

Closure - Coal

Coal fines, a by-product of coal washing, is usually stored in mined out voids adjacent the mine operations. Coal fines are dominated by a clay mineralogy, are extremely fine grained and have poor drainage properties.

Currently, when these voids reach capacity, fines deposition ceases and the mining company then must wait for solar drying and passive consolidation until such stage as the surface exhibits sufficient strength to permit access for closure operations. However, this approach does not always work and often the void cannot be safely closed.

Phibion has devised an in-situ process, called Accelerated Mechanical Consolidation (AMC) or more commonly 'Mud Farming' to accelerate the dewatering of coal fines in the void. Using the MudMaster® this approach removes entrained water from coal fines, rapidly reducing the volume. Reducing the coal fines volume leads to the development of a strong, stable surface that permits access for conventional earthmoving equipment and commence closure operations.



AMC operations in coal fines

When applied to coal fines these operations deliver:

- A trafficable surface within 16 weeks plus a maturation period; and
- Final densities approaching the liquid limit and strengths up to 10 kPa.

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



Closure operations post AMC management

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

Our services will maximise your performance with no capital expenditure and none of the operational/financial risks of conventional management. 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