

“ This scan was a true world first, as this is the first time that a vertical scan has been done over depth of 931 m. ...there was absolutely no other supplier in the whole of Africa that can firstly do this kind of scanning, and can secondly mobilise the winch that is required to lower the scanning device through a shaft.”

-Roelf Smit, Chief Ventilation Engineer

SHAFT SCAN, SIYANDA, EMESENT HOVERMAP (CAVITY SCANS) Phophi Marara and Romany Grove

Siyanda Bakgatla Platinum Mine (Pty) Ltd, also known as Union Mine, is a platinum group metals producing mine located in Swartklip, Limpopo Province, Republic of South Africa. The mine was acquired from Anglo American Platinum by Siyanda Resources and the Bakgatla-Ba-Kgafela Joint Venture, with the acquisition taking effect from February 1st, 2018.



MINE/PROJECT LOCATION:
Siyanda Ventilation Shafts, Northam, Limpopo

YEAR OF PROJECT:
2023

CLIENT:
Siyanda Bakgatla Platinum Mines

PROJECT FOCUS:
Shaft scan to check shaft integrity

COMMODITY:
PGMs

DWYKA MINING SERVICES SOLUTION:
Emesent Hovermap ST-X in raise cage

PROBLEM:

Assessing the integrity of unlined and unequipped ventilation shafts, each approximately 1,000 meters in length, required a fast, cost-effective, and safe solution. As there was no winding or winching system available at the top of the shafts, personnel could not be lowered down them.

SOLUTION:

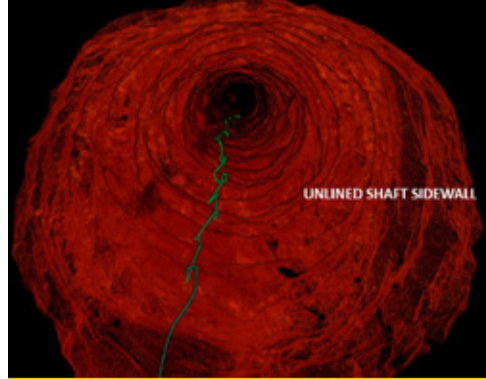
Dwyka Mining Services offers advanced shaft scanning services for unequipped shafts, with the capability of scanning to a depth of 1,300 meters. The scanning equipment used includes the Emesent Hovermap ST-X LiDAR SLAM scanner, a raise cage, and a Dwyka Mining Services winch. This enables scanning of 1,000-metre-deep shafts within 1.5 hours, with data processing taking less than 4 hours after the scan. The scanning results in accuracies of up to 20mm.

RESULT:

The upcast ventilation shaft was successfully scanned in 1.5 hours, and 50GB of data was processed within 3.5 hours. The scan revealed the rough blasted areas, as well as the lined areas and the areas where water seeps through the rock. Upon further analysis of the historical survey data, it was discovered that the shaft was not completely vertical. As a result, the Hovermap in the raise cage intersected the sidewall almost halfway down the shaft. However, this did not affect the quality of the scan, and a complete understanding of the shaft to a depth of 930m was provided.

In summary, Dwyka Mining Services offers scanning of unequipped vertical shafts up to a depth of 1,300m, using both the scanner and winch provided by their company.

- KEY TAKEAWAYS:**
- ✓ Dwyka Mining Services offers a full shaft scanning service, including winch and Emesent Hovermap LiDAR SLAM scanner.
 - ✓ Shaft scans through Dwyka Mining Services are quick, easy, and accurate.
 - ✓ Shafts of up to 1,300m in depth can be scanned.



For more information on this case study and/or general info on Dwyka Mining Services, send us an email, or visit our website.

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