



INSPECTION SHEET ENVIRONMENTAL CONTROL OFFICER

**SAND MINE ON A PORTION OF THE FARM DE  
KLERKSKRAAL 231 IN THE THEUNISSEN DISTRICT,  
FREE STATE PROVINCE**

**ENVIRONMENTAL AUDIT REPORT**

<b>DMR REFERENCE NUMBER:</b>	<b>FS30/5/1/3/2/10207MP</b>
<b>AUDIT PERIOD:</b>	<b>February 2021</b>

**FEBRUARY 2020**

***Prepared For:***

Vengablox

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***Prepared By:***

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**ENVIRONMENTAL PERFORMANCE ASSESSMENT  
DE KLERKSKRAAL SAND MINE**

**PROJECT DETAIL:**

<b>Permit Number:</b>	FS30/5/1/3/2/10207MP	<b>Date of Commencement:</b>	November 2019
<b>Site Name:</b>	De Klerkskraal Quarry	<b>Inspection Date:</b>	26 February 2021
<b>Permit Holder:</b>	Blazecor 226 CC	<b>Other Authorisations:</b>	4 March 2017
<b>Report Number:</b>	11		

**DETAIL OF AUDITOR**

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

<b>ECO:</b>	Gerhard Botha
<b>Expertise:</b>	Mrs. GA Botha has 10 years of experience in environmental legal compliance audits, (GIS) geographic information system, mining right and permit applications and applications for environmental authorizations & Water use applications.
<b>Declaration of Independence:</b>	<p>I Gerhard Botha declare that –</p> <ul style="list-style-type: none"> <li>• I act as independent environmental control officer in this compliance audit;</li> <li>• 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;</li> <li>• I have expertise in conducting environmental compliance audits, including knowledge of the Act and regulations that have relevance to the activity;</li> <li>• I will adhere to and comply with all responsibilities as indicated in the National Environmental Management Act and Environmental Impact Assessment Regulations.</li> <li>• 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.</li> </ul> <p align="center">             Signature of ECO         </p> <p align="right">Date: 12 March 2020</p>



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**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.

**OBJECTIVE:**

The objective of the environmental audit report (EAR) is to evaluate compliance of the operational activities with the environmental management programme (EMPR) and mining permit.

**INSPECTED AREAS:**

The inspection included an assessment of the following areas:

- Washing and Screening plant area;
- Earthmoving and excavating equipment
- Site Vehicles
- Overburden and topsoil dumps;
- Stockpiles;
- General working area
- Office area;
- Site Storage Area

In order to establish the environmental compliance assessment of the operation, the mining site was inspected on foot by the Environmental Control Officer, Gerhard Botha of Greenmined Environmental.

**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 and background information gathered from site management.

**LOCATION:**

<b>Site Location:</b>	The site is situated approximately 35km south of Theunissen along the R30 towards Welkom near Bloudrif. The proposed mining area is approximately 4.8ha in extent (including current excavation)
<b>Site Coordinates:</b>	A – 28.140256°S; 26.670736°E

B – 28.139903°S; 26.671786°E
C – 28.138353°S; 26.671411°E
D – 28.137663°S; 26.671988°E
E – 28.137252°S; 26.671658°E
F – 28.137028°S; 26.670997°E
G – 28.137403°S; 26.670481°E
H – 28.138631°S; 26.669492°E
I – 28.138828°S; 26.669611°E
J – 28.138719°S; 26.669611°E

**PROJECT DESCRIPTION:**

The applicant, Blazecor 226 CC intends to mine 4.8ha over a certain portion of the Farm De Klerkskraal 231, Theunissen magisterial district, Free State Province. The mining procedure will entail strip mining through excavation and dredging of the proposed footprint area. The material from the mine will be used for the supply of sand to building projects to supply housing and other infrastructure in and around Theunissen area. The DMR approved a section 102 mining permit with reference number FS30/5/1/3/2/10207MP.

**SITE CONDITIONS:**

At the time of the inspection the climate was warm and sunny minimal cloud cover and a very slight breeze.

**REPORTABLE ENVIRONMENTAL INCIDENTS:**

<b>Incident Date:</b>	N/A
<b>Incident No:</b>	N/A
<b>Incident:</b>	No Environmental Incidents at this stage
<b>How addressed:</b>	N/A
<b>When addressed:</b>	N/A

**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



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



**INSPECTION SHEET ENVIRONMENTAL CONTROL OFFICER**

**INSPECTION ASPECTS:**

Description	Compliance score	Non-Compliance Score	Status	Comments
<b>LEGISLATION COMPLIANCE:</b>				
National Environmental Management Act, 1998 (Act No 107 of 1998) and the Environmental Impact Assessment Regulations, 2014	5	1	Compliant	
Copy of the EA and EMPR available on site	5	1	Compliant	
Mineral and Petroleum Resources Development Act, 2002 (Act No 28 of 2002)	5	1	Compliant	
Mining Permit available on site	5	1	Compliant	
National Water Act, 1998 (Act 36 of 1998)	5	1	Compliant	
National Environmental Management: Biodiversity Act, 2004 (Act No 10 of 2004) (NEM:BA)	5	1	Compliant	
Hazardous Substances Act, 1973 (Act 15 of 1973)	5	1	Compliant	
<b>ASPECTS OF THE AFFECTED ENVIRONMENT</b>				
<b>Topsoil: Overburden Management</b>				
Topsoil stripping	5	1	Compliant	
Topsoil storage (heaps not exceeding 2 m)	5	1	Compliant	Prior to construction of the wash bay area and sump, the topsoil within the construction footprint should be removed and stockpiled.
Topsoil heaps vegetated	5	1	Compliant	
Overburden stripped & stockpiled	5	1	Compliant	

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Description	Compliance score	Non-Compliance Score	Status	Comments
Stockpiles monitored for erosion, weeds and foreign matter	5	1	Compliant	
Topsoil returned to rehabilitated area	NA	1	NA	No rehabilitation has occurred up to date.
<b>Vegetation</b>				
Protected plants (if any) sheltered from mining activities	5	1	Compliant	
Removal of vegetation limited to smallest possible area	5	1	Compliant	
Aliens & weeds controlled on site	4	2	Compliant, In progress	A few Category 1b Alien Invasive Plants, most notably <i>Datura ferox</i> (Olieboom) and <i>Xanthium strumarium</i> (large cocklebur, kankerroos), have started to establish within the mining footprint and should be eradicated as soon as possible. Eradication of these species occur as they are noted.
Seeding of rehabilitated area done with indigenous vegetation found within 5 km of the site.	NA	1	NA	No rehabilitation has occurred up to date.
<b>Fauna</b>				
All animals, birds and reptiles protected on site.	5	1	Compliant	
Excavations daily monitored for trapped fauna	5	1	Compliant	
<b>Air Quality and Noise (EMP PG: 56, 98, 99):</b>				
Dust monitoring plan implemented	5	1	Compliant	Dust monitoring on a monthly basis
Dust suppression implemented	5	1	Compliant	
Speed on access road limited to 40 km/h	5	1	Compliant	
Mining equipment serviced regularly to ensure noise emissions are minimized	NA	1	NA	No servicing allowed on site
No loud music permitted on site	5	1	Compliant	

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Description	Compliance score	Non-Compliance Score	Status	Comments
Residents on the property and surrounding areas informed if any unusual noise activities are planned	5	1	Compliant	
<b>Archaeological and Cultural Interest</b>				
Archaeological and/or cultural remnants protected.	5	1	Compliant	
<b>Surface and Storm Water Management</b>				
Storm water Management Plan implemented on site	5	1	Compliant	
Storm water diverted around the mining area and access roads to prevent erosion	5	1	Compliant	Storm water have been diverted successfully around the stockpiling area.
Damming up of water in the mining area prevented	5	1	NA	A portion of the sand quarry have filled up with surface runoff and overspill from the river, following heavy rainfall and flooding of the As River. Sand mining within this portion of the quarry has been halted and mining activities were relocated to another portion of the mine area. No activities should be allowed until all of the water have drained out of the quarry.
Mining conducted in accordance with the Best Practice Guidelines for small scale mining	5	1	Compliant	
Areas with erosion reinstated	4	2	Compliant, In progress	As a result of the large volume of precipitation that fell during the past couple of months, some areas have been exposed to erosion. The area around the culvert, channelling stream flow underneath the access road has been exposed to erosion. The portion of river bank around the water pipeline have been impacted. Some actions in terms of sloping and reinstatement have occurred, and is currently in progress.
<b>Visual Exposure</b>				
Is the contractor implementing good visual and housekeeping standards	5	1	Compliant	The mining area is neat and tidy with a good visual appearance
Mining area neatly sloped and landscaped	NA	1	NA	No rehabilitation has occurred up to date.
<b>Hazardous Chemical Management</b>				

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Description	Compliance score	Non-Compliance Score	Status	Comments
Hazardous material stored within a bunded area (110% capacity)	5	1	Compliant	Waste bins containing hazardous waste stored on an impenetrable, bunded surface.
Fuel and oil spill managed	4	3	Compliant, Immediate action to be taken	Numerous small oil spills were recorded at the time of the inspection, and was due to an oil leak associated with the tipper.
Drip trays present when refuelling is done outside the service bay	5	1	Compliant	
Mining equipment mechanically sound without visible oil leaks	3	3	Compliant, Immediate action to be taken	The tipper currently has a leak resulting in numerous small oil spill within the mining area.
<b>Waste Management</b>				
Site free of day-to-day litter	5	1	Compliant	
Hazardous and general waste stored separately	5	1	Compliant	
General waste dumped at a recognised landfill site	5	1	Compliant	
Hazardous waste removed by a registered waste handling contractor	5	1	Compliant	
No waste stockpile area allowed outside the boundaries of the mining area	5	1	Compliant	
Suitable covered receptacles available at all times and conveniently placed for the disposal of waste	5	1	Compliant	
Integrated waste management approach implemented on site	5	1	Compliant	
<b>Potable Water and Ablution Facilities</b>				
Ablution facilities available on site more than 200m from a watercourse	5	1	Compliant	

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Description	Compliance score	Non-Compliance Score	Status	Comments
Potable water available on site for use of workers	5	1	Compliant	
Effluent water from the camp washing facility disposed of in a French drain, situated more than 200m from a watercourse	NA	1	NA	
<b>Fire Management</b>				
Firefighting equipment available on-site	5	1	Compliant	
No open fires at mining site allowed	5	1	Compliant	
<b>Mine and Equipment Management</b>				
Mining area demarcated with visible beacons	4	3	Compliant, Immediate action to be taken	Currently, there are no beacons indicating the boundaries/corners of mining area.
Mining conducted within approved footprint area	5	1	Compliant	
Mine operational within hours as stipulated in the EMPR (6:00 – 18:00, Monday – Saturday, excl. public holidays)	5	1	Compliant	
A public complaints register maintained on site	5	1	Compliant	
Incident register maintained on site	5	1	Compliant	
Emergency preparedness plan implemented on site	5	1	Compliant	
<b>Access Roads, Vehicle and Transporting of Material</b>				
Access road maintained	5	1	Compliant	
Movement of project related vehicles and machinery restricted to the approved mining area	5	1	Compliant	
Vehicle repairs only conducted at the off-site workshop	5	1	Compliant	

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Description	Compliance score	Non-Compliance Score	Status	Comments
Speed limit of 30km/h enforced within the mining area	5	1	Compliant	
Storm water diverted around the access roads to prevent erosion	NA	1	NA	
<b>Employee and Safety Management</b>				
Workers inducted and informed of EMP conditions	5	1	Compliant	Site induction and environmental training have been done with the staff on the 30th of June 2020.
No camping allowed on the mining area	5	1	Compliant	
Workers provided with PPE	5	1	Compliant	
Appropriate notification signage erected at the mining site, warning the public about the hazard around the mining site and presence of heavy vehicles and machinery	5	1	Compliant	
Weather proof, durable, legible notices in at least three official languages applicable in the area displayed at the entrance to the site.	5	1	Compliant	
Effective access control to prevent unauthorised entry.	5	1	Compliant	
Mining area fenced off with lockable gates	5	1	Compliant	
Hauling routes clearly marked with appropriate signalling.	5	1	Compliant	



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**COMMENTS OR COMPLAINTS RECEIVED FROM I&AP'S**  
**(APPENDIX 7 SUB-REGULATION 3(G) & (J)):**

No written comments or complaints has been received from any of the surrounding I&AP's.

**GENERAL REPORT:**

Compliance of the mining site with the EMP approved by DMR was reviewed during the site assessment. The mining area recorded a compliance score of 98.6% for the month of February 2021. This is a slight decrease from the previous month's compliance score of 99.68%.

- 91.9% of tasks were executed 100% according to EMP specifications; and
- 5.2% of all tasks were executed at 80% achieving rate;
- 1% of all tasks were executed at 50% achieving rate; and

**All tasks were sill executed in accordance with the EMP specifications.**

Furthermore

Two activities have been identified which requires the consideration of mitigation

○ Control of Alien Plants and Weeds:

A few Category 1b Alien Invasive Plants, most notably *Datura ferox* (Olieboom) and *Xanthium strumarium* (large cocklebur, kankerroos), have started to establish within the mining footprint and along the access route.

- *Recommended Mitigation:* Within three weeks upon receipt of this report, a walk-through of the mining property should be conducted, wherein all affected (invaded) areas should be identified. These areas should then be cleared of these species with care taken not to allow the dispersal of seeds.

*Some eradication of IAPs have already occurred and is currently in progress.*

○ Areas with erosion within the mining area:

Erosion around the culvert area, channelling stream flow underneath the access road have reappeared. The portion of the river bank around the water pipeline have been subjected to erosion, furthermore, this portion of the bank have been disturbed during maintenance on the pipeline and water pump.

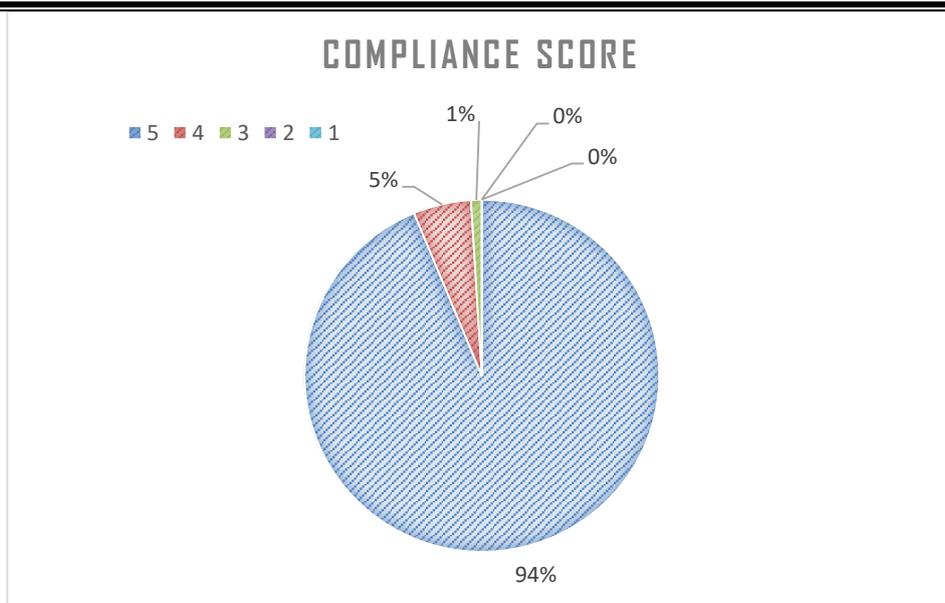
- *Recommended Mitigation:*

- a) The culvert system should be upgraded to a larger system, preferably a block culvert, which can be placed, level with the natural flow level of the stream. Erosion structures (earthen berms/rock fill foundations) and dissipaters should be reinstated.

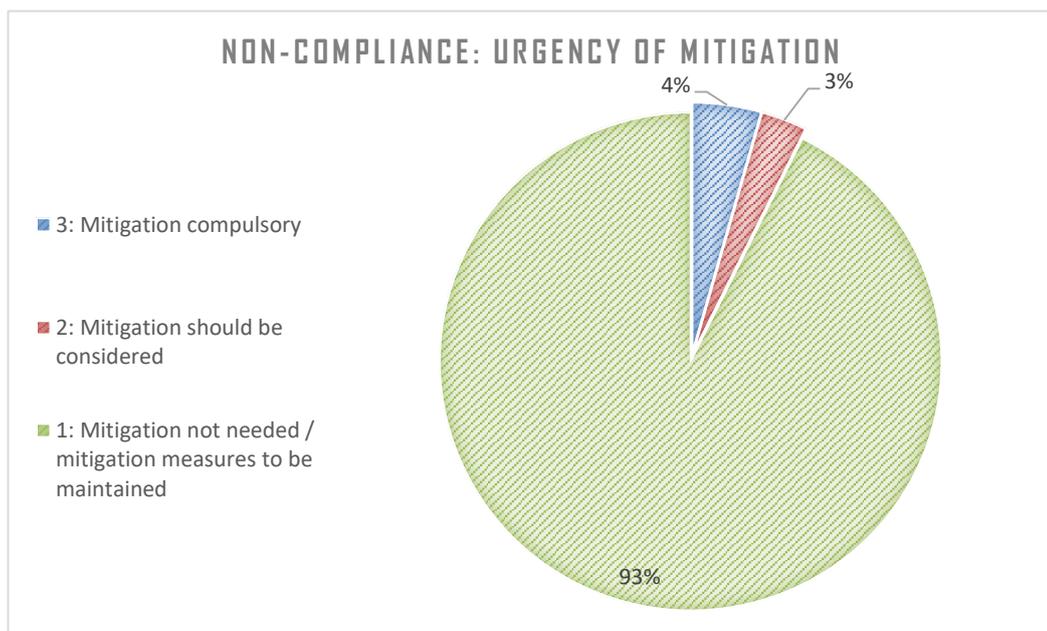
- b) The river bank and upstream slope around the water pipeline should be landscaped and stabilised. This should include bench terracing (reconstruction of the land profile into series of stepped benches with a lateral gradient towards a suitable discharge point) of the higher lying areas. The broad base terrace should not exceed a slope of more than 15%. Any indigenous plant material removed from the mining area (excluding invasive alien plants) can be spread across the terrace bases and left as mulch. Earthen material/gabions should be used at the distal portions of the base terraces to slow down runoff even further.

Three activities have been identified which require compulsory mitigation namely:

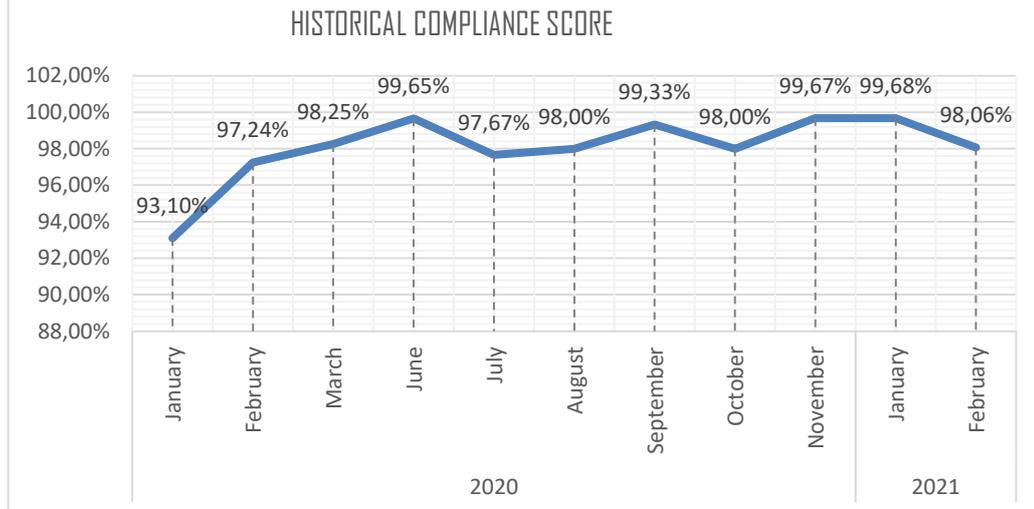
- Fuel and oil spill management:  
Numerous small oil spills have been noted around mining area due to an oil leak associated with the tipper.
  - *Recommended Mitigation:* A walk-through of the mining area should be done as soon as possible wherein all contaminated soil are removed and stored within a sealable container for later removal by a registered hazardous disposal company
  
- Mining equipment mechanically sound without visible oil leaks:  
The tipper is currently leaking oil, resulting in the contamination of soil
  - *Recommended Mitigation:* A drip tray should be placed underneath the source of the leak. The tipper should be serviced and made safe before allowing the vehicle to resume activities within the mining area.
  
- Mining area demarcated with visible beacons  
Currently there are no signs/beacons indicating the boundary/corners of the mining area
  - *Recommended Mitigation:* Such beacons should be installed as soon as possible
  
- The remaining 63 activities (92.6%) of activities occur sufficient enough and at acceptable levels, that no additional Mitigation Measures are required and the current active Mitigation Measures should only be maintained.



**Figure 1:** Compliance scores for all activities as listed within the approved Environmental Management Programme for the De Klerkskraal Sand Mine.



**Figure 2:** Degree of urgency in terms of mitigation for the listed non-compliance activities.



**Figure 3:** Historical compliance scores for the De Klerkskraal Sand Mine.

**POSITIVE FINDINGS:**

There is a clear effort made from the site manager to improve the site’s visual and environmental standards. Overall, the contractor was implementing high visual and housekeeping standards.

- The site was in a neat order.
- Clearly marked waste bins were present and easily accessible, these waste bins, including the hazardous waste bin are stored within a bunded area with an impenetrable surface.
- Fuel is kept in bunded area, fully built next to storage area.
- General waste has also been removed to the main site in Theunissen from where the waste will be disposed of at a Waste Disposal Facility.
- Immediate actions were taken to remove the identified alien invasive plants.

**MATTERS TO BE ADDRESSED ON SITE:**

- Control of Alien Plants and Weeds:
  - *Recommended Mitigation:* Within three weeks upon receipt of this report, a walk-through of the mining property should be conducted, wherein all affected (invaded) areas should be identified. These areas should then be cleared of these species with care taken not to allow the dispersal of seeds.  
*Some eradication of IAPs have already occurred and is currently in progress.*
  
- Areas with erosion within the mining area:
  - *Recommended Mitigation:*
    - a) The culvert system should be upgraded to a larger system, preferably a block culvert, which can be placed, level with the natural flow level of the stream. Erosion structures (earthen berms/rock fill foundations) and dissipaters should be reinstated.

b) The river bank and upstream slope around the water pipeline should be landscaped and stabilised. This should include bench terracing (reconstruction of the land profile into series of stepped benches with a lateral gradient towards a suitable discharge point) of the higher lying areas. The broad base terrace should not exceed a slope of more than 15%. Any indigenous plant material removed from the mining area (excluding invasive alien plants) can be spread across the terrace bases and left as mulch. Earthen material/gabions should be used at the distal portions of the base terraces to slow down runoff even further.

- Fuel and oil spill management:
  - *Recommended Mitigation:* A walk-through of the mining area should be done as soon as possible wherein all contaminated soil are removed and stored within a sealable container for later removal by a registered hazardous disposal company
  
- Mining equipment mechanically sound without visible oil leaks:
  - *Recommended Mitigation:* A drip tray should be placed underneath the source of the leak. The tipper should be serviced and made safe before allowing the vehicle to resume activities within the mining area.
  
- Mining area demarcated with visible beacons
  - *Recommended Mitigation:* Such beacons should be installed as soon as possible

**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 for the amendment of the EMPR could be identified during the site assessment.

**ECO SIGNATURE:**

NAME:	SIGNATURE:	DATE:
Gerhard Botha		12 March 2021

### **FINANCIAL PROVISION**

The last quantum calculation compiled for the De Klerkskraal Sand Mine was in June 2020 and the financial provision amount came to R 119 554.79. The 2020 financial provision did not exceed the value of the bank guarantee in place with the DMR, and therefore the right holder was not required to provide a shortfall. The financial provision calculation was submitted to DMR.



**INSPECTION SHEET ENVIRONMENTAL CONTROL OFFICER**

**PHOTOGRAPHS: GENERAL APPEARANCE AND PROGRESS**

**MINING ACCESS ROAD**



**The culvert that needs to be upgraded**



**Damming of water above the culvert indication the inability of the culvert to allow for natural drainage/stream flow.**



**Most of the erosion prevention structures have been flushed away.**



SCREENING PLANT AND SITE OFFICE



STORAGE, ABLUSION AND PARKING BAY



SAND MINE (QUARRY)



ALIEN INVASIVE PLANTS RECORDED WITHIN THE MINNIG FOOTPRINT



*Xanthium strumarium* (Large cocleblur, kankerroos)



*Xanthium strumarium* (Large cocleblur, kankerroos)



Eradication of IAPs (*Datura stramonium*)



Eradication of IAPs (*Xanthium strumarium*)

