PROPOSED STOCKPIL ARE ON A PORTION OF REMAINING EXTENT OF FARM 89, INGQUZA HILL LOCAL MUNICIPALITY, EASTERN CAPE PROVINCE.

DRAFT ENVIRONMENTAL MANAGEMENT PLAN REPORT

JUNE 2024

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ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

1. ENVIRONMENTAL MANAGEMENT PROGRAMME

(APPENDIX 4 SECTION 1(1)(a))

Details and Expertise of the EAP,

The details and expertise of Zoë Norval and Sonette Smit of Greenmined Environmental that acts as EAPs on this project has been attached as Appendix G as required.

(APPENDIX 4 SECTION 1(1)(b))

Description of the Aspects of the Activity

The aspects of the activity that are covered by the environmental management programme has been described and included in Section A (1) of the draft BAR.

(APPENDIX 4 SECTION 1(1)(c))

Description of impact management objectives including management statements

i) Determination of closure objectives.

The primary objective, at the end of the project's life, will be to successfully reinstate the altered footprint. To realise this, the following main objectives must be achieved:

- Remove all temporary infrastructure and waste from the site.
- Shape and contour disturbed areas in compliance with the EMPR.
- Use the topsoil effectively to promote the re-establishment of vegetation.
- Ensure that all rehabilitated areas are stable and self-sustaining in terms of vegetation cover.
- Eradicate all weeds/invader plant species by intensive management of the area.

The decommissioning phase will entail the reinstatement of the stockpile area by removing the stockpiled material, and site infrastructure/equipment and landscaping the disturbed footprints.

The decommissioning activities will therefore consist of the following:

- Removing all stockpiled material;
- Removing all infrastructure, machinery, and equipment from site;
- Landscaping all disturbed areas and replacing the topsoil;
- Vegetating the reinstated area; and

- Controlling/monitoring the invasive plant species.

The future land use of the proposed area will be agriculture. Upon replacement of the topsoil, the area will once again be available for grazing purposes, and the planting of the cover crop (to protect the topsoil) will tie in with the proposed land use.

The Applicant will implement the following:

- <u>Rehabilitation of plant, office, and service areas:</u>

  Coarse natural material used for the construction of ramps must be removed and dumped into the excavations as part of the rehabilitation of the quarry.

  Stockpiles must be removed during the decommissioning phase, the area ripped, and the topsoil returned to its original depth to provide a growth medium.

  On completion of operations, all structures or objects shall be dealt with in accordance with the following:
  - Where sites have been rendered devoid of vegetation/grass or where soils have been compacted owing to traffic, the surface shall be scarified or ripped.
  - Areas containing French drains shall be compacted and covered with a final layer of topsoil to a height of 10 cm above the surrounding ground surface.
  - The site shall be seeded with a vegetation seed mix adapted to reflect the local indigenous flora.

  Photographs of the camp and office sites, before and during the operation and after rehabilitation, shall be taken at selected fixed points and kept on record.

  On completion of operations, the surface areas, if compacted due to hauling and dumping operations, shall be scarified to a depth of at least 200 mm and graded to an even surface condition. Where applicable/possible topsoil needs to be returned to its original depth over the area.

  The area shall then be fertilized if necessary to allow vegetation to establish rapidly. The site shall be seeded with a local, adapted indigenous seed mix.

- <u>Final rehabilitation:</u>

  Rehabilitation of the surface area shall entail landscaping, levelling, top dressing, land preparation, seeding (if required) and maintenance, and invasive plant species clearing.

All equipment, and other items used during the operational phase must be removed from the site.

Waste material of any description, including receptacles, scrap, rubble, and tyres, must be removed entirely from the stockpile area, and disposed of at a registered landfill facility. It will not be permitted to be buried or burned on the site.

The management of invasive plant species must be done in a sporadic manner during the life of the activities. Species regarded as Category 1a and 1b invasive species in terms of NEM:BA (National Environmental Management: Biodiversity Act 10 of 2004 and regulations applicable thereto) will be eradicated from the site.

ii) Volume and rate of water use required for the operation

Any water required for the implementation of the project will be bought and transported to the stockpile area (in a truck) where it will be stored in tanks until used. Presently, no washing of material is proposed, and the Applicant will therefore mainly use the water for dust suppression purposes on denuded areas, the processing plant, and access road (when needed). It is proposed that ± 60 000 l water/day will be need for dust suppression measures during the dry months.

iii) Has a water use licence been applied for?

The proposed stockpile area falls within 500 m of a wetland area and requires Water Use Authorization in terms of Section 39 of the National Water Act,1998 (Act No. 36 of 1998) for water uses as defined in section 21 of the Act. An application for water use approval will be submitted to the DWS in due course.

iv) Impacts to be mitigated in their respective phases

Table 1: Impact to be mitigated in their respective phases.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
❖ Demarcation of site with visible beacons.	Site Establishment phase	19.9 ha	Demarcation of the site will ensure that all employees are aware of the boundaries of the stockpile area, and that work stay within the approved footprint.	Operations are only allowed within the boundaries of the approved area. ❖ NEMA, 1998	Beacons need to be in place throughout the life of the activity.
❖ Site establishment	Site Establishment & Operational Phase	19.9 ha	**Loss of agricultural land for duration of the project:** ❖ The Applicant is currently coordinating with the tribal chief to convert the agricultural land into a stockpile area, with compensation to the community being negotiated through royalties. ❖ If needed, rehabilitated areas could revert to agricultural use once the cover crop stabilised.	Use of agricultural land must be managed in accordance with the: ❖ CARA, 1983	Throughout the site establishment-, and operational phases.
❖ Site establishment ❖ Stripping and stockpiling of topsoil. ❖ Cumulative impacts.	Site Establishment & Operational Phase	19.9 ha	**Visual Mitigation:** ❖ The site must have a neat appearance and always kept in good condition. ❖ All equipment must be stored neatly in dedicated areas when not in use. ❖ The EA holder must limit vegetation removal, and stripping of topsoil may only be done immediately prior to the use of a specific area. ❖ All activities must be contained within the approved footprint area. ❖ Upon closure the site must be rehabilitated to ensure that the visual impact on the aesthetic value of the area is reduced to the minimum.	Management of the activities must be in accordance with the: ❖ NEMA, 1998	Throughout the site establishment- and operational phases.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
❖ Site establishment ❖ Cumulative Impacts	Site Establishment phase	19.9 ha	**<u>Management of vegetation removal:</u>** ❖ The site boundaries must be clearly demarcated, and all operations must be contained to the approved area. The area outside the boundaries must be declared a no-go area, and all staff must be educated accordingly. ❖ A pre-commencement environmental induction for all site staff must be provided to ensure that basic environmental principles are adhered to. This includes awareness of no littering, appropriate handling of pollution and chemical spills, avoiding fire hazards, minimising wildlife interactions, remaining within demarcated construction areas, etc. ❖ Cleared vegetation to be retained at any time may not be burned but can be mulched and stockpiled. Ideally the heaps can be covered with stockpiled topsoil and the material be retained for future site rehabilitation purposes. The wood can be donated to the landowner and/or community. ❖ The ECO must provide supervision and oversight of vegetation clearing activities and other activities which may cause damage to the environment, especially during the site establishment phase, when most of the vegetation clearing is taking place. ❖ All vehicles must remain on demarcated roads and no unnecessary	Natural vegetated areas must be managed in accordance with the: ❖ NEM:BA, 2004	Throughout the site establishment- and operational phases.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			driving in the veld outside these areas may be allowed. ❖ No plants may be translocated or otherwise uprooted or disturbed for rehabilitation or other purposes without express permission from the ECO and without the relevant permits. ❖ No fires must be allowed on-site. ❖ Spoil heaps and topsoil stockpiles must be provided with a vegetation cover of indigenous grasses.		
❖ Site establishment ❖ Stripping and stockpiling of topsoil. ❖ Cumulative impacts.	Site Establishment & Operational Phase	19.9 ha	**<u>Protection of Fauna:</u>** ❖ The site manager must ensure no fauna is caught, killed, harmed, sold, or played with. ❖ Any fauna directly threatened by the operational activities must be removed to a safe location by the ECO or other suitably qualified person. ❖ All personnel must undergo environmental induction regarding fauna management and in particular awareness about not harming or collecting species such as snakes, tortoises and owls which are often persecuted out of superstition. Workers must be instructed to report any animals that may be trapped in the working area. ❖ No snares may be set, or nests raided for eggs or young. ❖ All vehicles must adhere to a low speed limit (40 km/h is recommended) to avoid collisions with susceptible species such as snakes and tortoises.	Site specific fauna must be managed in accordance with the: ❖ NEM:BA, 2004	Throughout the site establishment-, and operational phases.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			❖ No litter, food or other foreign material may be thrown or left around the site. Such items must be kept in the site vehicles and daily removed to the site camp.		
❖ Site establishment ❖ Processing, stockpiling, and transporting of material.	Site Establishment, & Operational Phase.	19.9 ha	**Archaeological, Heritage and Palaeontological Aspects:** ❖ All activities must be confined to the development footprint area. ❖ If during the pre-construction phase, construction, operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage site, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager. ❖ It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find and confirm the extent of the work stoppage in that area. ❖ The senior on-site Manager must inform the ECO of the chance find and its immediate impact on operations. The ECO must then contact a professional archaeologist for an assessment of the finds who must notify the SAHRA.	Cultural/heritage aspects on site must be managed in accordance with the: ❖ NHRA, 1999	Throughout the site establishment-, and operational phases.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			❖ Work may only continue once the go-ahead was issued by SAHRA. ❖ The Eastern Cape Provincial Heritage Resources Authority must be contacted if any heritage objects are identified during earth-moving activities and all development should cease until further notice. ❖ No structures older than sixty years or parts thereof are allowed to be demolished, altered, or extended without a permit from the Eastern Cape Provincial Heritage Resources Authority. ❖ Under no circumstances may any heritage material be destroyed, inundated, collected, or removed from the site unless under the direction of the Eastern Cape Provincial Heritage Resources Authority and a heritage specialist. ❖ Should any remain, that could potentially be human remains be found on-site, the South African Police Service (SAPS) must be contacted, and the Eastern Cape Provincial Heritage Resources Authority must be notified immediately. No SAPS official may disturb or exhume such remains, without the necessary permission from the Eastern Cape Provincial Heritage Resources Authority. ❖ Sources of all-natural materials (including topsoil, sands, natural gravels, crushed stone, asphalt, etc.) must be obtained in a sustainable		

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			manner and in compliance with the heritage and environmental (NEMA) legislation.		
❖ Stripping and stockpiling of topsoil. ❖ Sloping and landscaping during rehabilitation.	Site Establishment-, Operational and Decommissioning Phase	19.9 ha	**<u>Topsoil Management</u>** ❖ The upper 300 mm of the soil must be stripped and stockpiled before use. ❖ Topsoil is a valuable and essential resource for rehabilitation, and it must therefore be managed carefully to conserve and maintain it throughout the stockpiling and rehabilitation processes. ❖ Topsoil stripping, stockpiling, and re-spreading must be done in a systematic way. The project plan must be such that topsoil is stockpiled for the minimum possible time. ❖ The topsoil must be placed on a levelled area, within the earmarked footprint. No topsoil may be stockpiled in undisturbed areas. ❖ Topsoil stockpiles must be protected against losses by water- and wind erosion. Stockpiles must be positioned so as not to be vulnerable to erosion by wind and water. The establishment of plants (weeds or a cover crop) on the stockpiles will help to prevent erosion. ❖ Topsoil heaps may not exceed 2 m to preserve micro-organisms within the topsoil, which can be lost due to compaction and lack of oxygen. ❖ The temporary topsoil stockpiles must be kept free of invasive plant species.	Topsoil stripping must be managed in accordance with the: ❖ CARA, 1983 ❖ NEM:BA, 2004	Throughout the site establishment-, and operational phases.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			❖ Topsoil heaps to be stored longer than a period of 6 months needs to be vegetated with an indigenous grass seed mix if vegetation does not naturally germinate within the first growth season. ❖ Storm- and runoff water must be diverted around the stockpile area to prevent erosion. ❖ The stockpiled topsoil must be evenly spread, to a depth of 300 mm, over the rehabilitated area upon closure of the site. ❖ The EA holder must strive to re-instate topsoil at a time of year when vegetation cover can be established as quickly as possible afterwards, so that erosion of returned topsoil by both rain and wind, before vegetation is established, is minimized. The best time of year is at the end of the rainy season, when there is moisture in the soil for vegetation establishment and the risk of heavy rainfall events is minimal. ❖ A cover crop must be planted and established immediately after spreading of topsoil, to stabilize the soil and protect it from erosion. The cover crop must be fertilized for optimum biomass production. It is important that rehabilitation be taken up to the point of cover crop stabilization. Rehabilitation cannot be considered complete until the first cover crop is well established.		

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			❖ Run-off water must be controlled via temporary berms, where necessary, on the slopes to ensure that accumulation of run-off does not cause down-slope erosion. ❖ The rehabilitated area must be monitored for erosion, and appropriately stabilized if any erosion occurs for at least 12 months after reinstatement.		
❖ Stripping and stockpiling of topsoil. ❖ Processing, stockpiling, and transporting of material. ❖ Cumulative impacts.	Site Establishment-, Operational-, and Decommissioning Phase	19.9 ha	**<u>Fugitive Dust Emission Mitigation Measures:</u>** ❖ The liberation of dust into the surrounding environment must be effectively controlled using, inter alia, straw, water spraying and/or environmentally friendly dust-allaying agents that contains no PCB's (e.g. DAS products). ❖ The site manager must ensure continuous assessment of all dust suppression equipment to confirm its effectiveness in addressing dust suppression. ❖ Speed on the roads must be limited to 40 km/h to prevent the generation of excess dust. ❖ Areas devoid of vegetation, which could act as a dust source, must be minimized and vegetation removal may only be done immediately prior to use. ❖ The crusher plant must have operational water sprayers to alleviate dust generation from the conveyor belts.	Dust generation on site must be managed in accordance with the: ❖ NEM:AQA, 2004 Regulation 6(1) ❖ National Dust Control Regulations, GN No R827 ❖ ASTM D1739 (SANS 1137:2012)	Throughout the site establishment-, and operational phases.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			❖ Fines, blowing from the drop end of the crusher plant, can be minimized by attaching strips of used conveyor belts to the conveyor's end. ❖ Compacted dust must weekly be removed from the crusher plant to eliminate the dust source. ❖ Loads must be flattened to prevent spillage during transportation on public roads. ❖ Weather conditions must be taken into consideration upon commencement of daily operations. Limiting operations during very windy periods would reduce airborne dust and resulting impacts. ❖ All dust generating activities shall comply with the National Dust Control Regulations, GN No R827 promulgated in terms of NEM:AQA (Act 39 of 2004) and ASTM D1739 (SANS 1137:2012).		
❖ Stripping and stockpiling of topsoil. ❖ Processing, stockpiling, and transporting of material. ❖ Cumulative impacts.	Site Establishment-, Operational-, and Decommissioning Phase	19.9 ha	**<u>Noise Handling:</u>** ❖ The EA holder must ensure that employees and staff conduct themselves in an acceptable manner while on site. ❖ No loud music may be permitted at the site. ❖ All vehicles must be equipped with silencers and maintained in a road worthy condition in terms of the National Road Traffic Act, 1996 (Act No 93 of 1996). ❖ Site management must strive to minimise the noise caused by generators. All generators must be	Noise generation on site must be managed in accordance with the: ❖ NEM: AQA, 2004 Regulation 6(1) ❖ NRTA, 1996	Throughout the site establishment-, and operational phases.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			maintained and equipped with sound mufflers. If possible, the generators must be pointed away from the neighbouring land users. Further to this, all generators must be placed on a level area/footing to minimise vibration noise. ❖ Best practice measures shall be implemented to minimize potential noise impacts.		
❖ Stripping and stockpiling of topsoil. ❖ Processing, stockpiling, and transporting of material. ❖ Sloping and landscaping during rehabilitation phase. ❖ Cumulative impacts.	Site Establishment-, Operational, and Decommissioning Phase	19.9 ha	**<u>Management of Invasive Plant Species:</u>** ❖ An invasive plant species management plan must be implemented at the site to ensure the management and control of all species regarded as Category 1a and 1b invasive species in terms of NEM:BA (National Environmental Management: Biodiversity Act 10 of 2004 and regulations applicable thereto). Weed/alien clearing must be done on an ongoing basis throughout the life of the activities. ❖ No planting or importing of any alien species to the site for landscaping, rehabilitation or any other purpose may be allowed. ❖ All stockpiles must be kept free of invasive plant species. ❖ Management must take responsibility to control declared invader or exotic species on the rehabilitated areas. The following control methods can be used: ❖ Management must take responsibility to control declared invader or exotic	Weeds and invader plants on site must be managed in accordance with the: ❖ CARA, 1983 ❖ NEM:BA, 2004 ❖ Invader Plants Species Management Plan (Appendix J)	Throughout the site establishment-, operational, and decommissioning phases.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			species on the rehabilitated areas. The following control methods can be used: ▪ The plants can be uprooted, felled, or cut off and can be destroyed completely. ▪ The plants can be treated chemically by a registered pest control officer (PCO) using an herbicide recommended for use by the PCO in accordance with the directions for the use of such an herbicide.		
❖ Stripping and stockpiling of topsoil. ❖ Sloping and landscaping during rehabilitation.	Site Establishment-, Operational and Decommissioning Phase	19.9 ha	**<u>Erosion Control and Storm Water Management:</u>** ❖ A stormwater management plan must be developed and implemented for the duration of the activities. ❖ Clearing of vegetation must be limited to the proposed stockpile footprint. No clearing outside of the minimum required footprint to take place. ❖ Stormwater must be diverted around the topsoil heaps and work areas to prevent erosion. ❖ Stockpiles must be protected from erosion, stored on flat areas where possible, and be surrounded by appropriate berms. ❖ The outflow of run-off water from the stockpile area must be controlled to prevent down-slope erosion. This must be done by way of the construction of temporary banks and ditches that will direct run-off water (if needed). These must be in place at any points where	Erosion and storm water must be managed in accordance with the: ❖ CARA, 1983 ❖ NEMA, 1998 ❖ NWA, 1998	Throughout the site establishment-, and operational phases.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			overflow from the stockpile area may occur. ❖ Roads and other disturbed areas within the project area must be regularly monitored for erosion and problem areas must receive follow-up monitoring to assess the success of the remediation. ❖ Any erosion problems because of the proposed activities observed must be rectified immediately (within 48 hours) and monitored thereafter to ensure that it does not re-occur. ❖ Silt/sediment traps/barriers must be used where there is a danger of topsoil or material stockpiles eroding and entering downstream drainage lines and other sensitive areas. These sediment/silt barriers must regularly be maintained and cleared to ensure effective drainage of the areas. ❖ The operation must be conducted only in accordance with the Best Practice Guideline for small scale mining that relates to storm water management, erosion and sediment control and waste management, developed by the Department of Water and Sanitation (DWS), and any other conditions which that Department may impose: ▪ 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. You must prevent clean		

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			water from running or spilling into dirty water systems. ▪ Dirty water must be collected and contained in a system separate from the clean water system. ▪ Dirty water must be prevented from spilling or seeping into clean water systems. ▪ A storm water management plan must apply for the entire life cycle of the activity and over different hydrological cycles (rainfall patterns). ▪ The statutory requirements of various regulatory agencies and the interests of stakeholders must be considered and incorporated into a storm water management plan. ❖ All fuels and chemicals stored or used on site must be contained within fit for purpose containers and stored within designated storage areas. To prevent pollution of the surrounding environment during an accidental spillage, the designated storage areas must be situated on an impermeable surface and must feature a perimeter bund and a drainage sump. The volume of the bund and sump must be sized to contain at least 110% of the total volume of the fuel and chemicals being stored within the designated storage area. The storage areas must feature a roof to prevent inflow of rainwater,		

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			which would require the sump to be emptied more frequently.		
❖ Stripping and stockpiling of topsoil. ❖ Processing, stockpiling, and transporting of material. ❖ Sloping and landscaping during rehabilitation phase.	Site Establishment-, Operational-, and Decommissioning Phase	19.9 ha	**<u>Waste Management:</u>** ❖ Regular vehicle maintenance, repairs and services may only take place at the workshop and service area. If emergency repairs are needed on equipment not able to move to the workshop, drip trays must be present. All waste products must be disposed of in a closed container/bin to be removed from the emergency service area (same day) to the workshop to ensure proper disposal. This waste must be treated as hazardous waste and must be disposed of at a registered hazardous waste handling facility, alternatively collected by a registered hazardous waste handling contractor. The safe disposal certificates must be filed for auditing purposes. ❖ If a diesel bowser is used on site, it must always be equipped with a drip tray. Drip trays must be used during each refuelling event. The nozzle of the bowser needs to rest in a sleeve to prevent dripping after refuelling. ❖ Site management must ensure drip trays are cleaned after each use. No dirty drip trays may be used on site. The dirty rags used to clean the drip trays must be disposed as hazardous waste into a designated bin at the workshop, where it is incorporated into the hazardous waste removal system.	Project related waste must be managed in accordance with the: ❖ NWA, 1998 ❖ NEM:WA, 2008	Throughout the site establishment-, operational and decommissioning phases.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			❖ Any effluents containing oil, grease or other industrial substances must be collected in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a registered facility. Proof of safe disposal must be filed for auditing purposes. ❖ An oil spill kit must be obtained, and the employees must be trained in the emergency procedures to follow when a spill occurs as well as the application of the spill kit. ❖ Spills must be cleaned up immediately, within two hours of occurrence, by removing the spillage together with the polluted soil and containing it in a designated hazardous waste bin until it is disposed of at a registered facility. Proof must be filed. ❖ Suitable covered receptacles must be always available and conveniently placed for the disposal of general waste. ❖ Non-biodegradable refuse such as glass bottles, plastic bags, metal scrap, etc., must be stored in a container with a closable lid at a collecting point to be collected at least once a month and disposed of at a registered landfill site. Specific precautions must be taken to prevent refuse from being dumped on or in the vicinity of the stockpile area. Proof of disposal must be available for auditing purposes.		

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			❖ Biodegradable refuse must be handled as indicated above. ❖ Re-use or recycling of waste products must be encouraged on site. ❖ No waste may be buried or burned on the site. ❖ Ablution facilities must be provided in the form of a chemical toilet/s. The chemical toilet must be anchored (to prevent blowing/falling over) and shall be serviced at least once a week for the duration of the activities by a registered liquid waste handling contractor. The safe disposal certificates must be filed for auditing purposes. ❖ The use of any temporary, chemical toilet facilities must not cause any pollution to water sources or pose a health hazard. In addition, no form of secondary pollution should arise from the disposal of refuse or sewage from the temporary, chemical toilets. Any pollution problems arising from the above are to be addressed immediately by the EA holder. ❖ When small volumes of wastewater are generated during the life of the project the following is applicable: ▪ Water containing waste must not be discharged into the natural environment. ▪ Measures to contain the wastewater and safely dispose thereof must be implemented. ❖ It is important that any significant spillage of chemicals, fuels etc. during		

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			the lifespan of the activities is reported to the DWS and other relevant authorities. ❖ Site management must implement the use of waste registers to keep record of the waste generated and removed from the stockpile area.		
❖ Processing, stockpiling, and transporting, of material.	Site Establishment, & Operational Phase.	±500 m²	**Storage/Handling of Hazardous Substances/Chemicals:** ❖ Chemical storage areas must be placed on level ground to prevent offsite migration of any spilled product. ❖ The floor of the storage area must be impermeable to prevent seepage of spilled products into the ground or ground water. ❖ Access to the chemicals/substances must be controlled and require prior notification of an appropriate staff member. ❖ The storage area must be out of the 1:100-year floodline or further than 100 m from the edge of a watercourse, whichever is greatest. ❖ A Hazardous Substances Register must be maintained, and Safety Data Sheets (SDS) must be kept current for all chemicals used on site. ❖ Any fuel/used oil tanks must have secondary containment in the form of an impermeable bund wall and base within which the tanks sit, raised above the floor, on plinths. The bund capacity must be sufficient to contain 110% of the tank's maximum capacity. The	Chemicals/hazardous substances must be stored in accordance with the: ❖ HSA,1973 ❖ NWA, 1998 ❖ NEM: WA, 2008	Throughout the site establishment-, and operational phases.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			distance and height of the bund wall relative to that of the tank must also be taken into consideration to ensure that any spillage does not result in hydrocarbons/other substances spouting beyond the confines of the bund. ❖ The site manager must establish a formal inspection routine to check all equipment in the bund area, as well as the bund area itself for malfunctions or leakages. The bund area must be inspected at least weekly, and any accumulated rainwater removed and handled as contaminated water. All valves and outlets must be checked to ensure that its intact and closed securely. ❖ The bund base must slope towards an oil sump of sufficient size. Contaminated water may not be allowed to mix with clean water and must be contained until it is collected by a registered hazardous waste handling contractor or disposed of at a registered hazardous waste handling facility. ❖ Drip trays must be used underneath all stationary equipment or vehicles. Used drip trays must be placed within a bunded area and not stored on bare soil. The wastewater originating from the cleaning of drip trays must be discarded into the oil sump.		

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
❖ Stripping and stockpiling of topsoil.	Site Establishment, & Operational Phase.	N/A	**Potential impact on the wetland system:** ❖ The post-mitigation buffer of 20 m is suggested for HGM 1. ❖ All 'High' sensitivity and wetland habitats must be avoided (unless authorised), all laydown and staff areas must be restricted to the 'Low' and 'Very Low' sensitivity areas; ❖ Adhere to the prescribed wetland buffers. Restrict all non-essential activities (e.g. cement mixing and equipment wetland machinery storage) to outside of wetlands and their prescribed buffers; ❖ Demarcate the avoidance areas; ❖ Dust suppression should be implemented. The residual and sediment laden water from the suppression activities should not be directly released into the wetland in order to prevent higher inputs of sediment into the systems; ❖ Areas other than the footprint areas and existing surface infrastructure areas must be declared as 'no-go' areas; ❖ Try to reduce the disturbance footprint and the unnecessary clearing of vegetation;	All water related matters must be managed in terms of the: ❖ NWA, 1998	Throughout the site establishment-, and operational phases.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			❖ Construct as far as possible during winter when runoff from storms are lowest, prioritise this for crossing sites. This will reduce impacts to wetlands due to soil poaching and vegetation trampling under peak saturation levels. Additionally, the risk of vehicles getting stuck and further degrading the vegetation integrity is lowest during this time; ❖ Prevent run-off by subsurface drainage channels. Any signs of erosion and scouring must be immediately addressed; ❖ Mixing of concrete must under no circumstances take place in any wetland or their buffers. Scrape the area where mixing and storage of sand and concrete occurred to clean once finished; ❖ Do not situate any of the construction material laydown areas within any wetland; ❖ No machinery should be allowed to be parked in any wetlands; ❖ Flatten and lightly till (no deeper than 30 cm) excavated / cleared areas to encourage vegetation establishment as soon as possible;		

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			❖ Promptly remove all alien and invasive plant species that may emerge during construction (i.e. weedy annuals and other alien forbs) must be removed; ❖ The use of herbicides is not recommended in or near wetlands (opt for mechanical removal); ❖ Appropriately stockpile topsoil cleared from the project area. This can be used for rehabilitation of the impacted wetlands; ❖ Clearly demarcate construction footprint, and limit all activities to within this area; ❖ Minimize unnecessary clearing of vegetation; ❖ Landscape and re-vegetate all denuded areas as soon as possible with indigenous vegetation; ❖ Re-instate topsoil and lightly till disturbance footprint; ❖ Install sandbags on downstream side of the footprint, where necessary, to trap sediment until the site has been constructed and vegetation has re-established; ❖ Make sure all excess consumables and building materials / rubble is removed		

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			from site and deposited at an appropriate waste facility; ❖ Appropriately contain any generator diesel storage tanks, machinery spills (e.g. accidental spills of hydrocarbons oils, diesel etc.) or construction materials on site (e.g. concrete) in such a way as to prevent them leaking and entering the north-western seep; ❖ Regularly maintain stormwater infrastructure, pipes, pumps and machinery to minimise the potential for leaks. Check for oil leaks, keep a tidy operation, install bins and promptly clean up any spills or litter; ❖ Maintain storm water run-off & Discharge Water Quality monitoring; ❖ No servicing of machines, vehicles and equipment on site and Storage of potential contaminants in bunded areas; ❖ Provide appropriate sanitation facilities during construction and service them regularly; ❖ Ensure that topsoil is appropriately stored and re-applied during trench backfilling; ❖ Make sure that the soil is backfilled and compacted to accepted geotechnical		

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			standards to avoid conduit formation along the trench; ❖ Conduct regular inspections along the stockpile to ensure the integrity of the facility; ❖ Speed limits must be put in place to reduce erosion. Soil surfaces must be wetted as necessary to reduce the dust generated by the project activities. Speed bumps and signs must be erected to enforce slow speed; and ❖ Waste management must be a priority and all waste must be collected and stored adequately. It is recommended that all waste be removed from site on a weekly basis to prevent rodents and pests entering the site.		
❖ Processing, stockpiling, and transporting of material.	Operational-, and Decommissioning Phase	19.9 ha	**Management of health and safety risks:** ❖ Workers must have access to the correct personal protection equipment (PPE) as required by law. ❖ Sanitary facilities must be located within 100 m from any point of work.	Health and safety aspects on site must be managed in accordance with the: ❖ OHSA, 1993 ❖ OHSAS 18001	Throughout the site establishment-,operational and decommissioning phases.
❖ Processing, stockpiling, and transporting of material.	Operational phase	±1 km	**Access road Management:** ❖ Storm water must be diverted around the access road to prevent erosion. ❖ Vehicular movement must be restricted to the existing access road and crisscrossing of tracks through undisturbed areas must be prohibited.	The access road must be managed in accordance with the: ❖ NRTA, 1996	Throughout the site establishment-, and operational phases.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			❖ Rutting and erosion of the access road caused as a direct result of the activities must be repaired by the EA holder. ❖ Overloading of the trucks must be prevented, and proof of load weights must be filed and be available for auditing by relevant officials. ❖ The speed of all equipment/vehicles must be restricted to 40 km/h on the access road.		
❖ Sloping and landscaping during rehabilitation phase.	Decommissioning Phase	19.9 ha	**Rehabilitation/landscaping of the area:** ❖ Coarse natural material used for the construction of ramps must be removed and dumped into the quarry as part of the rehabilitation of the excavation. ❖ Stockpiles must be removed during the decommissioning phase, the area ripped, and the topsoil returned to its original depth to provide a growth medium. ❖ No waste may be permitted to be deposited on the farm. ❖ The area must be fertilized if necessary to allow vegetation to establish rapidly. The site shall be seeded with a local or adapted indigenous seed mix to propagate the locally or regionally occurring flora. ❖ On completion of operations, all structures or objects shall be removed from the site. ❖ On completion of operations, the surface of all plant-, stockpiling-, and/or office areas, if compacted due to	Rehabilitation of the area must be in accordance with the: ❖ CARA, 1983 ❖ NEM:BA, 2004 ❖ NEMA, 1998	Throughout the decommissioning phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			hauling and dumping operations, shall be scarified to a depth of at least 200 mm and graded to an even surface condition. Topsoil needs to be returned to its original depth over the area.		

(APPENDIX 4 SECTION 1(1)(e) & (f))

Impact Management Outcomes

Impact Management Actions

Table 2: Impact Management Actions and Outcomes.

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
❖ Demarcation of site with visible beacons.	❖ No impact could be identified other than the beacons being outside the boundaries of the approved area.	N/A	Site Establishment phase	Control through management and monitoring.	Operations are only allowed within the boundaries of the approved area. ❖ NEMA, 1998
❖ Site establishment	❖ Loss of agricultural land for duration of the project.	The impact may affect the agricultural opportunities of the property.	Site Establishment & Operational Phase	Should the proposed project be approved, the operation will temporarily interrupt the agricultural activities of the footprint area, only to be reversed upon the closure of the site. The impact could be controlled through progressive rehabilitation.	Use of agricultural land must be managed in accordance with the: ❖ CARA, 1983
❖ Site establishment ❖ Stripping and stockpiling of topsoil.	❖ Visual intrusion as a result of site establishment. ❖ Visual intrusion caused by activities.	The visual impact may affect the aesthetics of the landscape.	Site Establishment & Operational Phase	<u>Control:</u> Implementing proper housekeeping.	Management of the activities must be in accordance with the: ❖ NEMA, 1998
❖ Site establishment ❖ Cumulative impact.	❖ Potential impact on vegetation and/or protected plant species. ❖ Impact the broad-scale ecological processes; ❖ Transformation of intact habitat would contribute to	This will impact on the biodiversity of the receiving environment.	Site Establishment phase	<u>Control & Stop:</u> Implementing good management practices and adhering to the recommendations of the botanist.	Natural vegetated areas must be managed in accordance with the: ❖ NEM:BA, 2004

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
	the fragmentation of the landscape and would potentially disrupt the connectivity of the landscape for fauna, avifauna, and flora and impair their ability to respond to environmental fluctuations.				
❖ Site establishment ❖ Stripping and stockpiling of topsoil. ❖ Cumulative impact.	❖ Potential impact on fauna within the footprint. ❖ Potential impact on local fauna due to distrubance and loss of available habitat. ❖ Impact the broad-scale ecological processes; ❖ Transformation of intact habitat would contribute to the fragmentation of the landscape and would potentially disrupt the connectivity of the landscape for fauna, avifauna, and flora and impair their ability to respond to environmental fluctuations	This will impact on the biodiversity of the receiving environment.	Site Establishment & Operational Phase	<u>Control & Stop:</u> Implementing good management practices.	Site specific fauna must be managed in accordance with the: ❖ NEM:BA, 2004
❖ Stripping and stockpiling of topsoil. ❖ Sloping and landscaping during rehabilitation.	❖ Loss of stockpiled topsoil. ❖ Potential erosion of denuded areas. ❖ Erosion of returned topsoil after rehabilitation.	The loss/contamination of topsoil and erosion of the footprint will affect the rehabilitation of the area upon closure of the site.	Site Establishment-, Operational and Decommissioning Phase	<u>Control & Remedy:</u> Proper housekeeping and storm water management.	Topsoil stripping must be managed in accordance with the: ❖ CARA, 1983 ❖ NEM:BA, 2004

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
❖ Stripping and stockpiling of topsoil. ❖ Processing, stockpiling, and transporting of material.	❖ Dust nuisance because of the disturbance of soil. ❖ Dust nuisance generated at the processing plant.	Increased dust generation will impact on the air quality of the receiving environment.	Site Establishment-, Operational-, and Decommissioning Phase	Control: Dust suppression methods and proper housekeeping.	Dust generation on site must be managed in accordance with the: ❖ NEM:AQA, 2004 Regulation 6(1) ❖ National Dust Control Regulations, GN No R827 ❖ ASTM D1739 (SANS 1137:2012)
❖ Stripping and stockpiling of topsoil. ❖ Processing, stockpiling, and transporting of material.	❖ Noise nuisance generated by earthmoving machinery. ❖ Noise nuisance stemming from operation of the processing plant.	Should noise levels become excessive it may have an impact on the noise ambiance of the receiving environment.	Site Establishment-, Operational-, and Decommissioning Phase	Control: Noise suppression methods and proper housekeeping.	Noise generation on site must be managed in accordance with the: ❖ NEM:AQA, 2004 Regulation 6(1) ❖ NRTA, 1996
❖ Stripping and stockpiling of topsoil. ❖ Processing, stockpiling, and transporting of material. ❖ Sloping and landscaping during rehabilitation phase.	❖ Infestation of the topsoil heaps and stockpile area with weeds or invader plant species. ❖ Infestation of the area with invader plant species. ❖ Infestation of the reinstated areas by weeds and invader plant species.	Infestation of the footprint by invader plant species may affect the biodiversity of the receiving environment.	Site Establishment-, Operational, and Decommissioning Phase	Control & Remedy: Implementation of an invasive plant species management plan.	Weeds and invader plants on site must be managed in accordance with the: ❖ CARA, 1983 ❖ NEM:BA, 2004 ❖ Invader Plants Species Management Plan (Appendix J)
❖ Stripping and stockpiling of topsoil. ❖ Processing, stockpiling, and transporting of material. ❖ Sloping and landscaping during rehabilitation phase.	❖ Potential contamination of footprint area and surface runoff because of hydrocarbon spillages. ❖ Potential contamination of environment due to improper waste management.	Contamination of the footprint area will negatively impact the soil, surface runoff and potentially the groundwater. It will	Site Establishment-, Operational-, and Decommissioning Phase	Control & Remedy: Proper housekeeping and implementation of an emergency response plan and waste management plan.	Project related waste must be managed in accordance with the: ❖ NWA, 1998 ❖ NEM:WA, 2008

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
	❖ Potential impact associated with litter/waste left at the area.	also incur additional costs to the EA holder.			
❖ Site establishment	❖ Potential impact on the wetland system.	This could impact the hydrology of the receiving environment.	Site Establishment, & Operational Phase.	Control: Implementing a SWMP.	Any water related matters must be managed in accordance with the: ❖ NWA, 1998
❖ Processing, stockpiling, and transporting of material.	❖ Overloading of trucks impacting road infrastructure. ❖	Collapse of the internal road infrastructure will affect the landowner negatively. If the project negatively affects public traffic, it may incur additional costs and complaints from the public.	Operational phase	Control & Remedy: Maintaining the access road for the duration of the operational phase, as well as leabing it in a representative or better condition than before.	The access road must be managed in accordance with the: ❖ NRTA, 1996
❖ Sloping and landscaping when quarry and stockpile area operate.	❖ Return of the stockpile area to landscape feature upon closure	Any infrastructure that remains on site will have to be managed by either the Applicant or landowner.	Decommissioning Phase	Modify & Control: Implement T1 instead of T2 to simplify rehabilitation and prevent any structures remaining on site.	Infrastructure must be managed in accordance with the: ❖ NEMA, 1998

(APPENDIX 4 SECTION 1(1)(g) – (k))

Mechanisms for monitoring compliance with and performance assessment against the environmental management programme and reporting thereon, including
Monitoring of Impact Management Actions
Monitoring and reporting frequency
Responsible persons
Time period for implementing impact management actions
Mechanisms for monitoring compliance

Table 3: Mechanisms for monitoring compliance with and performance assessment against the EMPR and reporting thereon.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
Demarcation of site with visible beacons	Maintenance of beacons	❖ Visible beacons need to be placed at the corners of the approved area.	Responsibility: ❖ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ❖ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. Role: ❖ Ensure beacons are in place throughout the life of the site.	Applicable throughout site establishment-, operational-, and decommissioning phases. ❖ Daily compliance monitoring by site management. ❖ Annual compliance monitoring of site by an Environmental Control Officer.
❖ Site establishment	Land Use: ❖ Loss of agricultural land for duration of the project.	❖ Project Plan	Responsibility: ❖ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.	Applicable throughout site establishment-, operational-, and decommissioning phases.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
			❖ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. <u>Role:</u> ❖ If needed, sign rehabilitated areas back to agricultural use once the cover crop stabilised.	❖ Daily compliance monitoring by site management. ❖ Annual compliance monitoring of site by an Environmental Control Officer.
❖ Site establishment ❖ Stripping and stockpiling of topsoil.	<u>Visual Characteristics:</u> ❖ Visual intrusion because of site establishment. ❖ Visual intrusion caused by activities.	❖ Minimize the visual impact of the activity on the surrounding environment through proper site management and implementing good housekeeping practices.	<u>Responsibility:</u> ❖ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ❖ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. <u>Role:</u> ❖ Ensure that the site have a neat appearance and is always kept in good condition. ❖ Store equipment in a dedicated area when not in use. ❖ Limit vegetation removal, and only strip topsoil immediately prior to the mining/use of a specific area. ❖ Contain activities to the approved area. ❖ Upon closure, rehabilitate the site to ensure that the visual impact on the aesthetic value of the area is reduced to the minimum.	Applicable throughout site establishment-, operational-, and decommissioning phases. ❖ Daily compliance monitoring by site management. ❖ Annual compliance monitoring of site by an Environmental Control Officer.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
❖ Site establishment ❖ Cumulative Impacts	<u>Terrestrial Biodiversity, Conservation Areas and Groundcover:</u> ❖ Potential impact on vegetation and/or protected plant species. ❖ Impact the broad-scale ecological processes; ❖ Transformation of intact habitat would contribute to the fragmentation of the landscape and would potentially disrupt the connectivity of the landscape for fauna, avifauna, and flora and impair their ability to respond to environmental fluctuations.	❖ Visible beacons indicating the boundary of the stockpile area. ❖ Cover crop to seed reinstated areas upon closure.	<u>Responsibility:</u> ❖ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ❖ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. <u>Role:</u> ❖ Clearly demarcate the site boundaries and contain all operations to the approved area. Declare the area outside the boundaries a no-go area and educate all staff accordingly. ❖ Arrange a pre-commencement environmental induction for all staff on site to ensure that basic environmental principles are adhered to. This must include awareness of no littering, appropriate handling of pollution and chemical spills, avoiding fire hazards, minimising wildlife interactions, remaining within demarcated construction areas, etc. ❖ Do not burn cleared vegetation, but rather mulch and stockpiled it. Ideally cover the heaps with stockpiled topsoil and retain the material for future site rehabilitation. Donate the wood to the landowner and/or community. ❖ Arrange that the ECO provide supervision and oversight of vegetation clearing	Applicable throughout site establishment-, operational-, and decommissioning phases. ❖ Daily compliance monitoring by site management. ❖ Annual compliance monitoring of site by an Environmental Control Officer.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
			activities and other activities which may cause damage to the environment, especially during the site establishment phase, when most of the vegetation clearing is taking place. ❖ Ensure all vehicles remain on demarcated roads and prevent unnecessary driving in the veld outside these areas. ❖ Do not translocated, uprooted, or disturbed plants for rehabilitation or other purposes without express permission from the ECO and without the relevant permits. ❖ Do not allow fires on-site. ❖ Provide spoil heaps and topsoil stockpiles with a vegetation cover of indigenous grasses.	
❖ Site establishment ❖ Stripping and stockpiling of topsoil. ❖ Cumulative impacts.	<u>Fauna:</u> ❖ Potential impact on fauna within the footprint. ❖ Cumulative impact on fauna when quarry and stockpile area operate.	❖ Toolbox talks to educate employees how to handle fauna that enter the work areas.	<u>Responsibility:</u> ❖ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ❖ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. <u>Role:</u> ❖ Ensure no fauna is caught, killed, harmed, sold, or played with. ❖ The ECO or other suitably qualified person must remove any fauna directly threatened by the operational activities to a safe location.	Applicable throughout site establishment-, and operational phases. ❖ Daily compliance monitoring by site management. ❖ Annual compliance monitoring of site by an Environmental Control Officer.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
			❖ Arrange that all personnel undergo environmental induction regarding fauna management and in particular awareness about not harming or collecting species such as snakes, tortoises and owls which are often persecuted out of superstition. Instruct workers to report any animals that may be trapped in the working area. ❖ Ensure no snares are set or nests raided for eggs or young. ❖ Ensure all vehicles adhere to a low-speed limit (40 km/h is recommended) to avoid collisions with susceptible species such as snakes and tortoises. ❖ Prevent litter, food or other foreign material thrown or left around the site. Keep such items in the site vehicles and daily removed it to the site camp.	
❖ Site establishment ❖ Stripping and stockpiling of topsoil.	<u>Cultural and Heritage Environment.</u>	❖ Contact number of an archaeologist & palaeontologist that can be contacted when a discovery is made on site.	<u>Responsibility:</u> ❖ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ❖ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. <u>Role:</u> ❖ Confine all activities to the development footprint.	Applicable throughout site establishment-, and operational phases. ❖ Daily compliance monitoring by site management. ❖ Annual compliance monitoring of site by an Environmental Control Officer.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
			❖ Implement the following change find procedure when discoveries are made on site: ▪ If during the pre-construction phase, construction, operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage site, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager. ▪ It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find and confirm the extent of the work stoppage in that area. ▪ The senior on-site Manager will inform the ECO of the chance find and its immediate impact on operations. The ECO will then contact a professional archaeologist for an assessment of the finds who will notify the ECPHRA. ▪ Work may only continue once the go-ahead was issued by ECPHRA ▪ The Eastern Cape Provincial Heritage Resources Authority must be contacted if any heritage objects are	

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
			identified during earth-moving activities and all development should cease until further notice. ▪ No structures older than sixty years or parts thereof are allowed to be demolished, altered, or extended without a permit from the Eastern Cape Provincial Heritage Resources Authority . ▪ Under no circumstances may any heritage material be destroyed, inundated, collected, or removed from the site unless under the direction of the SAHRA and ECPHRA and a heritage specialist. ▪ Should any remain, that could potentially be human remains be found on-site, the South African Police Service (SAPS) must be contacted, and the Eastern Cape Provincial Heritage Resources Authority must be notified immediately. No SAPS official may disturb or exhume such remains, without the necessary permission from the Eastern Cape Provincial Heritage Resources Authority . ▪ No activities are allowed within 50 m of a site that contains rock art. ▪ Sources of all-natural materials (including topsoil, sands, natural gravels, crushed stone, asphalt, etc.) must be obtained in a sustainable	

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
			manner and in compliance with the heritage and environmental (NEMA) legislation.	
❖ Stripping and stockpiling of topsoil. ❖ Sloping and landscaping during rehabilitation.	<u>Geology and Soil:</u> ❖ Loss of stockpiled topsoil.	❖ Earthmoving equipment to strip and stockpile topsoil. ❖ Cover crop to be established on topsoil heaps. ❖ Erosion control infrastructure (when needed).	<u>Responsibility:</u> ❖ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ❖ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. <u>Role:</u> ❖ Strip and stockpile the upper 300 mm of the soil before mining. ❖ Carefully manage and conserve the topsoil throughout the stockpiling and rehabilitation process. ❖ Ensure topsoil stripping, stockpiling, and re-spreading is done in a systematic way. Plan the project in such a way that topsoil is stockpiled for the minimum possible time. ❖ Place the topsoil on a levelled area, within the earmarked footprint. Do not stockpile topsoil in undisturbed areas. ❖ Protect topsoil stockpiles against losses by water- and wind erosion. Position stockpiles so it is not vulnerable to erosion by wind and water. The establishment of	Applicable throughout site establishment-, operational-, and decommissioning phases. ❖ Daily compliance monitoring by site management. ❖ Annual compliance monitoring of site by an Environmental Control Officer.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
			plants (weeds or a cover crop) on the stockpiles will help to prevent erosion. ❖ Ensure that topsoil heaps do not exceed 2 m to preserve micro-organisms within the topsoil, which can be lost due to compaction and lack of oxygen. ❖ Keep temporary topsoil stockpiles free of invasive plant species. ❖ Vegetate the topsoil heaps to be stored longer than 6 months with an indigenous grass seed mix if vegetation does not naturally germinate within the first growth season. ❖ Divert storm- and runoff water around the stockpile area to prevent erosion. ❖ Spread the topsoil evenly, to a depth of 300 mm, over the rehabilitated area upon closure of the site. ❖ Strive to re-instate topsoil at a time of the year when vegetation cover can be established as quickly as possible afterwards, to that erosion of returned topsoil is minimized. The best time of year is at the end of the rainy season. ❖ Plant a cover crop immediately after spreading topsoil to stabilise the soil and protect it from erosion. Fertilise the cover crop for optimum production. Rehabilitation extends until the first cover crop is well established.	

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
			❖ Control run-off water with temporary banks, where necessary, to prevent accumulation of run-off causing down-slope erosion. ❖ Monitor the rehabilitated area for erosion, and appropriately stabilize if erosion do occur, for at least 12 months after reinstatement.	
❖ Stripping and stockpiling of topsoil. ❖ Processing, stockpiling, and transporting of material.	<u>Air and Noise Quality:</u> ❖ Dust nuisance because of the disturbance of soil. ❖ Dust nuisance generated at the processing plant. .	❖ Dust suppression equipment such as a water car, water dispenser and sprayers on the crusher plant. ❖ Signage that clearly reduce the speed on the access road.	<u>Responsibility:</u> ❖ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ❖ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. <u>Role:</u> ❖ Control the liberation of dust into the surrounding environment using; inter alia, water spraying and/or other dust-allaying agents. ❖ Ensure continuous assessment of all dust suppression equipment to confirm its effectiveness in addressing dust suppression. ❖ Limit speed on the roads to 40 km/h to prevent the generation of excess dust. ❖ Minimise areas devoid of vegetation, and only remove vegetation immediately prior to use.	Applicable throughout site establishment-, and operational phases. ❖ Daily compliance monitoring by site management. ❖ Annual compliance monitoring of site by an Environmental Control Officer.

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			❖ Install water sprayers at the crusher plant to alleviate dust generation from the conveyor belts. ❖ Minimise fines, blowing from the drop end of the crusher plant by attaching strips of used conveyor belts to the conveyor's end. ❖ Weekly remove compacted dust from the crusher plant to eliminate the dust source. ❖ Flatten loads to prevent spillage during transportation on public roads. ❖ Consider weather conditions upon commencement of daily operations. Limit operations during very windy periods to reduce airborne dust and resulting impacts. ❖ Ensure dust generating activities comply with the National Dust Control Regulations, GN No R827 promulgated in terms of NEM: AQA, 2004 and ASTM D1739 (SANS 1137:2012).	
❖ Stripping and stockpiling of topsoil. ❖ Processing, stockpiling, and transporting of material.	<u>Air and Noise Quality:</u> ❖ Noise nuisance generated by earthmoving machinery. ❖ Noise nuisance stemming from operation of the processing plant. .	❖ Signage indicating noise zones. ❖ Silencers fitted to all project related vehicles, and the use of vehicles that are in road worthy condition in terms of the National Road Traffic Act, 1996.	<u>Responsibility:</u> ❖ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ❖ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. <u>Role:</u> ❖ Ensure that employees and staff conduct themselves in an acceptable manner while on site.	Applicable throughout site establishment-, and operational phases. ❖ Daily compliance monitoring by site management. ❖ Annual compliance monitoring of site by an Environmental Control Officer.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
		❖ Noise mufflers fitted to generators.	❖ No loud music may be permitted at the site. ❖ Ensure that all project related vehicles are equipped with silencers and maintained in a road worthy condition in terms of the National Road Traffic Act, 1996. ❖ Minimise the noise caused by generators. Maintain and equip all generators with sound mufflers, and if possible, point the generators away from the neighbouring land users. Place all generators on a level area/footing to minimise vibration noise. ❖ Implement best practice measures to minimise potential noise impacts.	
❖ Stripping and stockpiling of topsoil. ❖ Processing, stockpiling, and transporting of material. ❖ Sloping and landscaping during rehabilitation phase.	<u>Terrestrial biodiversity, conservation areas and groundcover:</u> ❖ Infestation of the topsoil heaps and stockpile area with weeds or invader plant species. ❖ Infestation of the area with invader plant species. ❖ Infestation of the reinstated areas by weeds and invader plant species.	❖ Designated team to cut or pull out invasive plant species that germinated on site. ❖ Herbicide application equipment.	<u>Responsibility:</u> ❖ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ❖ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. <u>Role:</u> ❖ Implement an invasive plant species management plan to control all invasive plant species on site in terms of NEM:BA, 2004 and CARA, 1983. Do weed/alien ongoing clearing on throughout the life of the activities.	Applicable throughout site establishment-, operational-, and decommissioning phases. ❖ Daily compliance monitoring by site management. ❖ Annual compliance monitoring of site by an Environmental Control Officer.

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			❖ Do not allow planting or importing of any alien species to the site for landscaping, rehabilitation, or any other purpose. ❖ Keep all stockpiles free of invasive plant species. ❖ Control declared invader or exotic species on the rehabilitated areas.	
❖ Stripping and stockpiling of topsoil. ❖ Sloping and landscaping during rehabilitation.	<u>Hydrology:</u> ❖ Potential erosion of denuded areas. ❖ Erosion of returned topsoil after rehabilitation.	❖ Storm water management structures such as berms to direct storm- and runoff water around the stockpiled topsoil area.	<u>Responsibility:</u> ❖ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ❖ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. <u>Role:</u> ❖ Develop and implement a stormwater management plan for the duration of the activities. ❖ Limit clearing of vegetation to the proposed stockpile footprint. Ensure no clearing takes place outside the minimum required footprint. ❖ Divert stormwater around the topsoil heaps and stockpile areas to prevent erosion. ❖ Protect stockpiles from erosion and store it on flat areas surrounded by appropriate berms where possible. ❖ Control the outflow of run-off water from the stockpile area to prevent down-slope erosion, by constructing temporary banks	Applicable throughout site establishment-, operational-, and decommissioning phases. ❖ Daily compliance monitoring by site management. ❖ Annual compliance monitoring of site by an Environmental Control Officer.

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			and ditches that will direct run-off water (if needed). These must be in place at any points where overflow from the stockpile area may occur. ❖ Regularly monitor roads and other disturbed areas within the project for erosion and ensure problem areas receive follow-up monitoring to assess the success of the remediation. ❖ Rectify erosion problems because of the proposed activities immediately (within 48 hours) and monitored thereafter to ensure that it does not re-occur. ❖ Use silt/sediment traps/barriers where there is a danger of topsoil or material stockpiles eroding and entering downstream drainage lines and other sensitive areas. Regularly maintain and clear the sediment/silt barriers to ensure effective drainage of the areas. ❖ Conduct activity in terms of the Best Practice Guidelines for small-scale mining as developed by DWS. ❖ Contain all fuels and chemicals stored or used on site in fit for purpose containers and store within designated storage areas. Ensure the designated storage areas are situated on an impermeable surface with a perimeter bund and a drainage sump. Size the volume of the bund and sump to contain at least 110% of the total volume of the fuel and chemicals being stored within the	

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			designated storage area. Ensure that the storage areas have a roof to prevent inflow of rainwater, which would require the sump to be emptied more frequently.	
❖ Stripping and stockpiling of topsoil. ❖ Processing, stockpiling, and transporting of material. ❖ Sloping and landscaping during rehabilitation phase.	<u>General:</u> ❖ Potential contamination of footprint area and surface runoff because of hydrocarbon spillages. ❖ Potential contamination of environment due to improper waste management. ❖ Potential impact associated with litter/waste left at the area.	❖ Oil spill kit. ❖ Sealed drip trays. ❖ Formal waste disposal system with waste registers.	<u>Responsibility:</u> ❖ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ❖ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. <u>Role:</u> ❖ Ensure regular vehicle maintenance, repairs and services only take place at the workshop and service area. Ensure drip trays are present if emergency repairs are needed on equipment not able to move to the workshop. Dispose all waste products in a closed container/bin to be removed from the emergency service area (same day) to the workshop to ensure proper disposal. Treat this as hazardous waste and dispose of it at a registered hazardous waste handling facility, alternatively arrange collection by a registered hazardous waste handling contractor. File safe disposal certificates for auditing purposes. ❖ If a diesel bowser is used on site, always equip it with a drip tray. Use drip trays	Applicable throughout site establishment-, operational-, and decommissioning phases. ❖ Daily compliance monitoring by site management. ❖ Annual compliance monitoring of site by an Environmental Control Officer.

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			during each refuelling event. The nozzle of the bowser needs to rest in a sleeve to prevent dripping after refuelling. ❖ Ensure drip trays are cleaned after each use. Do not allow dirty drip trays to be used on site. Dispose of dirty rags used to clean the drip trays as hazardous waste into a designated bin at the workshop, where it is incorporated into the hazardous waste removal system. ❖ Collect any effluents containing oil, grease or other industrial substances in a suitable receptacle and remove it from the site, either for resale or for appropriate disposal at a registered facility. File proof. ❖ Obtain an oil spill kit and train the employees in the emergency procedures to follow when a spill occurs as well as the application of the spill kit. ❖ Clean spills immediately, within two hours of occurrence, by removing the spillage together with the polluted soil and containing it in a designated hazardous waste bin until it is disposed of at a registered facility. File proof. ❖ Ensure suitable covered receptacles are always available and conveniently placed for the disposal of general waste. ❖ Store non-biodegradable refuse such as glass bottles, plastic bags, metal scrap, etc., in a container with a closable lid at a collecting point to be collected at least once	

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			a month and disposed of at a recognized landfill site. Take specific precautions to prevent refuse from being dumped on or in the vicinity of the stockpile area. File proof of disposal. ❖ Handle biodegradable refuse as indicated above. ❖ Encourage re-use or recycling of waste products. ❖ Do not bury or burn waste on the site. ❖ Provide ablution facilities in the form of a chemical toilet/s. Anchor the chemical toilet (to prevent blowing/falling over) and arrange that it is serviced at least once a week for the duration of the activities by a registered liquid waste handling contractor. File the safe disposal certificates. ❖ Ensure that the use of any temporary, chemical toilet facilities do not cause any pollution to water sources or pose a health hazard. In addition, ensure that no form of secondary pollution arise from the disposal of refuse or sewage from the temporary, chemical toilets. Address any pollution problems arising from the above immediately. ❖ Do not discharge water containing waste into the natural environment. ❖ Implement measures to contain the wastewater and safely dispose thereof. ❖ Report any significant spillage of chemicals, fuels etc. during the lifespan of	

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			the activities to the DWS and other relevant authorities. ❖ Implement the use of waste registers to keep record of the waste generated and removed from the stockpile area.	
❖ Processing, stockpiling, and transporting, of material.	<u>General:</u> ❖ Storage/handling of hazardous substance/chemicals.	❖ Storage areas with impermeable surfaces and bund walls that can hold 110% of the product amount stored in it. ❖ Hazardous Substances Register and Safety Data Sheets. ❖ Drip trays. ❖ Inspection programme. ❖ Operational oil sump.	<u>Responsibility:</u> ❖ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ❖ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. <u>Role:</u> ❖ Place chemical storage areas on level ground to prevent offsite migration of any spilled product. ❖ Ensure that the floor of the storage area is impermeable to prevent seepage of spilled products into the ground or ground water. ❖ Control access to the chemicals/substances and implement a notification system of an appropriate staff member. ❖ Ensure that the storage area is out of the 1:100-year flood line or further than 100 m from the edge of a watercourse, whichever is greatest. ❖ Maintain a Hazardous Substances Register and keep Safety Data Sheets (SDS) current for all chemicals used on site.	Applicable throughout site establishment-, and operational phases ❖ Daily compliance monitoring by site management. ❖ Annual compliance monitoring of site by an Environmental Control Officer.

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			❖ Ensure any fuel/used oil tanks have secondary containment in the form of an impermeable bund wall and base within which the tanks sit, raised above the floor, on plinths. Check that the bund capacity is sufficient to contain 110% of the tank's maximum capacity. Ensure that the distance and height of the bund wall relative to that of the tank is taken into consideration to ensure that any spillage does not result in hydrocarbons/other substances spouting 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. Inspect the bund area at least weekly and remove any accumulated rainwater and hand it as contaminated water. Check all valves and outlets to ensure that its intact and closed securely. ❖ Ensure that the bund base slope towards an oil sump of sufficient size. Do not allow contaminated water to mix with clean water and contain it until it is collected by a registered hazardous waste handling contractor or disposed of at a registered hazardous waste handling facility. ❖ Use drip trays under all stationary equipment or vehicles. Place used drip trays within a bunded area and do not store on the bare soil. Discard the wastewater	

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			originating from the cleaning of drip trays into the oil sump.	
❖ Stripping and stockpiling of topsoil.	<u>Hydrology:</u> ❖ Potential impact on the wetland system.	❖ Stormwater Management Plan.	<u>Responsibility:</u> ❖ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ❖ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. <u>Role:</u> ❖ The post-mitigation buffer of 20 m is suggested for HGM 1. ❖ All 'High' sensitivity and wetland habitats must be avoided (unless authorised), all laydown and staff areas must be restricted to the 'Low' and 'Very Low' sensitivity areas; ❖ Adhere to the prescribed wetland buffers. Restrict all non-essential activities (e.g. cement mixing and equipment wetland machinery storage) to outside of wetlands and their prescribed buffers; ❖ Demarcate the avoidance areas; ❖ Dust suppression should be implemented. The residual and sediment laden water from the suppression activities should not be directly released into the wetland in order to prevent higher inputs of sediment into the systems;	Applicable throughout site establishment-, and operational phases. ❖ Daily compliance monitoring by site management. ❖ Annual compliance monitoring of site by an Environmental Control Officer.

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			❖ Areas other than the footprint areas and existing surface infrastructure areas must be declared as 'no-go' areas; ❖ Try to reduce the disturbance footprint and the unnecessary clearing of vegetation; ❖ Construct as far as possible during winter when runoff from storms are lowest, prioritise this for crossing sites. This will reduce impacts to wetlands due to soil poaching and vegetation trampling under peak saturation levels. Additionally, the risk of vehicles getting stuck and further degrading the vegetation integrity is lowest during this time; ❖ Prevent run-off by subsurface drainage channels. Any signs of erosion and scouring must be immediately addressed; ❖ Mixing of concrete must under no circumstances take place in any wetland or their buffers. Scrape the area where mixing and storage of sand and concrete occurred to clean once finished; ❖ Do not situate any of the construction material laydown areas within any wetland; ❖ No machinery should be allowed to be parked in any wetlands; ❖ Flatten and lightly till (no deeper than 30 cm) excavated / cleared areas to encourage vegetation establishment as soon as possible; ❖ Promptly remove all alien and invasive plant species that may emerge during	

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			construction (i.e. weedy annuals and other alien forbs) must be removed; ❖ The use of herbicides is not recommended in or near wetlands (opt for mechanical removal); ❖ Appropriately stockpile topsoil cleared from the project area. This can be used for rehabilitation of the impacted wetlands; ❖ Clearly demarcate construction footprint, and limit all activities to within this area; ❖ Minimize unnecessary clearing of vegetation; ❖ Landscape and re-vegetate all denuded areas as soon as possible with indigenous vegetation; ❖ Re-instate topsoil and lightly till disturbance footprint; ❖ Install sandbags on downstream side of the footprint, where necessary, to trap sediment until the site has been constructed and vegetation has re-established; ❖ Make sure all excess consumables and building materials / rubble is removed from site and deposited at an appropriate waste facility; ❖ Appropriately contain any generator diesel storage tanks, machinery spills (e.g. accidental spills of hydrocarbons oils, diesel etc.) or construction materials on site (e.g. concrete) in such a way as to prevent	

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			them leaking and entering the north-western seep; ❖ Regularly maintain stormwater infrastructure, pipes, pumps and machinery to minimise the potential for leaks. Check for oil leaks, keep a tidy operation, install bins and promptly clean up any spills or litter; ❖ Maintain storm water run-off & Discharge Water Quality monitoring; ❖ No servicing of machines, vehicles and equipment on site and Storage of potential contaminants in bunded areas; ❖ Provide appropriate sanitation facilities during construction and service them regularly; ❖ Ensure that topsoil is appropriately stored and re-applied during trench backfilling; ❖ Make sure that the soil is backfilled and compacted to accepted geotechnical standards to avoid conduit formation along the trench; ❖ Conduct regular inspections along the stockpile to ensure the integrity of the facility; ❖ Speed limits must be put in place to reduce erosion. Soil surfaces must be wetted as necessary to reduce the dust generated by the project activities. Speed bumps and signs must be erected to enforce slow speed; and	

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			❖ Waste management must be a priority and all waste must be collected and stored adequately. It is recommended that all waste be removed from site on a weekly basis to prevent rodents and pests entering the site.	
❖ Processing, stockpiling, and transporting of material.	<u>Health and Safety</u>	❖ Stocked first aid box. ❖ Level 1 certified first aider.	<u>Responsibility:</u> ❖ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ❖ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. <u>Role:</u> ❖ Ensure that workers have access to the correct PPE as required by law. ❖ Locate sanitary facilities within 100 m from any point of work.	Applicable throughout operational-, and decommissioning phases. ❖ Daily compliance monitoring by site management. ❖ Annual compliance monitoring of site by an Environmental Control Officer.
❖ Processing, stockpiling and transporting of material.	<u>Existing Infrastructure:</u> ❖ Overloading of trucks impacting road infrastructure.	❖ Grader to restore the road surface when needed.	<u>Responsibility:</u> ❖ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ❖ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. <u>Role:</u>	Applicable throughout operational phase. ❖ Daily compliance monitoring by site management. ❖ Annual compliance monitoring of site by an

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			❖ Divert storm water around the access road to prevent erosion. ❖ Restrict vehicular movement to the existing access road to prevent crisscrossing of tracks through undisturbed areas. ❖ Repair rutting and erosion of the access road caused as a direct result of the proposed activities. ❖ Prevent the overloading of the trucks and file proof of load weights for auditing by relevant officials. ❖ Restrict the speed of all equipment/vehicles to 40 km/h on the access road.	Environmental Control Officer.
❖ Sloping and landscaping during rehabilitation.	<u>Topography:</u> ❖ Landscaping of stockpile area. ❖ Decommissioning and removal of the site infrastructure.	❖ Earthmoving equipment to reinstate areas that are no longer needed. ❖ Cover crop to be established on reinstated area. ❖ Erosion control infrastructure (when needed).	<u>Responsibility:</u> ❖ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ❖ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. <u>Role:</u> ❖ Remove and dump coarse natural material used for the construction of ramps into the quarry as part of the rehabilitation of the excavation. ❖ Remove stockpiles during the decommissioning phase, rip the area and return the topsoil to its original depth to provide a growth medium.	Applicable throughout decommissioning phase. ❖ Daily compliance monitoring by site management. ❖ Annual compliance monitoring of site by an Environmental Control Officer.

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			❖ Do not permit any waste to be deposited on the farm. ❖ Fertilize the area if necessary to allow vegetation to establish rapidly. Seed the site with a local or adapted indigenous seed mix to propagate the locally or regionally occurring flora. ❖ On completion of operations, remove all structures or objects from site. ❖ On completion of operations, scarify the surface of all plant-, stockpiling-, and/or office areas, if compacted due to hauling and dumping operations, to a depth of at least 200 mm and graded it to an even surface condition. Return the topsoil to its original depth over the area.	

(APPENDIX 4 SECTION 1(1)(l))

Indicate the frequency of the submission of the performance assessment/environmental audit report.

The Environmental Audit Report in accordance with Appendix 7 as prescribed in Regulation 34 of the EIA Regulations, 2014 (as amended) will annually be submitted to DEDEAT for compliance monitoring purposes or in accordance with the period stipulated by the Environmental Authorisation.

(APPENDIX 4 SECTION 1(1)(m))

Environmental Awareness Plan

i) Way the applicant intends to inform his or her employees of any environmental risk which may result from their work.

Once the Applicant received the EA and may commence with the proposed activity, a copy of the Environmental Management Programme will be handed to the site manager for his perusal. Issues such as the boundaries, fire principals and hazardous waste handling will be discussed.

An induction meeting will be held with all the site workers to inform them of the Basic Rules of Conduct regarding the environment.

ii) Way risk will be dealt with to avoid pollution or the degradation of the environment.

The operations manager must ensure that he/she understands the EMPR document and its requirement and commitments before any activities take place. An Environmental Control Officer needs to check compliance of the activity to the management programmes described in the EMPR.

The following list represents the basic steps towards environmental awareness, which all participants in this project must consider whilst carrying out their tasks.

- **Site Management:**
  - Stay within boundaries of site – do not enter adjacent properties.
  - Keep tools and material properly stored.
  - Smoke only in designated areas.
  - Use toilets provided – report full or leaking toilets.
- **Water Management and Erosion:**

- Check that rainwater flows around work areas and are not contaminated.
- Report any erosion.
- Check that dirty water is kept from clean water.
- Do not swim in or drink from quarry pits.

❖ **Waste Management:**

- Take care of your own waste
- Keep waste separate into labelled containers – report full bins.
- Place waste in containers and always close lid.
- Don't burn waste.
- Pick-up any litter laying around.

❖ **Hazardous Waste Management (Petrol, Oil, Diesel, Grease)**

- Never mix general waste with hazardous waste.
- Use only sealed, non-leaking containers.
- Keep all containers closed and store only in approved areas.
- Always put drip trays under vehicles and machinery.
- Empty drip trays after rain.
- Stop leaks and spills, if safe:
  - ✓ Keep spilled liquids moving away.
  - ✓ Immediately report the spill to the site manager/supervision.
  - ✓ Locate spill kit/supplies and use to clean-up, if safe.
  - ✓ Place spill clean-up wastes in proper containers.
  - ✓ Label containers and move to approved storage area.

❖ **Discoveries:**

- Stop work immediately.
- Notify site manager/supervisor.
- Includes – archaeological finds, cultural artefacts, contaminated water, pipes, containers, tanks and drums, any buried structures.

❖ **Air Quality:**

- Wear protection when working in very dusty areas.
- Implement dust control measures:
  - ✓ Water all roads and work areas.
  - ✓ Minimize handling of material.
  - ✓ Obey speed limit and cover trucks.

❖ **Driving and Noise:**

- Use only approved access road.
- Respect speed limits.

- Only use turn-around areas – no crisscrossing through undisturbed areas.
- Avoid unnecessary loud noises.
- Report or repair noisy vehicles.

❖ **Vegetation and Animal life:**

- Do not remove any plants or trees without approval of the site manager.
- Do not collect firewood.
- Do not catch, kill, harm, sell or play with any animal, reptile, bird or amphibian on site.
- Report any animal trapped in the work area.
- Do not set snares or raid nests for eggs or young.

❖ **Fire Management:**

- Do not light any fires on site, unless contained in a drum at demarcated area.
- Put cigarette butts in a rubbish bin.
- Do not smoke near gas, paints, or petrol.
- Know the position of firefighting equipment.
- Report all fires.
- Don't burn waste or vegetation.

(APPENDIX 4 SECTION 1(1)(n))

Specific information required by the Competent Authority

Not applicable to this project, as the competent authority did not request any specific information.

1. UNDERTAKING

The EAP herewith confirms

a) the correctness of the information provided in the reports X
b) the inclusion of comments and inputs from stakeholders and I&AP's X
c) the inclusion of inputs and recommendations from the specialist reports where relevant, and X
d) that the information provided by the EAP to interested and affected parties and any response by the EAP to comments or inputs made by interested and affected parties are correctly reflected herein X

Signature of the environmental assessment practitioner:

Greenmined Environmental (Pty) Ltd

Name of Company:

03 June 2024

Date:

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