Cadia Continued Operations Project

NEWCREST MINING LIMITED
CADIA

PROJECT INFORMATION SHEET ISSUE #2 - SITE INVESTIGATIONS

As introduced in Project Information Sheet #1, Newcrest has commenced planning for a long-term continuation to mining operations known as the Cadia Continued Operations Project (CCOP). Identification of additional tailings storage is one of the key components of the CCOP.

January 2022

Introduction

Tailings are the uneconomic by-product from gold processing and consist of ground rock and ore processing reagents. They must be safely stored in an engineered facility that is built to stringent Australian and international standards that provide both safe containment during operations and a stable post mining landform.

At Cadia, tailings are managed within approved Tailings Storage Facilities (TSFs), identified as the Northern TSF, Southern TSF and Cadia Hill Pit TSF (PTSF). Cadia has capacity to store tailings within these TSF's for the current approved mine life, however, the proposed TSF (known as TSF4) would be required to manage tailings from remaining ore reserves identified in the CCOP.

Newcrest Mining has identified a preferred location for TSF4 south of and over the existing Southern TSF. This location was selected following review of social, environmental and technical considerations relevant to TSF design.

What are site investigations?

As the embankments forming the TSF will be constructed on the natural ground it is important to understand the foundation conditions. This ensures the facility safely stores tailings during operations and after closure.

Site investigation is the process of collecting data to inform the geological, geotechnical, hydrogeologic, environmental, climatic, seismic, and engineering attributes of a potential TSF site. The data acquired during site investigation is used to guide the analyses, modelling and testing undertaken during TSF design. These in-turn determine the appropriate layout, design, construction, operation, and closure strategies for the TSF which meet industry, Newcrest and regulatory standards.

Why are site investigations required?

Site investigations are critical to understand foundation conditions and developing appropriate designs to safely store tailings. Data from these investigations help develop the safe maximum height and slopes for the TSF embankments. They also identify variability in sub-surface conditions and ensures that the engineering for the embankments is correspondingly safe . Once identified these units can be avoided, removed, or modified as part of design (which also accounts for TSF performance under extreme conditions e.g. large earthquakes and floods), or during construction by staging the works to eliminate or reduce these geological risks.

Site investigations also provide information to enable impacts to surface water and groundwater to be understood and mitigated through design, and for early consideration and planning of closure and rehabilitation.

Haven't these investigations been completed?

Staged investigation is a normal part of the engineering process, and each program builds upon the findings of those before. Site investigations for TSF4 commenced in 2020 and confirmed the area did not retain mineral resources, with ground conditions technically suitable for TSF construction identified. On-going site investigations will target collection of data to support design and will include:

a) further characterisation of bedrock systems (through geophysics, drilling, field, and laboratory testing);
b) additional mapping and characterisation of soil and overburden (through test pitting, field and laboratory testing);
c) ongoing assessment of the bedrock foundation (through geophysics, drilling, field, and laboratory testing); and
d) installation of additional instrumentation to quantify the range of baseline geological and hydrogeological (groundwater) conditions.

What are the main components of the site investigations?

To further develop the understanding of the foundation conditions beneath the TSF impoundment and embankments the site investigations will include:

Geological Mapping

Field based mapping by a geologist indicating the possible bedrock outcrops, linear surface features (indicating presence of faults and folds), springs, seeps and soil exposures. Mapping allows rapid identification of sub-surface geological features which may need to be considered during TSF design.

Geophysical Surveys

Geophysical surveys include electromagnetic, resistivity and seismic analysis over large areas. These do not require surface excavation and provide information on the depth of soil and geological units, depth to groundwater and potential location of faults, and variations in the properties of soil and rock. This information is then used in geological, geotechnical and groundwater models to inform TSF design.

Foundation Excavations

This includes drilling below ground to depths of approximately 40 m, or soil test pits, generally to depths of approximately 4 m, to better understand the composition and engineering properties of the soil and rock. Locations target sub-surface features such as faults or weak rock identified during mapping and geophysics to ensure they are appropriately considered in design.

Geotechnical Testing & Instrumentation

Instrumentation will be installed to test the properties of the foundation (e.g. permeability and strength) and inform how sub-surface conditions vary in response to natural phenomena. Instrumentation also plays a role during operations and closure by allowing embankment performance data to be compared to baseline (pre-construction) values.

Laboratory Testing

Analysis of soil and rock samples taken during the foundation excavations program will confirm the properties and engineering performance of the sub-surface materials to be used in the foundations under the expected load conditions.

Investigations will also continue beyond the current design phase as the project advances to ensure the TSF4 design is safe and meets all regulatory, industry and company requirements.

How can I be involved?

Cadia will continue to consult with the community on its ongoing operations via its existing engagement and information provision program including:

- **Cadia District Residents project specific briefings**
- **Community Consultative Committee (CCC) meetings**
- **Individual and one-on-one meetings with landholders**
- **Cadia District Newsletter**
- **Briefings with Government**

Your feedback is important to us.

Cadia is committed to ensuring the participation of local communities through the CCOP planning and assessment process. Stakeholder engagement through all phases of the CCOP project aims to hear your views and understand the matters of most importance to you. Future opportunities to be consulted will be during the development of the Environmental Impact Statement.

If you have any further questions regarding our project and site investigations please refer to the contact information below.

Contact Information

Phone: **1800 063 043**

Email: **c.copeis@newcrest.com.au**

Online Project portal web address:

https://caportal.com.au/umwelt/cadia

Online Project portal QR Code