

Construction and Rehabilitation of Costeans and Bulk Sample Pits

1 Introduction

Explorers are required under the *Mining Management Act* to rehabilitate areas impacted by their exploration activities. The main goal in environmental management of exploration activities is to minimise or prevent unnecessary impacts and rehabilitate sites where disturbance cannot be avoided.

Costeans and bulk sample pits are required to be excavated with a minimum of disturbance to the environment and be rehabilitated in such a way as to reinstate the natural land surface, promote rapid revegetation and prevent the initiation of soil erosion.

2 Requirements

2.1 Costeans and Bulk Sample Pits

2.1.1 Construction

Minimising environmental disturbance during construction can be achieved by:

- Locating excavations to minimise vegetation clearance and avoiding large trees.
- Using appropriate equipment such as backhoes and excavators. The use of bulldozers will not be supported.
- Avoiding excavation of costeans or bulk sample pits in steep terrain. This is discouraged. If a costean or bulk sample pit is excavated directly up/down slope, internal bunding may be required on moderately sloping ground to minimise erosion within the excavation.
- Stockpiling topsoil and subsoil separately on either side of the costean or bulk sample pit, for later rehabilitation if not required for sampling purposes (See Figure 1).
- Ensuring every costean or bulk sample pit is sloped at one, or preferably both ends to allow the escape of native fauna and stock.
- Preventing erosion on sloping ground by installing drainage structures which minimise surface water flow into the excavation. Catch drains should not be used as they can lead to increased soil erosion. Instead, the topsoil and subsoil stockpiles can be used to divert water around the excavation site provided that the stockpiles' outer edges extend beyond the edge of the excavation (**Figure 1**).
- Avoiding deep narrow trenches. If necessary cut back the sides of the excavation or shore up with suitable supports. It is highly recommended that the excavation of costeans and bulk sample pits also be undertaken according to the *Excavation Work - Code of Practice*, available from Safe Work Australia.

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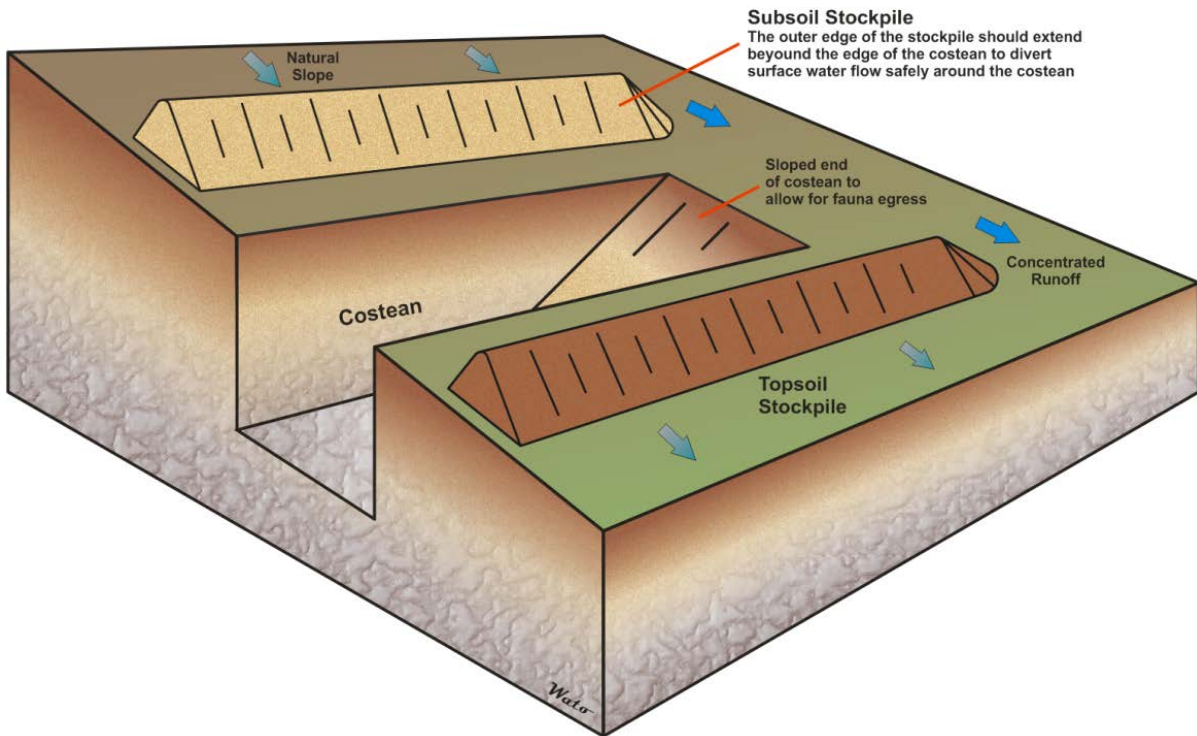


Figure 1. Example of costean showing locations of topsoil and subsoil stockpiles during construction.

2.1.2 Rehabilitation

Maximising rehabilitation success can be achieved by:

- Backfilling costeans with the stockpiled subsoil and topsoil, in the correct sequence, as soon as sampling/mapping has been completed and before the onset of the next wet season (in the tropics) or as soon as practicable (in the arid zone).
- Backfilling bulk sample pits as fully as possible with stockpiled rock, subsoil and topsoil. Reduce all batter slopes to 1V:4H gradient or less, and re-contour. Respread stockpiled topsoil to aid revegetation.

If the costean or bulk sample pit, or materials disposed of within the pit, contain naturally occurring radioactive material (NORM), please refer to the *'Exploration for Naturally Occurring Radioactive Materials in the Northern Territory'* Advisory Note available at nt.gov.au/minerals-energy for more information.