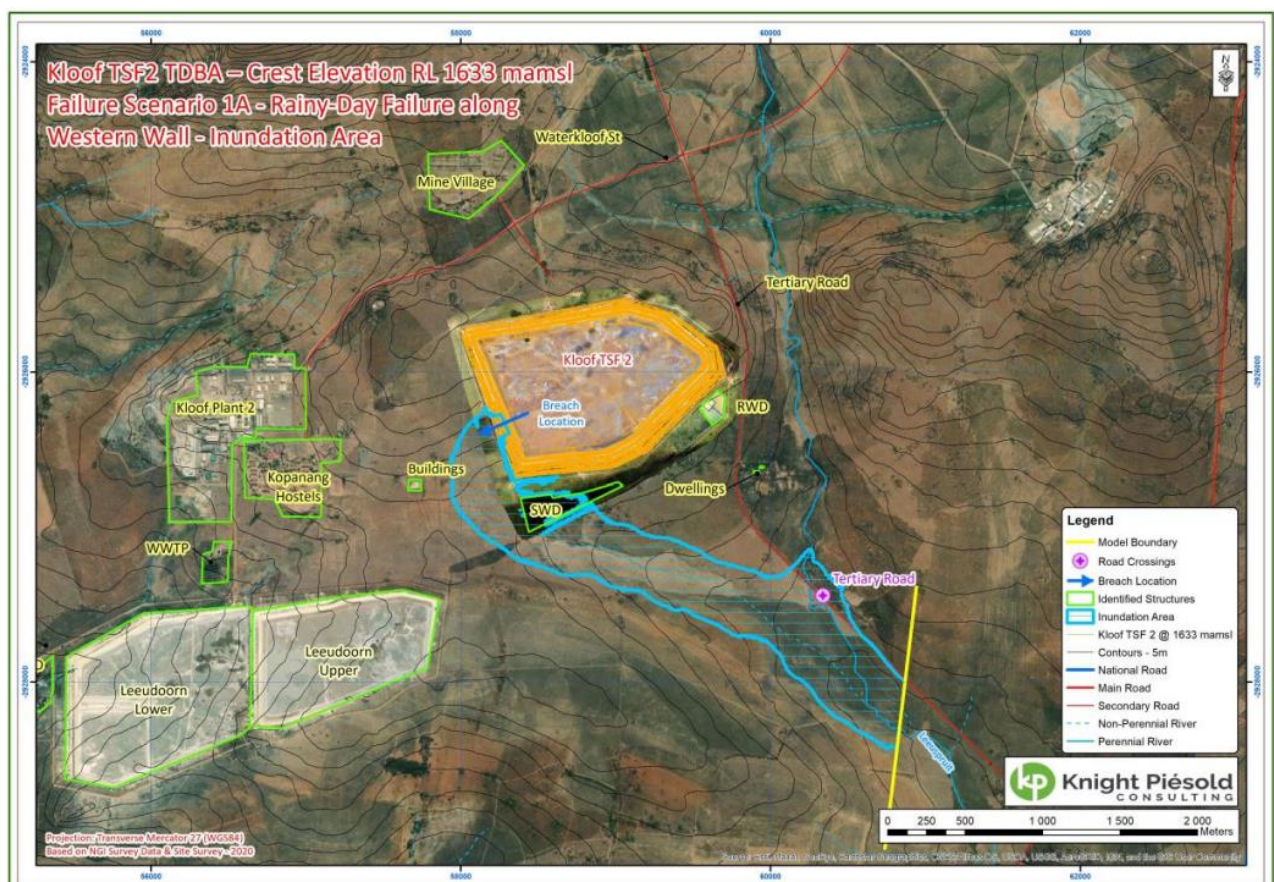


Figure 4: Inundation Map for a Breach at the South-Eastern Wall (preliminary)

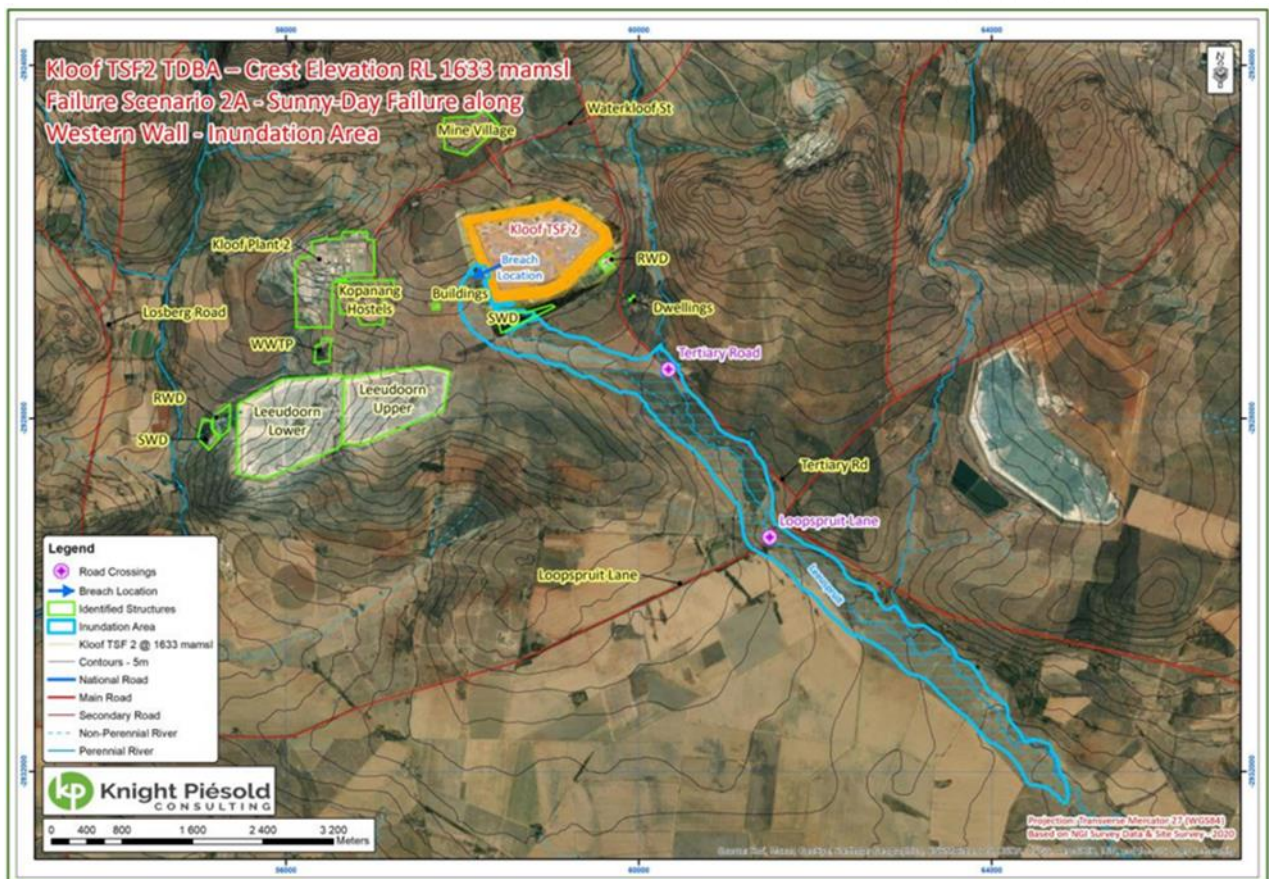


Figure 5: Inundation Map for a Breach at the Western Wall (preliminary)

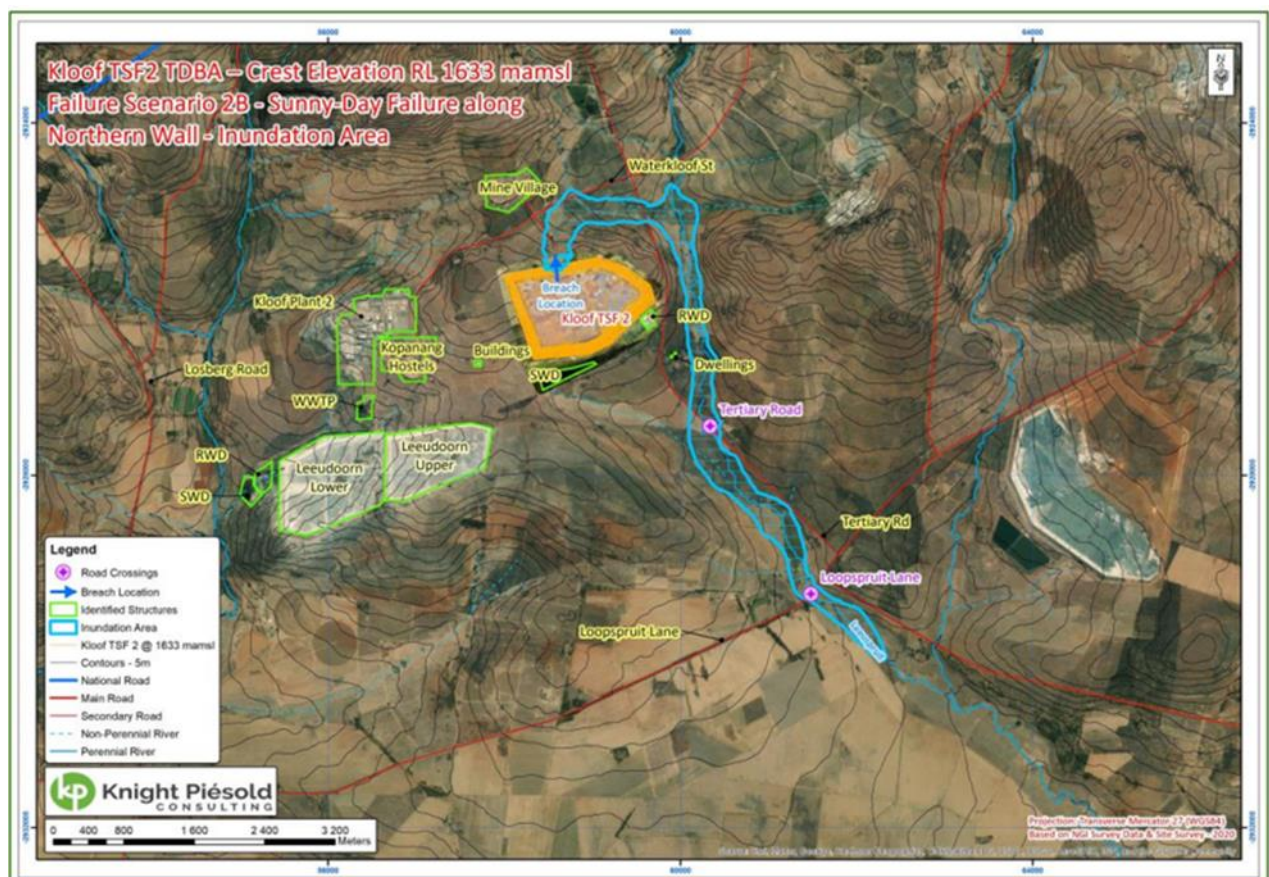


Figure 6: Inundation Map for a Breach at the Northern Wall (preliminary)



Figure 7: Inundation Map for a Breach at the South-Eastern Wall (preliminary)



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