

Tailings Management – Bauxite

Fine tailings generated by bauxite mining operations require responsible management to minimise potential environmental impacts. Although, storage in mined-out areas is the preferred approach the increasing pumping distances usually force storage in dedicated TSF's local to the mine processing facility.

Phibion has devised an in-situ process, called Accelerated Mechanical Consolidation (AMC) or more commonly 'Mud Farming' to accelerate the dewatering of bauxite tailings at the tailings storage facility (TSF). Using the MudMaster® this approach removes entrained water from tailings, rapidly reducing the volume. A reduced tailings volume reduces the operational area of the TSF, reduces the proportion of recovered water lost to evaporation and reduces the capital expenditure required to sustain the facility.

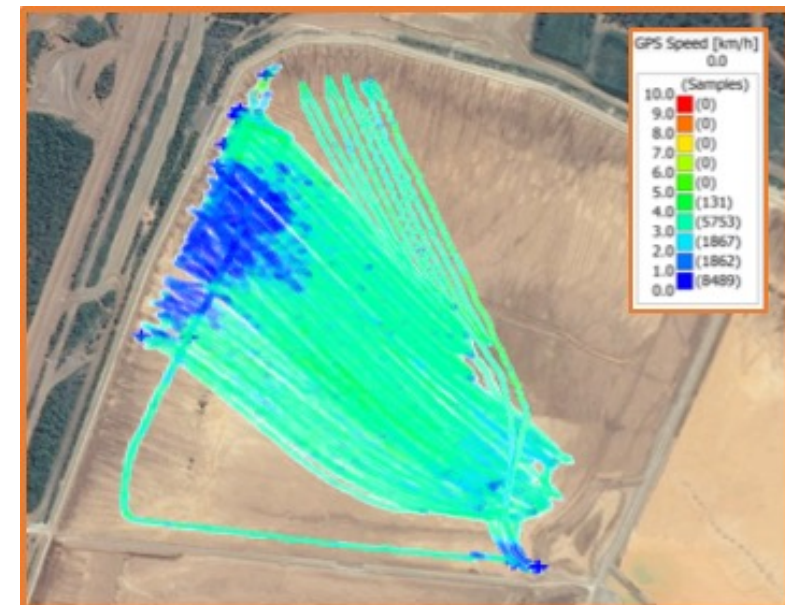


AMC operations in fine bauxite tailings

When applied to bauxite tailings these operations deliver:

- Consolidation to high density and strength within 42 days and reducing operational footprint by up to 50%;
- A vane shear strength >35 kPa permitting consideration of upstream construction to increase storage capacity;
- Water returns of >75% of tailings volume to maximise recycling and minimise impact on precious water resources; and
- Final landforms that can mimic natural topography and can be closed from the moment operations cease.

The process works by disturbing the hindered settling properties of the tailings to release entrained water and then safely transitioning to a consolidation/compaction operation delivering a high final density and strength.



AMC operations tracking and productivity

Phibion can provide AMC services to your organisation. We will provide the customised MudMaster®, employ and train local operators, manage maintenance/sparing and monitor performance. Additionally, we can provide supporting works, strategic planning and reporting.

Our services will maximise your TSF performance with no capital expenditure and none of the operational/financial risks of filtration or centrifugation. This approach is safe, infinitely scalable and can be sustained under all conditions.

Phibion can deliver this performance at a fraction of the cost of other potential alternatives and allow your operation to realise its potential today, without compromising the future.

Munro, L.D. and Smirk, D.D. 'How thick is thick enough?' *Paste* 2018, Perth, Australia