REGULATIONS REGARDING THE PLANNING AND MANAGEMENT OF RESIDUE STOCKPILES AND RESIDUE DEPOSITS

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Objective

• Present the legal framework for MRDS management
• Provide overview of the Regulations regarding the planning and management of residue stockpiles and residue deposits
• Discuss implications for a risk based approach
The purpose of these Regulations is to regulate the planning and management of residue stockpiles and residue deposits from a prospecting, mining, exploration or production operation.
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Share many similarities with Reg 73 of MPRDA Regulations

What gives them effect

National Environmental Management: Waste Amendment Act (Act 26 of 2014)

- Schedule 3: Defined Waste
  - CATEGORY A: Hazardous Waste

"hazardous waste" means any waste that contains organic or inorganic elements or compounds that may, owing to the inherent physical, chemical or toxicological characteristics of that waste, have a detrimental impact on health and the environment and includes hazardous substances, materials or objects within business waste, residue deposits and residue stockpiles as outlined below:
“residue deposits” means any residue stockpile remaining at the termination, cancellation or expiry of a prospecting right, mining right, mining permit, exploration right or production right.

“residue stockpile” means any debris, discard, tailings, slimes, screening, slurry, waste rock, foundry sand, mineral processing plant waste, ash or any other product derived from or incidental to a mining operation and which is stockpiled, stored or accumulated within the mining area for potential re-use, or which is disposed of, by the holder of a mining right, mining permit or, production right or an old order right, including historic mines and dumps created before the implementation of this Act.
August 2013

- R. 634 Waste classification and management regulations
- R. 635 National norms & standards for the assessment of waste for landfill disposal
- R. 636 National norms & standards for disposal of waste to landfill
OVERVIEW

- R1: Definitions
- R2: Purpose
- R3: Assessment of impact and analyses of risk
- R4: Characterisation
- R5: Classification
- R6: Site selection
- R7: Design

- R8: Impact management
- R9: Duties of holder
- R10: Monitoring and reporting
- R11: Dust control and management
- R12: Decommissioning and closure
- R13: Transitional arrangements
- R14: Offences and penalties
The purpose of these Regulations is to regulate the planning and management of residue stockpiles and residue deposits from a prospecting, mining, exploration or production operation

- ID and assessment of impacts must be undertaken in terms of NEMA
- Management in accordance with NEMA authorisation, EMP and Waste Management Licence
- Risk analyses used to determine mitigation and management measures
- Pollution control barrier system shall be defined by the – Norms and Standards.
Reg 4

Characterisation

- Requires characterisation to identify any potential risks to health or safety or environmental impacts based on chemical and physical characteristics
Reg 5
Classification

- Risk analyses by competent person to classify the facility based on:
  - Physical and chemical characteristics
  - Morphology of the facility
  - Importance & vulnerability of the environment
  - Spatial extent, duration and intensity of potential impacts
  - Pollution control barrier system compliant with N&S for disposal to landfill
Norms and Standards

• Requirement to assess waste to determine Type which informs Class of barrier system
• Type dependent on Total and Leachable concentrations
• Thresholds based on protection of water – drinking water

• Barrier system increases in complexity based on static chemical characteristics of the waste
(a) Class A Landfill:

- Waste body
- Geotextile filter
- 200 mm Stone leachate collection system
- 150 mm Protection layer of silty sand or a geotextile of equivalent performance
- 2 mm HDPE geomembrane
- 600 mm Compacted clay liner (in 4 x 150 mm layers)
- Geotextile filter layer
- 150 mm Leakage detection system of granular material or geosynthetic equivalent
- 100 mm Protection layer of silty sand or a geotextile of equivalent performance
- 1,5 mm HDPE geomembrane
- 200 mm Compacted clay liner
- 150 mm Base preparation layer
- In situ soil

(b) Class B Landfill:

- Waste body
- Geotextile
- 150 mm Stone leachate collection system
- 100 mm Protection layer of silty sand or a Geotextile of equivalent performance
- 1,5 mm HDPE Geomembrane
- 600 mm Compacted clay liner (in 4 x 150 mm layers)
- Under drainage and monitoring system and 150 mm Base preparation layer
- In situ soil
(c) **Class C Landfill:**

- Waste body
- 300 mm thick finger drain of geotextile covered aggregate
- 100 mm Protection layer of silty sand or a geotextile of equivalent performance
- 1.5 mm thick HDPE geomembrane
- 300 mm clay liner (of 2 X 150 mm thick layers)
- Under drainage and monitoring system in base preparation layer
- In situ soil

(d) **Class D Landfill:**

- Waste body
- 150mm Base preparation layer
- In situ soil
Reg 6

Site selection criteria

• Qualitative assessment required

• Feasibility on highest ranking site –
  • Health and safety classification
  • Environmental classification
  • Geotechnical investigation
  • Hydrological investigation

• Specifies requirements for geotechnical and hydrological investigation
Reg 7

Design

• Undertaken by a Pr.Eng

• Must take full life cycle into account and consider
  • Characteristics of residue (Reg 4)
  • Characteristics of environment (Reg 5)
  • Physical constraints of facility

• Consider water management and seepage controls

Reg 8

Impact management

• Focus on managing impact on water through the life cycle
Reg 9

Duties

• Operate appropriately
• Design followed implicitly
• Implement measures to
  • Monitor
  • Secure
  • Preventative/remedial measures for pollution
  • Control dust
  • Develop rehabilitation measures
• Undertake routine maintenance and repair
Reg 10
Monitoring and reporting
• Implement measures to identify whether impacts are arising
• Program needs to be site specific and consider geotechnical and environmental risks

Reg 11
Dust management and control
• Dust management in terms of Mine Health and Safety Act and NEM:Air Quality Act

Reg 12
Decommissioning and closure
• In terms of
  • Environmental authorisation
  • Environmental management plan
Reg 14
Offences and penalties

- Imprisonment < 15 years
- An appropriate fine
- Both fine and imprisonment
So what does this mean

Large overlap with requirements of Reg 73 of MPRDA Regulations

- Mine residues are now considered hazardous – reputational risks
- Registered engineers must now design facilities
- Now require a Waste Management Licence for MRDS through EIA process
- Require barrier system based on N&S assessment and N&S disposal to landfill
Proposed amendments to Regulations

“allow for the pollution control barrier system, required for residue stockpiles and residue deposits, to be determined on a case by case basis, based on a risk analysis conducted by a competent person” – Risk assessment based on Reg 4 & Reg 5

“pollution control barrier system compliant with the commensurate norms and standards for disposal of waste to landfill determined as a result of the risk analysis…”

WML only required if Activity listed under Section 19 of NEMWA – otherwise authorisation under NEMA will be valid

But what about Department of Water and Sanitation

- Section 19 of National Water Act
- Regulation 704

Both require pollution prevention – N&S utilised by DWS during Water Use Licence Application process
• Acknowledges the need for a risk based approach
  – Alternative barrier system meets objective of preventing pollution or
  – is the equivalent of the prescribed barrier system
Conclusion

• Similarity and yet differences from Reg 73 of MPRDA

• Onerous barrier system requirements

• Opportunity to use Risk Based Approach to demonstrate alternate barrier but performance of barrier should be the same as N&S
THANK YOU

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