	Korea Zinc	No.	9
		Approved.	Mar, 2022
		Last Reviewed.	Nov 10, 2023
		Revision No.	1

Mineral Waste Management Policy

Effective Date: Nov 10, 2023

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Revision history

Revision No.	Amendment Clause	Change Description	Revision Date
1	-	- Standardization of content and format - Revision of the 'Standards and Guidelines'	Nov 10, 2023

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Objective

Korea Zinc recognizes that safe management of mineral waste is very important to prevent serious damage to health, wildlife, groundwater, surface water and environment.

Therefore, Korea Zinc establishes the policy for the safe management of mineral waste and strives for active implementation.

The mineral waste policy of Korea Zinc is applied with other internationally accepted standards and guidelines, along with the laws and regulations of countries and regions where Korea Zinc is engaged in business directly or through investment, and follows more strict standards.

What are the Tailings?

- They are worthless parts (mineral scraps) that are left to separate the minerals needed from the ore, and the content of the recovered component which is low among the products produced during the operation of separating ore or other industrial raw material minerals from other target minerals or worthless components by physical or mechanical ways. They are the opposite of the high-concentration product, mineral concentrate.

- If proper management is not carried out, the natural environment can be damaged due to the outflow of mine water, the inflow of leachate into the mine dam, dust scattering, contamination of farmland and living environment, groundwater, surface water and soil pollution. They may contain heavy metals such as copper, lead, cadmium and nitrogen, and due to their very small particles, inhalation into the human body through the respiratory system may have a harmful effect on the lungs.

- **[How to take care of Tailings]**

  - Landfill method: After constructing storage facilities such as retaining walls in the tailing field, install waterproofing facilities and rainwater detention facilities in the vicinity to isolate tailings from the outside, and cover the top with soil.
  - Solidification/Stabilization method: Add insoluble chemicals to tailings to stabilize and prevent heavy metal dissolution
  - Mineral filling method: Fill tailings into existing and closed mines
  - Soil cleaning method: extract heavy metals by adding chemicals to tailings to remove the source of

contamination
- Recycling method: Reclaim and recycle tailings from construction materials or useful metal components in tailings
- Disarm method: Separate tailings containing a high concentration of pollutants from non-contaminated tailings through physical treatment such as magnetic separation and gravity concentration

Mineral Waste Management Standards and Guidelines

[Management Standards]

All mining waste-related facilities of Korea Zinc strongly comply with the regulatory requirements. Also, we continuously improve the management of the relevant facilities.

The planning, design, construction, operation, dissolution and closure of facilities and equipment related to mineral waste are governed by the following principles:

- The structure must be stable.
- The solids and water must be managed within the designated and approved areas.
- Facilities must be complied with the relevant regulations.
- Facilities must be complied with relevant standards, internal policies, industry best practices and technical guidelines in the business operation area.

In addition, Korea Zinc strives to ensure the safe operation and monitoring of mineral waste management facilities with comprehensive systems and procedures including:

- We monitor tailing dams, bridges, natural slopes and water levels using surveillance systems that include technologies such as GPS, piezometers, gradient meters, pressure gauges and remote sensing.
- Inspection is conducted from time to time by trained workers and professional technical staff.
- We perform periodic and official safety inspections by an externally certified engineer (We release the results of the inspections to the public).
- We conduct regular review of facilities and mineral waste-related projects by a group of internal practitioners.
- We organize an external expert group for design, operation, monitoring and maintenance inspection of critical mineral waste management facilities and major related projects.

[Guidelines]

For proper management of mineral waste, Korea Zinc will develop and manage the following detailed guidelines according to the standards set by GISTM.

- Guidelines for Invasion, flooding and emergency response plan
- Guidelines for critical care reporting of tailing storage facilities
- Guidelines for tailing management governance
- Guidelines for risk assessment of tailing storage facilities
- Criteria and guidelines for water management
- Criteria and guidelines for closure and withdrawal Criteria and guidelines
- Education and training for executives and key stakeholders in relation to mineral waste
- Guidelines for systematic third-party verification

Korea Zinc will internalize mineral waste management policy to achieve our goal of mineral waste management, faithfully carry out commitments, and check and disclose the achievement results.