

Mine Tailings Waste Storage



Upstream Dam

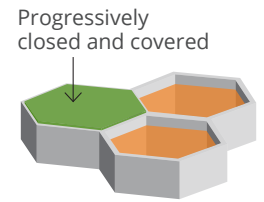
⊘ Not recommended, and jurisdictions have increasingly banned upstream dams.



Centerline Dam



Downstream Dam



Filtered or Densified Tailings Cells



□ **What are tailings?** Tailings are finely ground muddy or sandy mine wastes left behind after the valuable metals and minerals have been extracted from the ore. Industrial-scale mining generates billions of tons of tailings every year worldwide, and contains toxic substances that can harm human health and the environment if not managed properly.

Tailings waste are typically stored behind large dams that can reach hundreds of metres in height and are built progressively over many years out of the mine's own waste material. When tailings dams fail they can release a powerful wave of waste and contaminated water that destroys communities and ecosystems.

Upstream dams, built up on top of the tailings themselves, are the most common (and often cheapest) type of dams, and have significant risks of failure, especially in seismic and wet climate areas.

Centreline and downstream dams, built on crushed rock or fill, are generally less vulnerable to failures.

Other types of tailings disposal that do not include large dams include: filtered and densified tailings cells (enclosed); "dry stack" surface piles (to be covered to prevent wind and water erosion); and putting tailings back in mined-out open pits or underground.



Top and bottom photos by Júlia Pontés; center photos by Ecoflight.