 <p>ASSMANG MANGANESE BLACK ROCK MINE OPERATIONS</p>	ASSMANG (PTY) LIMITED	Revision No.: 6.0
	Appendix 7: Spill Management and Specifications for Bund Walls	Next Revision Date: 2017/11/12
	Document No: PRO-SHE-E-Ge-G-1520	Effective Date: 2015/12/12

Appendix 7: Spill Management and Specifications for Bund Walls


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1. Purpose

The purpose of this procedure is to:


- Ensure that spills are handled in an appropriate manner in order to minimise the environmental impact and rectify the damage done to the environment.
- Ensure that all bund walls are constructed to specifications in order to prevent pollution of soil and water resources, as prescribed in this procedure.

2. Scope

This procedure is applicable to all employees doing work for, and on behalf of, Assmang Limited Black Rock Mine Operations.

3. References

- 3.1. SHE Incident/Accident Reporting System
- 3.2. Black Rock Mine Operations' Occupational Health, Safety & Environmental Policy
- 3.3. Hazardous Substances Act, 1973 (Act No. 36 of 1973).
- 3.4. Hazardous Chemical Substances Regulations, 1995
- 3.5. National Water Act, 1998 (Act No. 36 of 1998)
- 3.6. PROCEDURE: Management of Hazardous Chemical Substances Procedure – PRO-SHE-E-Ge-G-1232
- 3.7. PROCEDURE: Incident Investigation Non-conforming Corrective-Preventive Action – SYS-SHE-S-Ge-G-56

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3.8. PROCEDURE: Waste Management Procedure - PRO-SHE-E-Ge-G-1233

4. Abbreviations & Definitions

DEFINITIONS

Environment: the surroundings in which the mine operates, including air, water, land, natural resources, flora, fauna, humans and their interrelation.

Environmental aspects: components of the mine's activities or products or services that can interact with the environment.

Environmental impact: any change to the environment, whether adverse or beneficial, wholly or partially resulting from the mines environmental aspects.

Environmental Management System (EMS): the part of the overall management system that includes the organisation structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing, and maintaining the environmental policy.

Hydrocarbons: Organic compound (such as benzene, methane, paraffin) made of two elements carbon and hydrogen and found in coal, crude oil, natural gas, and plant life. Hydrocarbons are used as fuels, solvents, and as raw materials for numerous products such as dyes, pesticides, and plastics; petroleum is a mixture of several hydrocarbons.


Hazardous Substances: solids, liquids, or gases that can harm people, other living organisms, property, or the environment. They include materials that are radioactive, flammable, explosive, corrosive, oxidizing, asphyxiating, bio-hazardous, toxic, pathogenic, or allergenic. Also included are physical conditions such as compressed gases and liquids or hot materials, including all goods containing such materials or chemicals, or may have other characteristics that render them hazardous in specific circumstances.

5. Responsibilities

- It is the responsibility of all employees working at Black Rock Mine Operations to handle spills that may cause environmental impacts in accordance with this procedure and report via the prescribed incidents/non-conformance form or Electronic Management System.
- It is the responsibility of the polluter and the Supervisor to ensure that remedial steps are taken to rectify the damage caused to the environment in their area of responsibility and to report back on the Electronic Management System.
- The supervisors responsible in that area must in conjunction with the Environmental Section formulate sustainable solutions to prevent re-occurrences of such incidents.
- It is the responsibility of the Environmental Section to evaluate the success of the remedial action taken on significant spills and to record the results on the Electronic Management System.

6. General

6.1. This procedure applies to all areas at Black Rock Mine Operations which are considered to have been disturbed by the mining activities.

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7. Description of Procedure


7.1. Spillages

- 7.1.1. All hydrocarbons and hazardous chemicals spillages must be reported to the Supervisor of that section and where the spillage is more than ten litres, it must be reported to the Environmental Section as well.
- 7.1.2. Should a spill occur, the person responsible/ discovering the spill should take the necessary step to contain the spill in order to minimise the area that will be affected.
- 7.1.3. Once contained, the spill should be cleaned up in a manner appropriate to the spill, if uncertain refer to the Safety Data Sheet for the fluid spilled.
- 7.1.4. Spills on an impermeable surface can be mopped up with a suitable absorbent material e.g. organic fibre; reusable absorbent pads or any other suitable absorbent material. If a reusable absorbent material is used this should be stored in a drum kept for this purpose until its life is exhausted. Once the absorbent material has reached the end of its life it should be disposed of in the hazardous waste bins and not discarded with general waste. It is important that the used absorbent is placed in a box/packet/container before placed into the hazardous waste drum.
- 7.1.5. Should an oil, fuel or lubricant spill occur on a permeable surface (i.e. ground/soil) the area is to be remediated on site by the person responsible for the spill. If it is not practical to remediate the site, as much of the contaminated soil as possible must be lifted and removed to the Salvage Yard hazardous waste temporary storage for disposal. The site of the spill should be treated with suitable bioremediation product in accordance with the manufacturer's instructions. The principle of "polluter pays" will be adopted with regard to the clean-up and disposal costs incurred.
- 7.1.6. Should any other spill occur the spill must be cleaned up and the polluted waste and/or soil deposited in a hazardous waste bin or suitable container clearly labelled with contents. This container must be sent to the hazardous waste transfer site for correct disposal according to the substance spilled.
- 7.1.7. Oil spills which occur on water may be contained with fibre booms and mopped up with a suitable product (e.g. absorbent cushions) that float on top of the water and absorbs the oil. The used fibre booms and pillows should be disposed of at demarcated contamination site.
- 7.1.8. If harmful substances, other than oil, fuel or lubricant, are spilled into water the contaminated water must be contained and pumped to where it can either be treated and/or disposed of correctly.
- 7.1.9. Spill kits are provided in the various sections of the mine to assist with the cleaning of spillages.
- 7.1.10. The re-filling and maintenance of the spill kits is the responsibility of the Supervisor.

7.2. Specifications for Bund Walls (Excluding Bund Walls for Transformers)

All Bund walls built after January 2012 will have the following specifications:

- The bund walls must be able to contain at least the whole volume of the **largest** container and an additional 10% of **that** largest container in the bunded area.
- The total capacity of the bund wall must be displayed on the bund wall or on the fence if the bunded area is fenced.

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- It must be constructed from cast concrete with pinning steel or from bricks (plastered inside) or made from an impermeable material as approved by the responsible Engineer.
- It must have a draining valve or a sump at the lowest point of the bunded area; the draining valve must be closed and locked at all times.
- An emergency container and pump must be readily available at a commonly-known location.
- Where practical/ necessary, the bund wall must have protective barriers to prevent vehicles from colliding with the walls and damaging it.
- No pipes or cables should run through the bund walls, except drainage pipes. As far as possible, all flanges, pipe fittings, valves and pumps etc. of the tank and the dispensing system should be situated well within the bund wall.
- Storage areas that must be accessible with forklifts must be constructed in such a way that a ramp will allow access and still contain spillage.
- Only galvanized steel pipes may be used for the drain valve.

7.2.1. Signage on Bund Walls

Responsible Person:

- Calculate the volume of the bund wall.
- Prepare a conspicuous display mechanism i.e. a metal/ plastic plate, laminated sheet or painted on the bund wall
- Attach the display mechanism in such a manner that the integrity of the bund wall will not be jeopardised.
- Ensure that only the volume that the bund wall is designed for is kept in the bund wall.

7.2.2. Cleaning of Bunded Areas


Responsible Persons:

- Pump or drain contaminated water from bunded areas into a container.
- Clean the contaminated area with the appropriated absorbent in the case of spillage.
- Dispose contaminated water at a wash bay where an oil separator is functional.
- Salvage and recycle any hydrocarbon spilled inside the bund wall as far as possible.
- Dispose any absorbent material or polluted soil as hazardous waste.
- Empty drip trays regularly and store them inside the bunded area.
- Ensure that no chemical or hydrocarbon is present in the water before releasing rain water from the bund wall.
- Ensure that the valves on the bund walls are closed and locked at all times.

7.2.3. Inspection of Bund Walls by Supervisors and Environmental Officers

- Visually check for cracks, damages and pollution of adjacent areas during regular inspection of bund walls.
- Verify if the volume stored is according to the design specification.
- Drain valves must be checked for correct functioning.

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- All newly constructed bund walls are to be inspected and signed off in terms of the integrity and capacity of the installation by the responsible Engineer.

8. Records

No	Record	Ref.	Resp. Person	Storage	Retention Period	Disposition
1	Inspection Records		Environmental Specialist	Isometrix	Life of Mine	
2						
3						

9. Appendix

None