MAKHANDA MINING (PTY) LTD

REMAINING EXTENT OF THE FARM BRAKKEFONTEIN NO 243

MAKHANDA, EASTERN CAPE PROVINCE

ENVIRONMENTAL PERFORMANCE ASSESSMENT

DMRE REFERENCE NUMBER:	**EC 30/5/1/2/2/0056 MR**
AUDIT PERIOD:	**AUGUST 2022 – JULY 2024**

PREPARED FOR:

Makhanda Mining (Pty) Ltd

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PREPARED BY:

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1. PROJECT SPECIFIC DETAIL

ITEM	MINING RIGHT HOLDER
Company Name	Makhanda Mining (Pty) Ltd
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ITEM	**CONSULTANT DETAIL**
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ITEM	**LOCATION AND AREA INFORMATION**
Site Name	Makana Brick – Beaconsfield Farm
Property Description	Remaining Extent of the farm Brakkefontein 243
Location	Makana Brick is located ±5 km to the northeast of Makhanda along Mayfield Cemetery Road on Beaconsfield farm.
Size of Mining Area	644.9686 ha

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2. ENVIRONMENTAL AUDIT REPORT

PROJECT DETAIL

Right Number:	119/2008 (EC 30/5/1/2/2/0056 MR)	**Date of commencement:**	2008
Site name:	Makana Brick – Beaconsfield Farm	**Inspection date:**	31 July 2024
Right Holder:	Makhanda Mining (Pty) Ltd	**Other authorisations:**	• Air Emissions Licence: EC/CAR/MAK/021/2016 • Water Use Licence: 28024307 • Zoning Consent: 52085
Report number:	04		

DETAIL OF AUDITOR

***(APPENDIX 7 SUB-REGULATION 3(A) & (B))*:**

ECO:	Christine Fouché
Expertise:	Ms Fouche has a Diploma in Nature Conservation and a BSc in Botany and Zoology with nineteen years' experience in doing environmental impact assessments and compliance monitoring in South Africa.
Declaration of independence:	I, Christine Fouche, in my capacity as environmental control officer declare that– • I act as independent environmental control officer in this compliance audit; • I will perform the work relating to the audit in an objective manner, even if the results and findings are not favourable to the holder of the authorisation; • I have expertise in conducting environmental compliance audits, including knowledge of the Act and regulations that have relevance to the activity; • I will adhere to and comply with all responsibilities as indicated in the National Environmental Management Act and Environmental Impact Assessment Regulations. • I do not have and will not have any vested interest in the activity other than remuneration for work performed in terms of the Environmental Impact Assessment Regulations, 2014 (as amended).  Christine Fouche Date: 19 August 2024

SCOPE & PURPOSE OF ENVIRONMENTAL AUDIT

***(APPENDIX 7 SUB-REGULATION 3(C))*:**

This environmental audit report was compiled in terms of the requirements of the NEMA EIA Regulations, 2014 (as amended).

OBJECTIVE:

The objective of the environmental audit report (EAR) is to evaluate compliance of the operational activities with the Environmental Management Programme Report (EMPR) as approved by the Department of Mineral Resources and Energy.

INSPECTED AREAS:

The inspection included an assessment of the following areas:

- Clamp yard;
- Clay quarry;
- Factory (Plant 1 & Plant 2);
- Hacklines;
- Offices and storage areas;
- Scrap Yard;
- Stockpile areas; and
- Workshop and wash bay area.

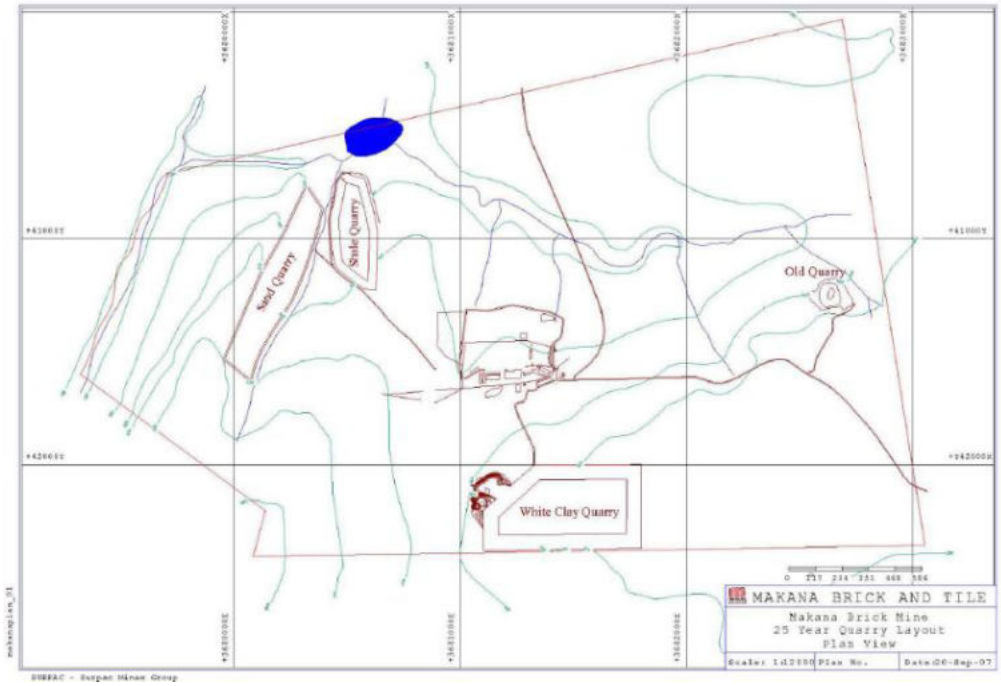
To establish the environmental compliance assessment of the operation, the mining site and associated infrastructure, was inspected on foot by the Environmental Control Officer, Christine Fouché, from Greenmined Environmental accompanied by site management.

ASSUMPTIONS, UNCERTAINTIES OR GAPS IN KNOWLEDGE

(APPENDIX 7 SUB-REGULATION 3(F)):

The assumptions made in this document, stem from specific information gathered during the site audit (contained within the fenced footprint) and background information supplied by the mining right holder. The sand, shale and old kaolin quarry were not visited during the inspection as the no activities occurred in these areas. As the brick factory forms part of the approved mining right footprint and EMPR, the operational areas were included as part of this environmental performance assessment.

LOCATION

Site location:	Makana Brick is located ±5 km to the northeast of Makhanda along Mayfield Cemetery Road on Beaconsfield farm.	
Site map:		
Site coordinates:	A -33.238603°	26.553268°
	B -33.242792°	26.563274°
	C -33.269224°	26.570285°
	D -33.272461°	26.545368°
	E -33.245687°	26.544979°
	F -33.246190°	26.547142°
	G -33.242746°	26.550538°

PROJECT DESCRIPTION

Makhanda Mining (Pty) Ltd holds a mining right over 644 ha of the Remaining Extent of the farm Brakkefontein 243 in the Makhanda area. The mining footprint contains four quarries namely the clay-, sand- and shale quarries, as well as the old kaolin quarry that has not been mined since Makana Brick purchased the farm in 1994.

The right holder extracts residual kaolinite (hereafter referred to as clay) from the clay quarry using an opencast method. An excavator digs and loads the clay onto dumper trucks that deliver it to the factory area where it is stockpiled until used in the manufacturing of clay bricks. The clay quarry is currently mined along the eastern- and southern banks.

The material from the sand and shale quarries are only used within the farm boundaries (non-commercial purposes). The sand is packed between the layers of bricks to prevent it sticking together, while the shale is used as road building material (for the internal farm roads).

SITE CONDITIONS

Sunny clear day with dry soil.

REPORTABLE ENVIRONMENTAL INCIDENTS

Incident date:	Makana Brick keeps an incident register on site. No environmental related incidents occurred during the audit period that had to be reported to DMRE/DEDEA.
Incident no:	
Incident:	
How addressed:	
When addressed:	

ADOPTED METHODOLOGY

***(APPENDIX 7 SUB-REGULATION 3(D)*:**

COMPLIANCE SCORE	DESCRIPTION
1	Task not achieved
2	Task 20% achieved
3	Task 50% achieved
4	Task 80% achieved
5	Task 100% achieved in accordance with the EMP

NON-COMPLIANCE SCORE	DESCRIPTION
1	**LOW** – Mitigation not needed / mitigation measures to be maintained
2	**MEDIUM** – Mitigation should be considered
3	**HIGH** – Mitigation compulsory

INSPECTION ASPECTS

DESCRIPTION	COMPLIANCE SCORE	NON-COMPLIANCE SCORE	STATUS	COMMENTS
LEGISLATION COMPLIANCE:				
National Environmental Management Act, 1998 (Act No 107 of 1998) and the Environmental Impact Assessment Regulations, 2014 (as amended 2017)	5	-	Compliant	The competent authority deems the approved EMPR and MR of Makana Brick compatible with an Environmental Authorisation in terms of NEMA, 1998.
Copy of the EA and EMPR available on site	N/A	-	-	-
Mineral and Petroleum Resources Development Act, 2002 (Act No 28 of 2002)	5	-	Compliant	-
Mining right available on site	5	-	Compliant	The mining right is valid until 04 March 2038.
Mine plan annually reviewed	5	-	Compliant	The mine plan is annually reviewed in July. The last plan is dated July 2023.
National Environmental Management: Air Quality Act, 2004 (Act No 39 of 2004)	-	-	-	Makana Brick holds an air emissions licence. *Please note that the compliance of the holder with the AEL conditions did not fall within the ambit of this audit.*
National Environmental Management: Waste Act, 2008 (Act No 59 of 2008)	4	3	To be addressed	• Contaminated soil and other hydrocarbon contaminated materials are burned at the factory in accordance with the AEL and Waste Licence. • Scrap metal is sold to an accredited contractor. • Sewerage is contained in a septic tank. • The handling of contaminated water must improve. • The mine removes general waste to the municipal landfill. Proof of this must be filed on site – see General Report.
National Water Act, 1998 (Act 36 of 1998)	4	3	To be addressed	• The mine has a water authorisation that allows the taking of water from a watercourse in terms of Section 21(a) as well as the storing of water in terms of Section 21(b) of the NWA, 1998. • Water samples were collected in July 2024 from the dam, the quarry sump, the tap (drinking water), and the stream near

DESCRIPTION	COMPLIANCE SCORE	NON-COMPLIANCE SCORE	STATUS	COMMENTS
				the municipal sewerage works that were tested for Coliform and *E. coli*. • It is proposed that the test parameters of water samples (collected in the mining area) be expanded as discussed in the general report.
Copy of Water Use Authorisation available on site.	5	-	Compliant	A copy of the water certificate is available.
National Environmental Management: Biodiversity Act, 2004 (Act No 10 of 2004) (NEM:BA)	4	3	To be addressed	The listed problem plants (general report) need to be eradicated.
Hazardous Substances Act, 1973 (Act 15 of 1973)	4	3	To be addressed	• The site has copies of the fire chief's approval of the hazardous material storage tanks. • However, all hydrocarbons and/or other chemicals must have secondary containment. See General Report.
ASPECTS OF THE AFFECTED ENVIRONMENT				
PROCEDURES AND PLANS (EMPR PG 30, 33, 37, 44, 45):				
Emergency Preparedness Plan on site	5	-	Compliant	-
Incident register up to date	5	-	Compliant	The incident register forms part of the complaints register and is available on site.
Code of Practice (CoP) – Spill Management	5	-	Compliant	A Spill Management CoP was developed for the site.
Inspection program to confirm mechanical integrity & operability of containment infrastructure, emergency shutdown systems and associated equipment.	5	-	Compliant	-
Standard operating procedure (SOP) for filling storage tanks and other containers/equipment.	1	3	To be addressed	At the time of the inspection this CoP was still being drafted (requirements listed in EMPR pg 30).
Method statements (MS) submitted for construction activities.	N/A	-	-	No new MS were needed during the audit period.
CoP – Hazardous Substance Management	3	3	To be addressed	A CoP on hazardous substance management was still in process (EMPR pg 37).

DESCRIPTION	COMPLIANCE SCORE	NON-COMPLIANCE SCORE	STATUS	COMMENTS
CoP – Waste Management	4	3	To be addressed	The site has a waste management policy. As discussed, the waste management policy must be updated to elaborate on the manner sewerage is handled on site.
CoP – Airborne Quality Management	5	-	Compliant	The CoP is available on site.
CoP – Noise Control	5	-	Compliant	-
TOPSOIL & OVERBURDEN MANAGEMENT (EMPR PG 34, 35):				
Topsoil stripping done	5	-	Compliant	When new areas are opened the topsoil is stripped.
Topsoil storage (heaps not exceeding 2.5 m)	5	-	Compliant	The topsoil is stockpiled and protected on site.
Overburden stripped	5	-	Compliant	-
Overburden storage (heaps not exceeding 2.5 m)	N/A	-	-	The reasoning for this condition is unclear, as the stockpiles do not cause a visual disturbance to any I&AP/stakeholder.
Storage berms vegetated	5	-	Compliant	The berms on site vegetate through natural succession. Site management also planted some of the berms with mesembs.
Topsoil returned to rehabilitated area	N/A	-	-	The mine identified a few areas that will be rehabilitated during the next audit period. No topsoil was spread during the current audit period.
Reinstated slopes maintained at 15º	4	1	-	The slope of the rehabilitated area along the western side of the clay quarry is steeper than 15º but will not be altered as the berm already settled and a vegetation cover established. Shaping of the berm may be re-considered during final closure of the site.
VEGETATION (EMPR PG 36):				
Cussionia (cabbage tree) sheltered from mining activities	5	-	Compliant	-
Indigenous groundcovers used to re-vegetate reinstated areas.	N/A	-	-	No rehabilitated areas were vegetated during the audit period.
Cynodon used instead of kikuyu	5	-	Compliant	-
Runoff furrows vegetated	5	-	Compliant	-

DESCRIPTION	COMPLIANCE SCORE	NON-COMPLIANCE SCORE	STATUS	COMMENTS
FAUNA:				
All animals, birds and reptiles protected on site	5	-	Compliant	-
Operational pits providing an escape route for trapped animals	5	-	Compliant	-
Operational areas daily inspected for signs of trapped animals	5	-	Compliant	-
AIR QUALITY (EMPR PG 44):				
Denuded areas limited to operational areas	5	-	Compliant	-
Water sprayers and sprinklers used to wet stockpiles	5	-	Compliant	Dust suppression was in progress at the time of the inspection.
Water tankers used to moisten roads	5	-	Compliant	
Windbreaks in place west of the storage depot/factory area	5	-	Compliant	Site management continuously plant new trees to increase the wind breaks at the site.
Brick rubble used on road/working surfaces to reduce dust	5	-	Compliant	Where needed.
Clay milling area enclosed	N/A	-	-	The use of Plant 1 (clay milling area) has ceased and will no longer be used for milling purposes.
Dust masks available to workers	5	-	Compliant	-
Visible dust level acceptable	5	-	Compliant	At the time of the inspection the visible dust level was acceptable.
Monthly dust monitoring implemented and monitoring equipment in place.	5	-	Compliant	NOHS Consultants are responsible for the dust monitoring of the site.
Speed restrictions implemented	5	-	Compliant	-
Vehicles transporting kaolin, spoil, topsoil or other dust material on public roads covered	N/A	-	-	Trucks transporting raw material that could generate dust does not leave the site.
Air quality monitoring (PM_{10})	5	-	Compliant	The results are available on site.
Sulphur Dioxide Analysis done	5	-	Compliant	
NOISE CONTROL (EMPR PG 45):				
Machinery and equipment in good working order (silencers, slipping fanbelts, bearings)	5	-	Compliant	At the time of the inspection this appeared to be true.

DESCRIPTION	COMPLIANCE SCORE	NON-COMPLIANCE SCORE	STATUS	COMMENTS
Equipment turned off when not in use	5	-	Compliant	-
Written notice given to surrounding residents when excessive noise is expected	N/A	-	-	Not applicable during the audit period.
No amplified music allowed	5	-	Compliant	-
Hearing protection available to employees	5	-	Compliant	-
Noise monitoring done	5	-	Compliant	The results are available on site.
HERITAGE MANAGEMENT (EMPR PG 47):				
Archaeological, cultural and/or heritage remnants protected.	N/A	-	-	No archaeological, cultural or heritage remnants were discovered or reported on during the audit period.
WATER MANAGEMENT (EMPR PG 42):				
Stormwater diversion channels adequate and contaminated stormwater contained	4	3	To be addressed	Site management formalised some of the stormwater channels on site. However, there is still a need to separate dirty and clean water (see General Report).
Water quality analyses done of water in the settling ponds.	4	3	To be addressed	Although water samples were collected from the dam, the water in the settling ponds were not tested. This needs to be added to the next sampling cycle and the test parameters need to be expanded to include a test for hydrocarbon traces.
Does water results conform to SAWQG standards	4	1	Mitigation to be considered	Refer to the General Report.
Silt trap and bio-filter settling ponds in place and operational.	5	-	Compliant	The silt trap and bio-filters were in place at the time of the inspection. Increased water quality monitoring will show whether the filters are operational.
Areas with erosion reinstated.	4	3	To be addressed	The sheet erosion noted along the northern stormwater channel needs to be reinstated.
Vehicle repairs contained to workshop, or drip trays used during emergency break downs.	2	3	To be addressed	The surface of the vehicle service area must be lined to prevent soil contamination, and any spillages/contaminated water must

DESCRIPTION	COMPLIANCE SCORE	NON-COMPLIANCE SCORE	STATUS	COMMENTS
				drain into an operational oil sump. Repairs must be contained to the service area. The use of drip trays improved since the previous audit.
VISUAL EXPOSURE:				
Is the contractor implementing good visual and housekeeping standards.	4	3	To be improved	Although the overall appearance of the site is clean, the management of the workshop-/wash bay area must be improved.
MANAGEMENT OF FUEL AND HAZARDOUS PRODUCTS (EMPR PG 30, 37-40):				
Hazardous material stored within a bunded area (110% capacity)	3	3	To be addressed	• As discussed, all chemicals stored on site must be kept within bunded areas. • All used-oil tanks/containers must be kept in a formal bund wall with a lined surface, and no containers holding chemicals/hydrocarbons may be kept without secondary containment. • The bund wall of the diesel tank must be sealed. • The hydrocarbons must be drained from the equipment stored at the scrap yard to prevent spills.
Bund wall of diesel tanks impermeable	3	3	To be addressed	
Refuelling nozzles resting a sleeve to prevent leaks	5	-	Compliant	-
Fuel stations equipped with fire extinguishers	5	-	Compliant	-
Spills inside bund walls treated as hazardous waste	5	-	Compliant	-
Management of fuel and oil spills.	4	3	Management to be improved	Site management confirmed that any contaminated soil generated because of fuel/oil spills are collected and burned at the kiln with the other hazardous waste of the site. As discussed on site, the wash bay needs to drain into a sealed oil sump. No wash water from the dirty areas (such as the workshop) may be allowed to flow into the stormwater ponds.
List of types & quantities of hazardous materials available.	5	-	Compliant	The MSDS's of the chemicals used on site are available at the workshop and oil store.
Locations of hazardous materials and activities on an emergency plan site map.	1	3	To be addressed	To be compiled.

DESCRIPTION	COMPLIANCE SCORE	NON-COMPLIANCE SCORE	STATUS	COMMENTS
Chemical products securely stored (access controlled).	5	-	Compliant	-
Fire chief approval for storage of hazardous substances.	5	-	Compliant	-
Material safety data sheets (MSD's) available for each chemical product	5	-	Compliant	-
Controlled loading/unloading (areas where hazardous material is handled) with impervious paving/PVC sheeting (EMPR pg 40).	3	3	To be addressed	As the vehicle service area is in front of the workshop where the chemicals are stored, it is proposed that the lining of the vehicle service area (mentioned earlier) will also address this condition.
Signage in vicinity of flammable liquid storage areas	5	-	Compliant	-
All containers with chemicals in must be clearly marked.	5	-	Compliant	-
Sealed drip trays used and management to standard	5	-	Compliant	-
Mining equipment mechanically sound without visible oil leaks	5	-	Compliant	At the time of the inspection this appeared to be true.
Sump and oil separator operational	1	3	To be addressed	At the time of the inspection the wash bay did not drain into a sump / oil separator. This must be rectified (see general report).
Complete oil/fuel spill kits available on site	5	-	Compliant	-
FIRE MANAGEMENT (EMPR PG 31 - 32):				
No open fires permitted on site	5	-	Compliant	According to site management fires (cooking/heating) are contained in fire drums.
Increase of fire risk due to burning of waste	N/A	-	-	The site does not burn any waste apart from that which is fed into the kiln under controlled conditions.
Adequate & appropriate fire-fighting equipment	5	-	Compliant	-
No fuel & chemicals stored under trees and vegetation in vicinity of storage areas removed	5	-	Compliant	-
Fuel and gas stored separately	5	-	Compliant	-
Employees trained in firefighting	5	-	Compliant	-
Major fires or explosions reported.	N/A	-	-	-

DESCRIPTION	COMPLIANCE SCORE	NON-COMPLIANCE SCORE	STATUS	COMMENTS
WASTE MANAGEMENT (EMPR PG 41):				
Waste separation implemented (general / hazardous)	5	-	Compliant	The waste of the site is sorted between that which will be burned at the kiln and that which needs to be removed from the site to the landfill site.
Recycling & re-use implemented	5	-	Compliant	-
Waste storage not exceeding 30 days	5	-	Compliant	General waste is weekly removed from site by site management.
Waste collected in sealable containers	5	-	Compliant	The refuse drums were replaced with new wheelie bins that have lids.
Site free of day-to-day litter	4	3	To be addressed	The plastic wrapping must be removed from the stormwater channels.
General waste dumped at a recognised landfill site	5	-	Compliant	The general waste is removed to the municipal landfill by the site. Proof of disposal must be available on site – see General Report.
Hazardous waste removed by a registered waste handling contractor	N/A	-	-	Presently none of the hazardous waste generated on site needs to be disposed off-site. Site management burns the waste at the kiln in accordance with the air emissions licence.
Proof of waste disposal filed for auditing purposes	4	3	To be addressed	It is proposed that a general waste disposal register be maintained to proof that the general waste is removed to the municipal landfill site.
No site toilet, septic tank near a watercourse	5	-	Compliant	-
Ablution facilities operational	5	-	Compliant	The use of the long drops at the clamp yard ceased and all employees now use the ablutions with a flush system that drains into a septic tank.
Spillages not disposed of into the environment, ditches, drains or water courses	3	3	To be addressed	The wash bay needs to drain into an operational oil sump.
No waste stockpile area allowed outside the boundaries of the mining area	5	-	Compliant	-
Proper sanitation facilities available to employees	5	-	Compliant	The sanitation facilities available to the employees improved since the previous audit.

DESCRIPTION	COMPLIANCE SCORE	NON-COMPLIANCE SCORE	STATUS	COMMENTS
MINE AND EQUIPMENT MANAGEMENT:				
Mining area demarcated with visible beacons	5	-	Compliant	The mining area is fenced.
Mining contained to designated mining area	5	-	Compliant	-
Unnecessary surface disturbance avoided	5	-	Compliant	-
VEHICLE AND TRAFFIC MANAGEMENT (EMPR PG 46-47):				
Access roads demarcated with "no entry" signs where applicable	N/A	-	-	The mining area and brick making plant is fenced with lockable gates.
Damage to public roads repaired (if caused by Makana Brick)	N/A	-	-	Makana Brick assists with the maintenance of the public access road to the site.
Abnormal loads scheduled to avoid peak-hours	N/A	-	-	The traffic volume on the access road is low and not affected by vehicles leaving/visiting Makana Brick.
Access road maintained	5	-	Compliant	-
Movement of project related vehicles & machinery restricted to existing roads. No crisscrossing through undisturbed areas.	5	-	Compliant	-
Drains in access road maintained and operational	5	-	Compliant	-
EMPLOYEE AND SAFETY MANAGEMENT (EMPR PG 48, 51):				
Controlled access to the mine	5	-	Compliant	-
Danger tape & signage used around trenches & open pits	5	-	Compliant	Although Makana Brick doesn't make use of danger tape, the operational area has been fenced off and signposted to prevent unauthorised entry. Danger tape can be used when temporary trenches are dug.
No workers residing on the mining area	5	-	Compliant	-
Workers provided with PPE	5	-	Compliant	-
Emergency contact details displayed on site	5	-	Compliant	-
No herbicides used in windy/rainy conditions	5	-	Compliant	-
Employees attended environmental induction training	5	-	Compliant	-
Proof of training available for auditing purposes	5	-	Compliant	-

COMMENTS OR COMPLAINTS RECEIVED FROM I&AP'S

***(APPENDIX 7 SUB-REGULATION 3(G) & (J))*:**

No written environmental related complaints were received during the audit period.

AUDITING OF EA, EMPR AND REPORTING THEREOF

***(REGULATION 34)*:**

Date of previous EAR/EPA:	25 August 2022
Proof of submission to DMRE available:	The EAR/EPA was submitted to the DMRE on 12 September 2022, and proof of submission is available from Greenmined Environmental (Pty) Ltd.
EAR/EPA compiled by independent person with environmental auditing expertise:	The performance assessment was compiled by Greenmined Environmental (Pty) Ltd.
Potential and registered I&AP's notified within 7 days of the submission date, and report available on publicly accessible website.	This report will be made available on the Greenmined Environmental (Pty) Ltd website within 7 days of the submission date.

GENERAL REPORT

Compliance of the Makana Brick operations with the EMPR was reviewed during the site assessment, and the mining area recorded a compliance score of 92% for the audit period.

Expansion of the clay quarry occurred in a southern direction during the audit period. The southern side of the clay pit dropped in level and the most south-eastern corner was expanded. As the pit is still expanding, no progressive rehabilitation is applicable for this audit period.

The old stockpile area (green polygon in following image) between the clay pit and the brick factory was cleaned and levelled. As mentioned earlier mesembs were planted along the berms. The brick plant also ceased the use of Plant 1 (blue polygon in following image), and the building will be cleaned out and repurposed. Site management also noted that the most northern- (where wood was previously stored) and eastern sections (where bricks are stored) within the fences will be rehabilitated and reinstated to lessen the operational areas (yellow polygons below). As discussed, all compacted areas earmarked for rehabilitation must be ripped and landscaped after the materials/product was removed. Seeding of the areas will speed-up the recovery of the vegetation cover and lessen dust generating areas.

Figure 1: Satellite view of the stockpile area that was reinstated (green polygon), Plant 1 that will no longer be used (blue polygon), and the areas earmarked for rehabilitation (yellow polygons).

Waste Management:

As mentioned earlier, the mine removes the general waste to the municipal landfill site. As the landfill site does not provide the mine with proof of safe disposal it is suggested that a general waste register is used to keep track of the waste leaving the site.

The materials/equipment in the scrap yard are being sorted. As discussed, the hydrocarbons must be drained from all equipment in the scrap yard, alternatively the engines/motors etc. must be placed in drip trays to prevent spillages.

The old refuse bins of the site are being replaced with new wheelie bins that have lids. Site management must ensure that the plastic sheeting is daily removed from the operational areas to prevent it blowing/being washed into the stormwater channels.

As mentioned earlier, the long drops at the clamp yard are no longer used on site as all employees now make use of the formal ablutions that drain to a septic tank. The building of the long drops will be decommissioned when the associated area is rehabilitated/reinstated.

The area where building rubble was piled (north of Plant 1) must be cleaned. The general waste must be removed to the landfill site, broken bricks and other building rubble that can be salvaged must be removed and any container/equipment with hydrocarbons in must be removed to a bunded area.

Water Quality Monitoring:

The Right Holder has a water authorisation that allows the taking of water from a watercourse in terms of Section 21(a) as well as the storing of water in terms of Section 21(b) of the NWA, 1998. The water

authorisation allows the taking of 36 000 m³ water per year and the storing of 40 000 m³ water in one dam. The water use is registered for industrial purposes.

The EMPR notes (on page 50) that the dams must be monitored, as well as the areas below the pollution dams to ensure that no pollution/spillage is taking place. The EMPR does not specify a monitoring frequency. Site management contracted Rubic Water Testing Facility at Rhodes University to test the microbial quality of the water from the dam, the quarry sump, the tap (drinking water), and the stream near the municipal sewerage works in July 2024. The results were as follows:

Total Coliform (Standard Limit: <10 CFU/100 mL)

- Dam >5 000
- Quarry Sump 51
- Stream near Sewerage Plant >5 000
- Tap Water 4422

E. coli (Standard Limit: 0 CFU/100 mL)

- Dam 804
- Quarry Sump 0
- Stream near Sewerage Plant >5 000
- Tap Water 201

From the above it is clear that the water quality does not conform to the standard limits for domestic water as determined by SANS 241:2015. However it must be born in mind that the water used at the mine is extracted from the dam that is downstream of the municipal sewerage works (same feeder stream) and that the contamination most likely wash into the dam from where the operational water is extracted. The water is not fit for human consumption and therefore not consumed by employees.

It is proposed that a sample must also be collected (next time) from the settling/pollution dams and that the water samples of especially the quarry sump, and settling ponds are tested for hydrocarbon traces during the next monitoring cycle.

Management of Storm Water:

The storm water management of the factory and workshop areas must still be improved to separate dirty and clean water. Clean water (e.g. rainwater) must be kept clean and be routed to a natural watercourse by a system separate from the dirty water system. Clean water must be prevented from running or spilling into dirty water systems. Further to this, site management must distinguish between dirty water that can be directed to the pollution/settling ponds (e.g. runoff water with a high non-hazardous sediment load for instance the processing area or carbon stockpile) and contaminated water (e.g. wash water from the wash bay and vehicle service areas) that must be directed to an oil separation sump. No water containing hydrocarbons/other non-organic chemicals may be directed to the pollution/settling ponds.

It is proposed that the surface of the vehicle service area be lined to prevent soil contamination, and any spillages/contaminated water must drain into an operational oil sump. Vehicle/equipment repairs must be contained to the service area.

The road passing through the stormwater channel along the northern side of the work area must be redesigned to allow continuous flow of water in the channel without it escaping and causing sheet erosion along the side of the channel.

Storage of Chemicals and Hazardous Substances:

All chemicals and hazardous substances must be stored in a closed facility with an impermeable floor. The storage area must meet the following conditions:

- Construct storage area on a level area with an impermeable floor.
- Access to the materials/substances may only take place with the prior notification of the responsible officer.
- Fuel- or other chemical storage tanks must have an impermeable bund wall and base within which the tanks sits, raised above the floor, on plinths. The bund capacity must be sufficient to contain 110% of the tank's maximum capacity.
- Consider the distance and height of the bund wall relative to that of the tank to ensure that the substance does not spout beyond the confines of the bund.
- Establish a formal inspection routine to check all equipment in the bund area, as well as the bund area itself for malfunctions or leakages. Inspection should be at least monthly, and any accumulated rainwater must be removed, and treated as wastewater.
- All valves and outlets must be checked to ensure that they are intact and closed securely.
- Slope the bund base towards an oil separation sump of sufficient size.
- Contain contaminated water until it can be collected by a registered hazardous waste handling contractor or be disposed of at a registered hazardous waste handling facility.

As mentioned earlier the following site specific matters must be addressed:

- All chemicals stored on site must be kept within bunded areas.
- Any used-oil tanks must be kept in a formal bund wall with a lined surface, and no containers holding chemicals/hydrocarbons may be placed directly on the soil.
- All the bund walls must be sealed.

Since the last inspection, the MSDS's of the chemicals used on site were obtained and are kept in proximity to the chemicals. The EMPR further requires that the location of hazardous materials and activities is indicated on an emergency plan site map.

Weeds and Invader Plants:

Since the previous audit, the Tumbleweed (*Salsola kali*) was removed from most of the berms and work areas. Site management must also focus on the removal of the Thornapple (*Datura ferox*) plants that germinated along the berms and disturbed areas as these plants are also classified as a Category 1b species in terms of the Alien and Invasive Species List, 2016 (as amended). Other invader plants that needs to be removed are the Thorny Prickly Pear (*Opuntia ficus-indica*), and Mexican Poppy (*Argemone mexicana*)

Greening Projects:

Since the previous audit, numerous trees were planted that will act as windbreaks between the buildings and mesembs were established on the berms to lessen denuded areas and control erosion.

DOCUMENT CHECKLIST:

• Mining right	-	Present
• Mine works program	-	Present
• Social and labour plan	-	Present
• Approved EMPR	-	Present
• Mine Plan	-	Present (2023)
• Financial provision	-	Present

• Environmental Audit Report	-	Present
• Water Use Licence	-	Present
• Permit for waste removal	-	Present (Scrap Metal)
• Emergency Preparedness Plan	-	Present
• CoP: Spill Management	-	Present
• CoP: Hazardous Substance Management		To be finalised
• CoP: Waste Management	-	Present
• CoP: Airborne Quality Management	-	Present
• CoP: Noise Control	-	Present
• SoP: for filling tanks and containers	-	To be compiled
• Monitoring results	-	Dust Monitoring (Present) Air Quality Monitoring (Present) Noise Monitoring (Present) Water monitoring (Present – testing to be expanded) Pre-start Checklists (Present)
• Incident & Complaints Register	-	Present
• Environmental Awareness Training	-	Present
• Material Safety Data Sheets	-	Present
• Closure Plan	-	Present as part of the EMPR.

MATTERS TO BE ADDRESSED:

1. Increase the test parameters when the next water samples are collected. Also test a sample from the settling ponds.
2. Remove the invader plant species from the work areas.
3. Prepare the outstanding COP's.
4. Improve the storm water control of the site as listed above.
5. Line the surface of the vehicle service area, formalise the wash bay and ensure all runoff water drains into an operational oil sump;
6. Ensure all chemicals and hazardous substances are stored in a bunded area.
7. Seal all the bund walls.
8. Prepare an emergency plan site map as specified above.
9. Remove the black plastic from the stormwater channels.
10. Start the use of a general waste register.
11. Sort and clean the area where building rubble was dumped.
12. Remove all hydrocarbons from the above area and the salvage yard.

ABILITY OF EMPR TO ADEQUATELY MANAGE OR MITIGATE ENVIRONMENTAL IMPACTS *(APPENDIX 7 SUB-REGULATION 3(E)*:

It is believed that the EMPR currently adequately manage and/or mitigate environmental impacts at the mining area.

NEED FOR AMENDMENT OF THE EMPR:

No need was identified for the amendment of the EMPR.

FINANCIAL PROVISION:

The right holder has a financial guarantee to the value of R 605 000 lodged with DMRE.

The NEMA Financial Provision Regulations, 2015 stipulates that a holder of right must annually review/assess/adjust the financial provision of the site, and therefore the financial provision calculation of Makhanda Mining (Pty) Ltd was reviewed as part of the environmental performance audit. The 2024 financial provision required to rehabilitate the mining area in accordance with the Guideline Document for the Evaluation of the Quantum of Closure-related Financial Provision by a Mine and as prescribed in terms of Regulation 54 (1) is R 597 275.38.

ECO SIGNATURE

NAME:	SIGNATURE:	DATE:
Christine Fouche		20 August 2024

PHOTOGRAPHS

Scrap yard neatly sorted, but all hydrocarbons to be removed

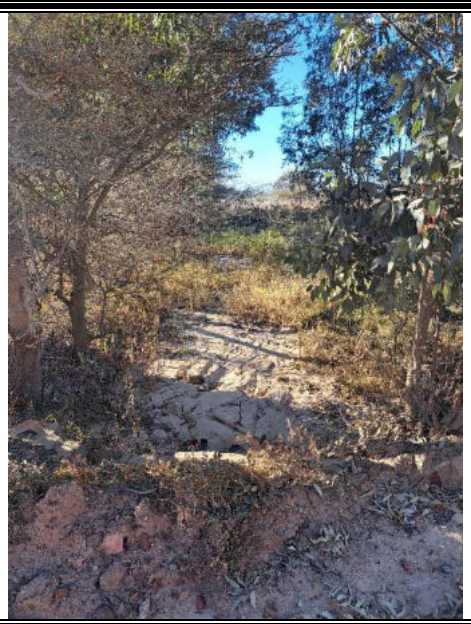
Stored products to be removed from site

Storage tank removed from bunded area

Wood and pallet storage area

Brick storage area

Drainage channel to be cleaned



Drainage channel to be cleaned

Long drops no longer in use. To be removed.

Bricks to be sold

Packing area to be potentially rehabilitated

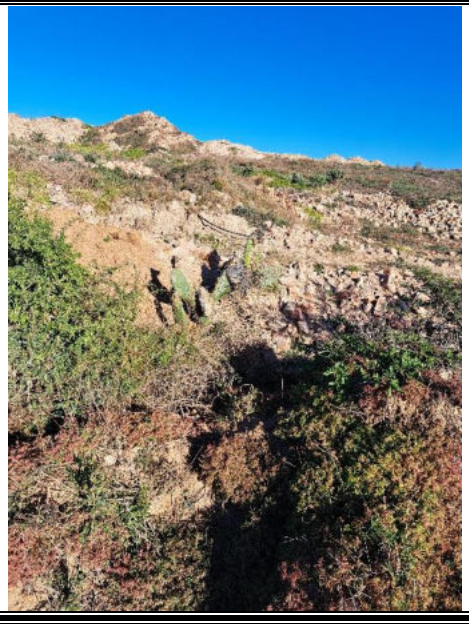


Rehabilitation/reinstatement of area considered

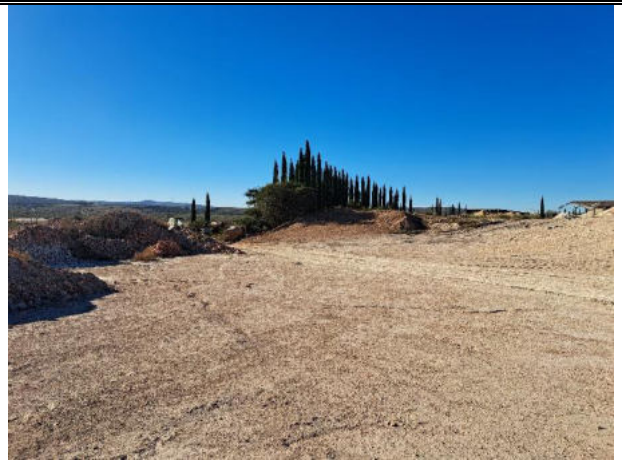


Plastic being sorted for reuse / removal from site

Drainage channel blocked by a road – to be opened and discarded bricks to be removed



Weeds to be removed



Stockpile area and road to quarry neatly managed

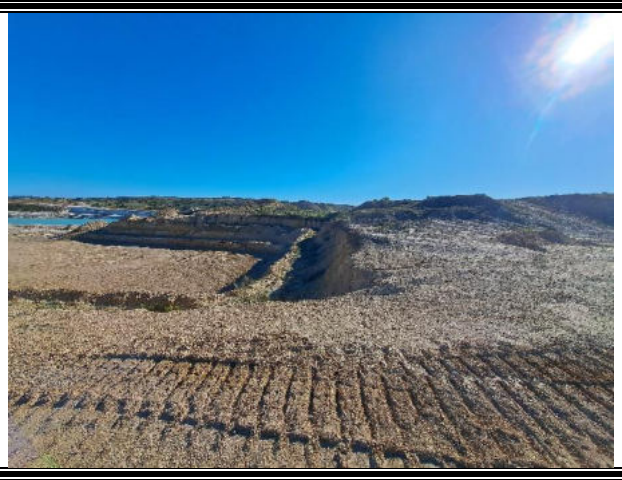


Building rubble and waste to be sorted and removed from site



Stockpile areas neatly managed.





Clay quarry pit with first picture showing the extension area



Clay quarry

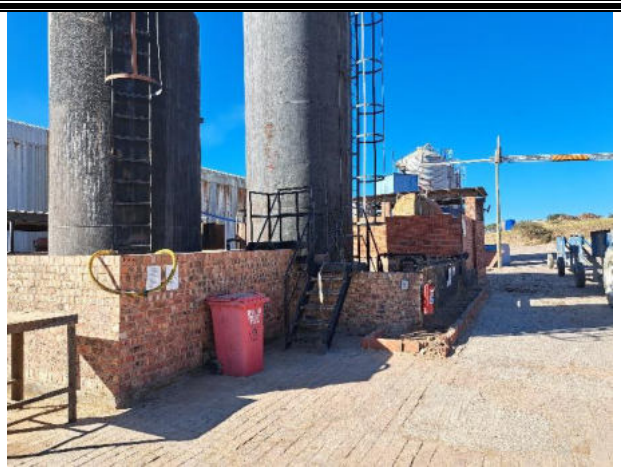


Old stockpile area being rehabilitated. Note mesembs on the berm

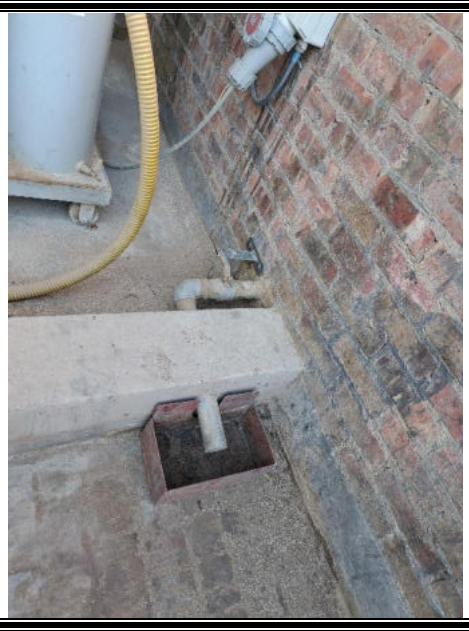


Vegetation established on berms

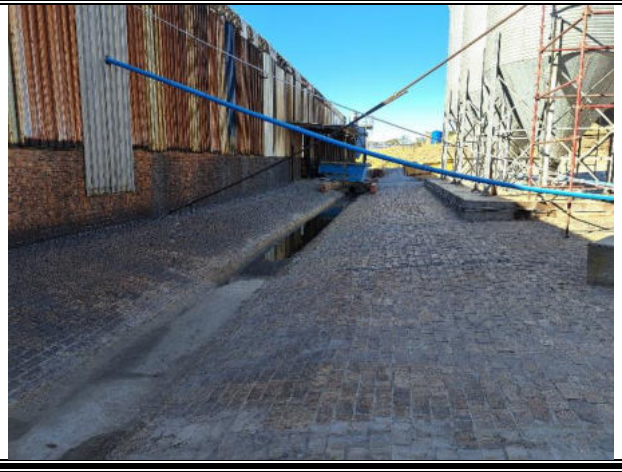
Berms vegetated and trees added as windbreak.



Oil spill kit on site



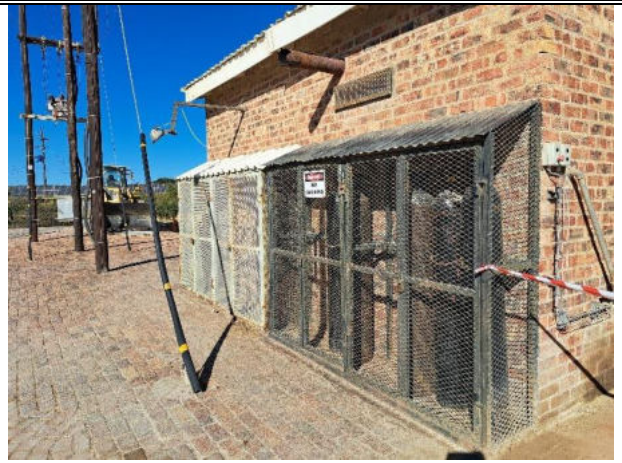
Bunded area neatly managed



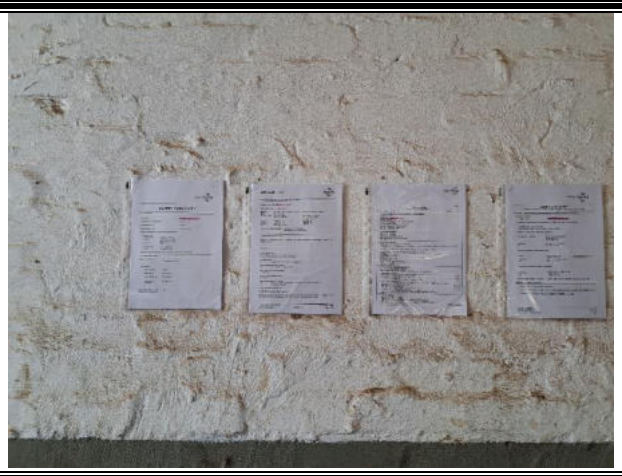
Bund of the used oil containers to be finalised to prevent dirty water runoff entering the nearby stormwater channel

Bund to be repaired

Oil spill kit on site

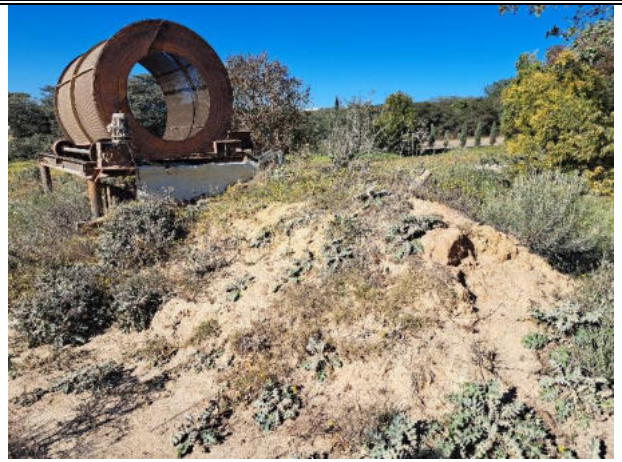
		
Tank to be placed in a bunded area	Gas neatly caged	Tank to be placed in a bund
		
New refuse bins	Bund to be increased	Hazardous wast bins used at the workshop

Oil store neatly managed with MSDS's displayed



Fire extinguisher on site

Spill kit at the workshop



Mexican poppy plants to be removed

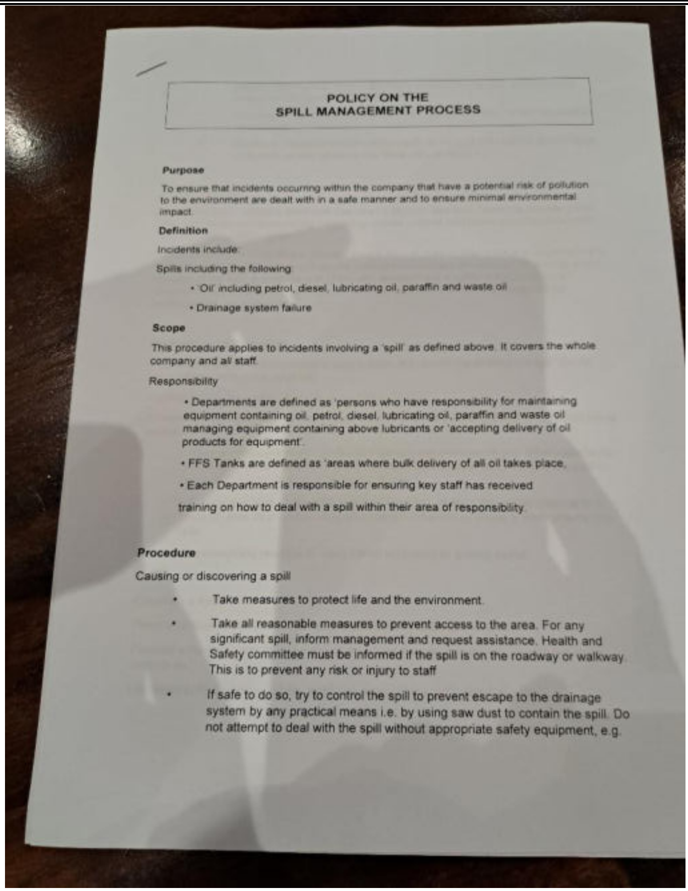
Runoff from workshop to be contained

Service area to be lined

Bund to be sealed

Tank to be placed in a bund

Clamp yard area neatly managed



POLICY ON THE
SPILL MANAGEMENT PROCESS

Purpose

To ensure that incidents occurring within the company that have a potential risk of pollution to the environment are dealt with in a safe manner and to ensure minimal environmental impact.

Definition

Incidents include:

Spills including the following:

- 'Oil' including petrol, diesel, lubricating oil, paraffin and waste oil
- Drainage system failure

Scope

This procedure applies to incidents involving a 'spill' as defined above. It covers the whole company and all staff.

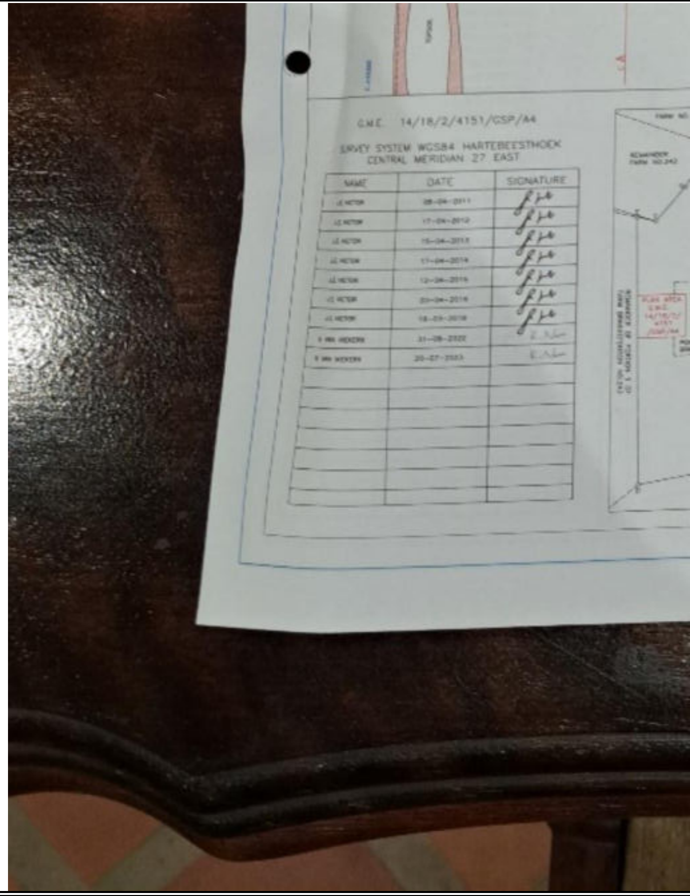
Responsibility

- Departments are defined as 'persons who have responsibility for maintaining equipment containing oil, petrol, diesel, lubricating oil, paraffin and waste oil managing equipment containing above lubricants or 'accepting delivery of oil products for equipment'.
- FFS Tanks are defined as 'areas where bulk delivery of all oil takes place.
- Each Department is responsible for ensuring key staff has received training on how to deal with a spill within their area of responsibility.

Procedure

Causing or discovering a spill

- Take measures to protect life and the environment.
- Take all reasonable measures to prevent access to the area. For any significant spill, inform management and request assistance. Health and Safety committee must be informed if the spill is on the roadway or walkway. This is to prevent any risk or injury to staff
- If safe to do so, try to control the spill to prevent escape to the drainage system by any practical means i.e. by using saw dust to contain the spill. Do not attempt to deal with the spill without appropriate safety equipment, e.g.



Spill management CoP	Proof that the mine plan was updated