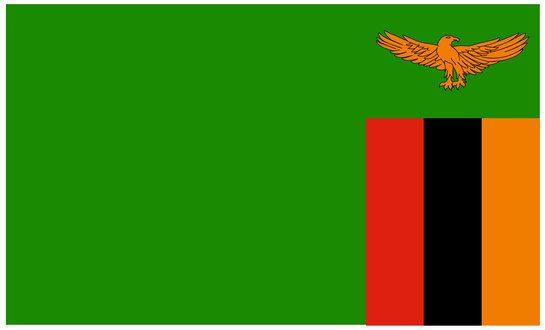
ZAMBIA



TOOLKIT FOR WASTE ROCK DUMP INSPECTION

Mine Safety Department (MSD)

Sepiso Mwambo

Yotam Khunga

INTERNATIONAL TRAINING PROGRAMME 308

Mine Water & Mine Waste Management

Sweden Sverige

SGU Sveriges geologiska undersökning Geological Survey of Sweden

Sida

NATURVÅRDSVERKET SWEDISH ENVIRONMENTAL PROTECTION AGENCY

LULEÅ UNIVERSITY OF TECHNOLOGY

THE CHANGE PROJECT

There is a need to better understand the current and future risks, impacts and mitigation measures associated with mine waste rock dumps and mine waste water to the environment before, during and after mining operations. There are currently no local guidelines for mine waste facilities inspection in Zambia. Due to the lack of these guidelines, inspections are dependent on individual competences and experience. This has resulted in failure to actively monitor the proper management of waste rock facilities and in turn acid mine drainage.

The aim with this change project was to develop new guidelines and inspection strategies for effective monitoring and management of acid mine water from these facilities. The developed guidelines will be useful during the approval, the operational and the closure phases of the facilities. Continued improvement to the tools developed will continue.

The document needs to be developed in a manner that supports environmentally sustainable operations so as not to adversely affect the environment and communities. Run off mine water from waste storage facilities tend to mix with surface water bodies, thereby contaminating the ecosystem. Currently there is no consolidated document guiding the mining industry on sustainable mine waste storage.

To achieve the goal the team engaged the industry and other government departments on the planned project. We then reviewed available legislation, submitted reports, internal reports, current practices and finally we did site visits. We also incorporated material learned from the ITP 308 programme with consultation from the previous ITP group 1 work.

SIGNIFICANCE FOR THE PEOPLE AND THE ENVIRONMENT

Environmental effects from waste rock dumps can be substantial if not inspected properly. If executed well, we expect minimal land degradation allowing for reuse of the land in the future for other activities. This would also help minimize contamination of surface and ground water resources.

It is significant to our organization in that as custodians of the mine environment we can monitor any deviation from the planned and suggest remedial measures to ensure sustainable mining. If waste rock dumps are planned and managed properly companies would spend less on clean up exercises that result from environmental contamination. It would also ease the effort during time of rehabilitation or reclamation of the waste rock dumps.

If properly managed, surrounding communities will be protected from contaminants or pollution due to the presence of waste storage facilities.

RESULTS AND ACHIEVEMENTS

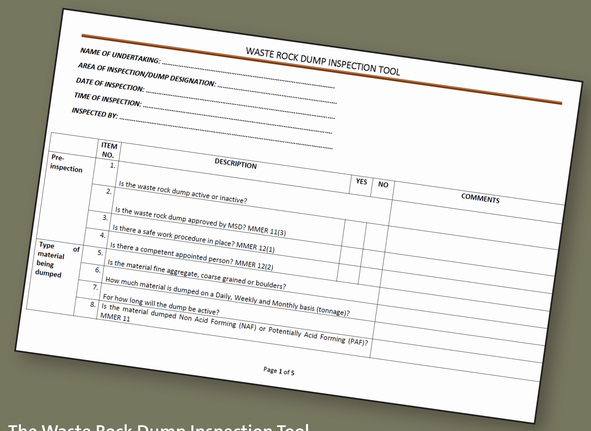
The final product is in the form of a draft checklist. Currently it is only available at the inspectorate. The checklist has been shared with the industry i.e Mopani Copper Mines, Konkola Copper Mines, Maamba Collieries, Kansanshi Mine, Luanshya Mine and ZEMA. The stakeholders include the mining industry, government agencies (MSD, WARMA, RPA, ZEMA) that monitor the environment, traditional leadership, the communities, non-governmental organizations (NGOs), local authorities and the general public.

THE WAY FORWARD

The checklist has not been adopted by the industry but will serve as a guide on what is of interest during waste rock dump inspections. Consultations will continue in order to arrive at a document that will streamline the inspectorates' interest as well as the operatives.

This checklist was designed with consultation limited to copper mines on the Copperbelt province. As such it may not have taken into account dumps due to different mineralization. A broader scope should be considered and more community consultation.

The checklist has been developed and has been shared with the ITP Groups 1 and 3 as we wish to include it in the national guidelines on Mine Waste and water Management.



WASTE ROCK DUMP INSPECTION TOOL

NAME OF UNDERTAKING: .....

AREA OF INSPECTION/DUMP DESIGNATION: .....

DATE OF INSPECTION: .....

TIME OF INSPECTION: .....

INSPECTED BY: .....

	ITEM NO.	DESCRIPTION	YES	NO	COMMENTS
Pre-inspection	1.	Is the waste rock dump active or inactive?			
	2.	Is the waste rock dump approved by MSD? MMER 11(3)			
	3.	Is there a safe work procedure in place? MMER 12(1)			
	4.	Is there a competent appointed person? MMER 12(2)			
	5.	Is the material fine aggregate, coarse grained or boulders?			
	6.	How much material is dumped on a Daily, Weekly and Monthly basis (tonnage)?			
	7.	For how long will the dump be active?			
Type of material being dumped	8.	Is the material dumped Non Acid Forming (NAF) or Potentially Acid Forming (PAF)? MMER 11			

Page 1 of 5

The Waste Rock Dump Inspection Tool.