

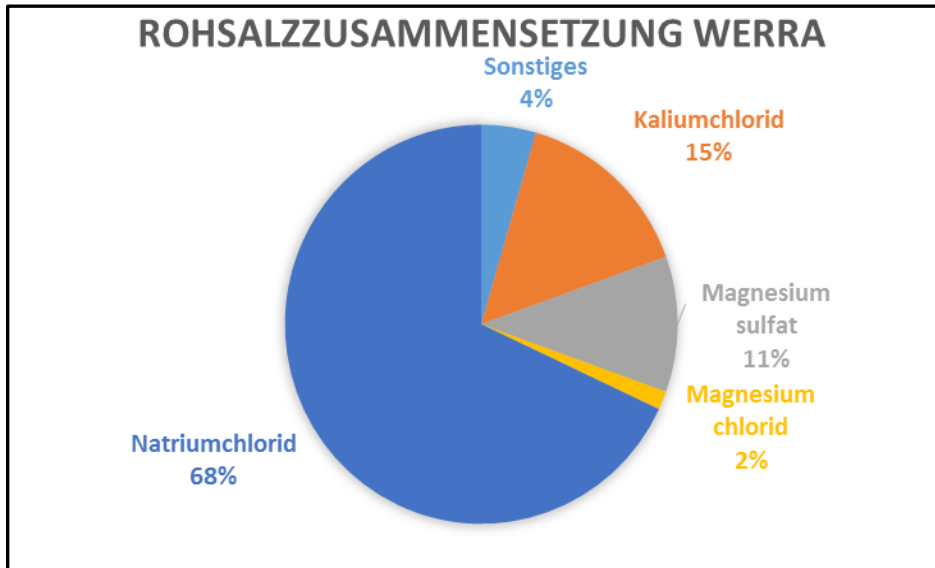
Covering of Potash Tailings Piles

IFAT 2026

IFAT
Munich



Extractive Waste from Potash Mining



~ 20% product

~ 80% mining wastes (mainly salt)

~ 30% liquid wastes

~ 70% solid wastes

Tailings piles sites



Large and Medium sized Tailings Piles

Large tailings piles (active mining sites):

- Hattorf
- Wintershall
- Neuhof-Ellers
- Zielitz
- (Sigmundshall)

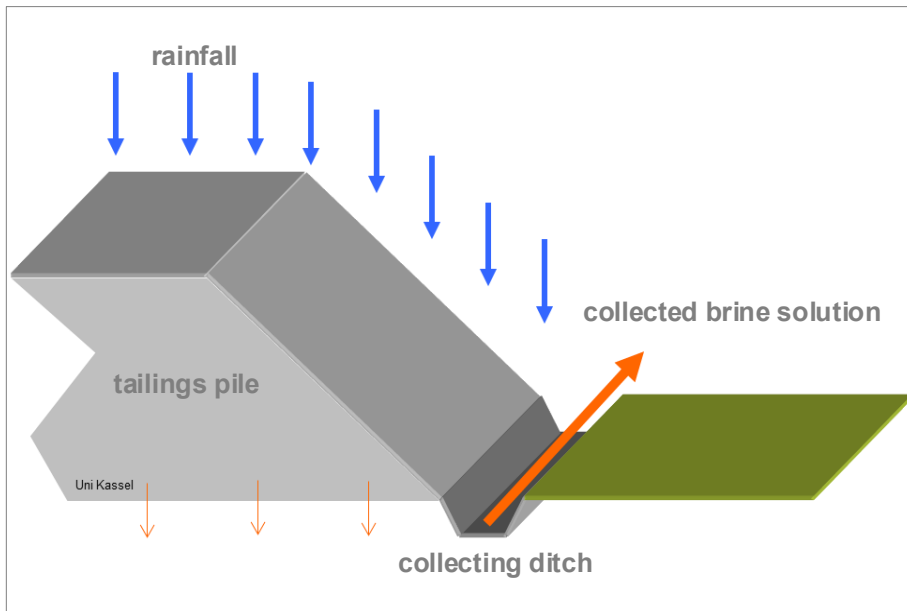


Medium sized tailings piles (inactive mining sites):

- Hugo
- Siegfried-Giesen
- Niedersachsen

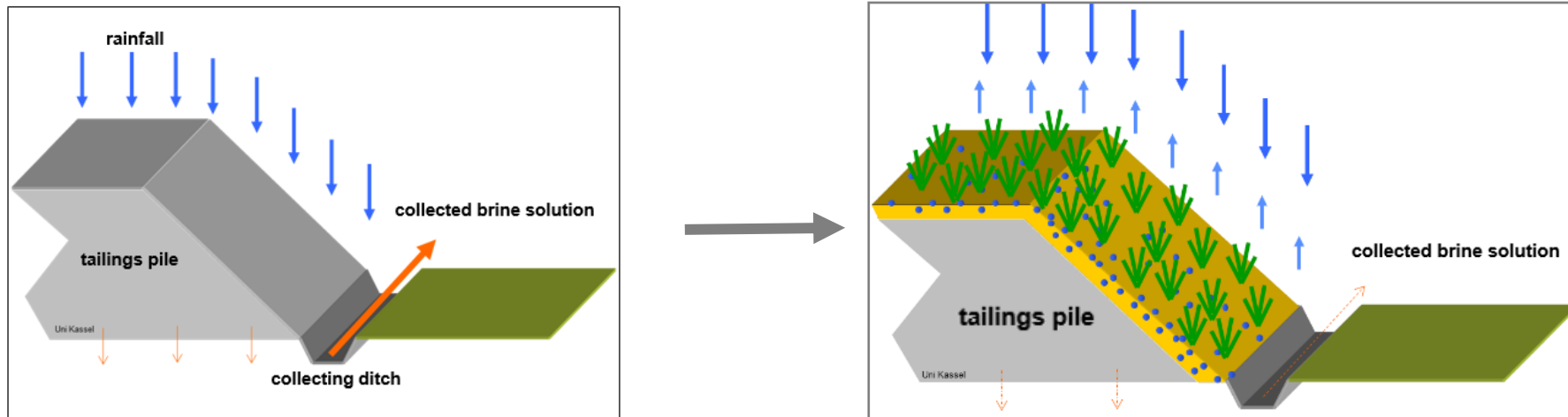


Brine Forming due to Rainfall



- Rainfall on potash tailings piles leads to the formation of salt brines, by solving the excavation residues. These brines need to be collected in ditches at the base of the tailings piles and properly disposed
- A small part of these brines percolates within the underground of the tailings pile.

Aim of the Cover

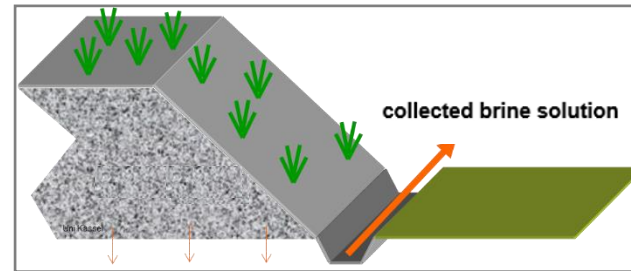


Aim of the cover:

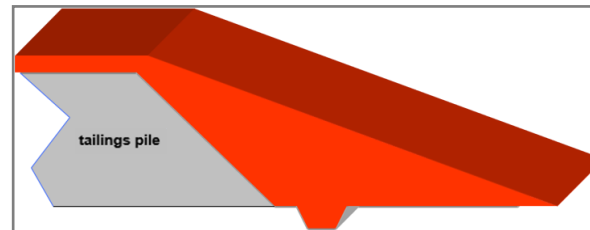
- Reduction of the amount of brine water, that needs to be disposed
- Reduction of the seepage under the tailings piles
- Reutilizing non-hazardous wastes
- Saving space on waste dumps
- Generating new habitats

Covering Techniques

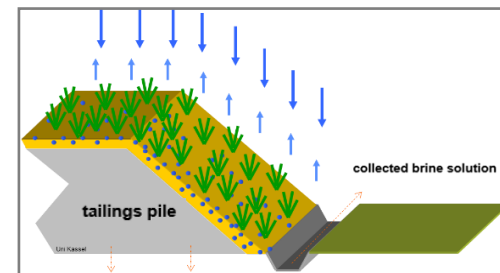
1. Direct vegetation:
not possible for large
tailings piles



2. Common covering:
not possible for all large
tailings piles



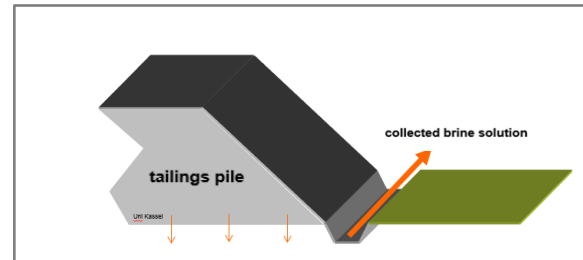
3. Thin layer cover:
Developed for large
tailings piles



Covering Techniques

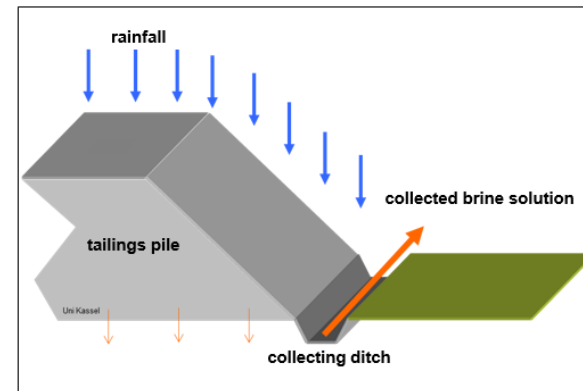
4. Technical evaporation cover:

Developed for large tailings piles



5. Ponds at plateau areas:

No long-term solution








6. Combinations

Covering Materials

- Due to the specific boundary conditions, different cover systems are used on different tailings piles.
- Depending on the cover method, different materials are used for capping. These can be broadly divided into three classes:
 - soil and construction debris
 - other mineral waste materials (e.g. ash from municipal waste incineration)
 - binding agents (e.g. ash from coal-fired power generation)
- The basis for the use of all materials is their environmentally safe recovery.

Aims of the Covering

-  Reduction of the amount of brine water, that needs to be disposed
-  Reutilizing non-hazardous wastes
-  Saving space on waste dumps
-  centralized disposal with high monitoring standards
-  Generating new habitats

