

Expert review of Cadia tailings facility completed

Newcrest has received the final report from the Independent Technical Review Board (“ITRB”) appointed to investigate the technical root cause of the tailings dam embankment slump at its Cadia operation in New South Wales, Australia. The ITRB comprised international experts and was chaired by Dr Norbert Morgenstern.

A copy of the ITRB’s final report is available on the [Newcrest website](#), together with a video summary of the Northern Tailings Storage Facility (“NTSF”) slump on [Newcrest's YouTube channel](#).

Newcrest Managing Director and Chief Executive Officer, Sandeep Biswas, said: “We welcome the ITRB report which provides a great deal of technical insight which we will share with the industry. We accept all the findings and recommendations of the ITRB and will work with our stakeholders, including the NSW regulators, and continue the extensive drilling and geotechnical analysis of the foundations of the northern and southern tailings facilities which commenced following the slump. We will continue to place the safety of our workforce and local community, together with care for the environment, at the forefront of our mind in operation of the southern tailings storage facility and as we progress work on the repair plans for the northern tailings storage facility. We are targeting completion of a study on the repair plan in Q2 FY20.”

Background

On 9 March 2018, a slump occurred in the southern wall of Cadia’s NTSF, causing it to lose containment of tailings from part of the NTSF. The slump did not result in any injuries or environmental damage as the tailings released were captured in the abutting Southern Tailings Storage Facility (“STSF”). There has been no abnormal movement in the NTSF wall, or release of material from the NTSF, over the past year.

ITRB findings

The ITRB report concluded that the dominant factor determining the location of the slump was the existence of a low-density foundation layer in the vicinity of the slump. Other factors that contributed were the local height of the dam, the prevailing phreatic conditions, and excavation at the toe of the structure in the area of the slump.

The low-density foundation layer material, which had not previously been identified, is relatively weak and highly compressible and brittle when subjected to significant load. It was determined that the failure of this weak foundation material, when placed under load accumulated through the construction history, resulted in deformation of the wall. This then triggered liquefaction of part of the tailings behind the embankment, causing it to slump forward. The ITRB report noted that this material has to date only been found in close proximity to the area of the slump.

Detailed seismic response analyses were conducted, with the ITRB concluding that the small seismic events which occurred the day prior to the slump did not contribute to the slump.

ITRB recommendations

The ITRB made the following key recommendations in respect of Newcrest’s intentions to restore operation of the NTSF and maintaining operation of the STSF, all of which have been accepted and will be actioned by Newcrest:

<i>ITRB recommendation</i>	<i>Newcrest response</i>
Continue to work on ensuring that the design and maintenance of the foundations take into account any weak material comparable to that in the area of the NTSF slump, as well as the limited drainage within the body of both the NTSF and STSF and the potential for liquefaction of the tailings	<ul style="list-style-type: none"> • Newcrest will expand and continue the significant drilling and geotechnical assessments already undertaken in relation to the STSF and NTSF to enhance understanding of the foundation of both facilities • Newcrest will take the factors identified by the ITRB into account for the ongoing operation, maintenance and design of future lifts of both facilities, including necessary buttressing • A study on repair plans for the NTSF has commenced and is targeting completion in Q2 FY20. It will incorporate the outcomes of the aforementioned programme of work
Enhance the level and type of monitoring equipment, including monitoring within the foundations of the TSFs, to ensure that the foundation is behaving as intended	Newcrest has significantly increased surface monitoring since the NTSF slump and has ordered further foundation monitoring equipment recommended by the ITRB, which will be installed from May 2019 and progressively over 2019
The design, construction and operation of upstream tailings dams should be approached with a more precautionary view	Newcrest agrees and will be taking a more precautionary view as advocated by the ITRB

Ongoing operation of the STSF

Newcrest has engaged expert engineering firms to confirm that the STSF remains safe to operate, and this was reconfirmed following receipt of the ITRB findings.

Consistent with recommendations from these experts, in 2018 Newcrest commenced construction of buttresses in two areas of the STSF, which have now been completed. In designing this buttressing, Newcrest and its external engineers have assumed the potential presence of weak material analogous to that in the area of the NTSF slump and adopted conservative strength parameters.

Repair of the NTSF and ongoing tailings capacity

The findings of the ITRB will be factored into the study for the repair of the NTSF, which is expected to be completed in Q2 FY20.

The prohibition notice issued by the NSW resources regulator on depositing tailings in the NTSF remains in place. Newcrest will continue to work closely with the relevant regulators.

The Cadia operation will continue to deposit tailings in both the STSF and the Cadia Hill Open Pit tailings storage facility. A modification application will shortly be submitted for approval to use the remaining third of the Cadia Hill Open Pit for tailings storage which, if approved, would combine with the STSF to provide the Cadia operation with tailings storage capacity for approximately ten years.

For further information please contact

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