

Table 1: EA (2002) - EIA 197/2001NW checklist

No.	Commitment	Compliance	Verification / Comments
	Authority: DMR (ito section 24 (2)a of NEMA. ITO GNR 386 of 2006. EA date 24/10/2016) EA ref.: LP/30/5/1/2/3/2/1 (10104) EM Authorisation scope: For the mining related activities Location and size: portions 8 and 22 of the farm Kennedy's Vale 361 KT and portions 24, 25, 26 and 28 of the farm Spitskop 333 KT		
	EA site specific conditions		
1	The <i>Chamaeleo dilepis subs. Dilepis</i> is protected by the Limpopo Environmental Management Act, 2003 (Act 7 of 2003), hence, they must not be removed (disturbed or destroyed, collected, removed, transported, exported, donated, purchased or sold) unless the necessary permission is granted by the Limpopo Department of Economic Development, Environment and Tourism (LEDET).	Compliant	No <i>Chamaeleo dilepis subs. Dilepis</i> were disturbed or destroyed, collected, removed, transported, exported, donated, purchased or sold. This was confirmed during interviews.
2	Heritage sites (Archaeological sites and graves) should not be disturbed without prior authorisation from LIHRA/SAHRA.	Compliant	All graves areas have been fenced off and isolated as no-go areas.
3	All development footprint areas and areas affected by the proposed development must remain as small as possible and must not encroach onto the surrounding sensitive areas and the associated buffer zones.	Not compliant	An unlicensed landing strip has been built of about 3 - 4 ha which was not part of the original footprint.
4	Water Use License (WUL) must be obtained from the Department of Water and Sanitation prior commencement of activity.	Not compliant	No water use licence available.
5	Wetland and riverine areas are to be considered as no go zones unless authorisation is obtained. Ensure that construction activities are outside the demarcated wetland area. No activity should be allowed to encroach on to wetland system.	Partially compliant	No wetland system were identified in the specialist studies. No authorisation has been granted yet for river crossings and activities within riverine areas.
6	The pits must be backfilled with course waste rock as soon as this rock has been worked out. Barriers such as fencing or berms will be required to prevent humans or animals from falling into the pits.	Partially compliant	Part of the pits have been backfilled as higher elevation mining areas are opened up and the overburden backfilled into the its.
7	Rehabilitation of the environment affected by activities undertaken must be implemented as committed on the approved EMPR.	Partially compliant	Some backfilling started but not all rehabilitation is up to date. The rehabilitation plan is also currently being updated and will determine way forward in terms of concurrent mining and closure.
	Financial provision committed on your letter dated 04 July 2016 must be submitted prior to the execution of the mining right in terms of section 23(1) of the MPRDA (Act 28 of 2002).	Partially compliant	Financial provision was provided via a guarantee. The guarantee was provided on the 31st August 2017 (Nedbank guarantee letter 469/34502505). The guaranteed amount was for R 6 699 326 while the letter referred to in this condition, dated 4 July 2016, has indicated an amount of R 8 699 326. The difference might be due to the fact that phase 3 of the project will not proceed. Still, from a legal perspective, everything for which a mining right is granted must be costed as per the mining plan.
1	Scope of authorisation		
1.1	The holder of EA shall be responsible for ensuring compliance with the conditions contained in the EA. This includes any person acting on the holder's behalf, including but not limited to an agent, servant, contractor, subcontractor, employee, consultant or any other person rendering a service to the holder of the EA.	Not applicable	This condition is to be noted. The holder has taken full responsibility for all activities under the authorization, whether it is done by contractors or the company employees.
1.2	Any changes to, or deviation from the project description set out in this EA must be approved in writing by this Department before such changes or deviation may be affected. In assessing whether to grant such approval or not, the Department may request such information as it deems necessary to evaluate the significance and impacts of such changes or deviation and it may be necessary for the holder of the EA to apply for further authorisation in terms of the EIA regulations.	Compliant	The project description remained the same.

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1.3	The activities, which are authorised, may only be carried out at the property (ies) indicated in the EA and or on the approved EMPr.	Not compliant	The mining pit/ mining boundary on the southern section of the property were "overmined" at a small area, meaning the boundaries were exceeded.
1.4	Where any of the holder of the EA's contact details change including name of the responsible person, physical or postal address / or telephonic details, the holder of the EA must notify the Department as soon as the new details become known to the holder of the EA.	Not applicable	No changes
1.5	The EA does not negate the responsibility of the holder to comply with any other statutory requirements that may be applicable to the undertaking of such activity (ies).	Partially compliant	An application for a waste licence was submitted but is still pending. No water use licence is available.
1.6	The holder of the EA must ensure that all areas where the authorised activities occur have controlled access to ensure safety of people and animals.	Partially compliant	Access controls are in place for some of the project areas. The entire pit area is however not fenced off and are accessible by people and animals, although there is the necessary warning and no entry signs.
2	Appeal of the authorisation		
2.1	The holder of EA must in writing, within 14 (fourteen) calendar days from the date of this decision and in accordance with the EIA regulations 4(2) do the following:		
2.2	Notify all registered I&AP's of -	Compliant	Proof was provided that the authorisation was communicated to the various registered I&AP together with the appeals guideline on the 31st October 2019, which was 7 days after the EA was granted and 3 days after the EA was recieved. The authorisation contains all the information as is required in points 2.2.1 - 2.2.4. All the other information that is required under points 2.3 - 2.5 are contained in the email communication as well as the authorisation.
2.2.1	The outcome of the application;	Compliant	
2.2.2	The date of the decision;	Compliant	
2.2.3	The date of issue of the decision; and	Compliant	
2.2.4	The reasons for the decision as included in Annexure 1 and Department Standard Conditions in Annexure 2.	Compliant	
2.3	Draw the attention of all registered I&AP's to the fact that an appeal may be lodged against the decision in terms of the National Appeals Regulations,	Compliant	
2.4	Draw attention of all registered I&AP's to the manner in which they may access the decision.	Compliant	
2.5	Provide the registered I&AP's with:	Compliant	
2.5.1	Name of the holder (entity) of this EA;	Compliant	
2.5.2	Name of the responsible person for this EA;	Compliant	
2.5.3	Postal address of the holder;	Compliant	
2.5.4	Telephonic and fax details of the holder; and	Compliant	
2.5.5	e-mail address of the holder if any.	Compliant	
3	Commencement of the activity (ies)		
3.1	In order to ensure safety, all employees must be given the necessary personnel protective equipment (PPE).	Compliant	PPE are issued routinely and PPE issue registers were observed.
3.2	This EA must be provided to the site operator and the requirements thereof must be made fully known to him or her.	Partially compliant	The EA was available at the time of the audit but its content not well known by the site operators (manager/director)
3.3	Hauling routes for construction vehicles and machinery must be clearly marked and appropriate signalling must be posted to that effect. Furthermore, movement of construction vehicles and machinery must be restricted to areas outside of the drainage line or wet areas.	Partially compliant	Some of this condition could not be effectively audited as all activities were in operation phase. It was however observed in older aerial footage and observed during the site visits that the hauling routes did cross the drainage lines. No water use licence were available for these crossings.

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3.4	Appropriate notification sign must be erected at the construction site, warning the public (residents, visitors, etc.) about the hazard around the construction site and presence of heavy vehicles and machinery.	Not applicable	Signs were available during the site visits, but these were in operational phase. It could not be effectively confirmed whether these were available during construction as well.
3.5	Construction must include design measures that allow surface and subsurface movement of water along the drainage lines so as not to impede natural surface and subsurface water flow, and drainage measures must promote the dissipation of storm water runoff.	Partially compliant	The storm water designs observed were sufficient. However, various crossings have not been constructed as per the designs.
3.6	Vegetation clearance must be limited areas where the individual activities will occur, and mitigation measures must be implemented to reduce the risk of erosion and alien species invasion.	Not compliant	A landing strip of +/- 3 - 4 ha has been built outside of the approved footprints.
3.7	The holder of EA must note that in terms of the National Forest Act (Act No.84 of 1998) protected plant species, also listed in Limpopo Environmental Management Act (Act no.7 of 2003) must not be cut, disturbed, damaged, destroyed and their products must not be possessed, collected, removed, transported, exported, donated, purchased or sold unless permission is granted by the Department of Agriculture, Forestry and Fisheries.	Partially compliant	No removal permit is available for the site and the auditor has good reason to believe that the likelihood of protected species encountered on the construction and operational areas are high, as is seen in the specialist report (Biodiversity). Some protected species were however left unharmed (an unharmed protected Boscia sp. was observed near the offices).
3.8	Construction areas (e.g. material lay down areas), topsoil and subsoil must be protected from contamination or pollution. Stockpiling must not take place in drainage lines or areas where it will impede surface water runoff.	Partially compliant	Topsoil and subsoil were stored as a berm around the office area. Heavy erosion was observed on these berms. The bulk of the laydown areas have been observed to be clean from contamination and pollution at the time of the audit (after construction and during operation). There was however limited contamination observed where the hazardous waste bin is stored (no containment) and on the direct fringes of the workshop's slabs.
3.9	If any soil contamination is noted at any phase of the proposed activity (ies), the contaminated soil must be removed to a licenced waste disposal facility and the site must be rehabilitated to the satisfaction of the Department and Department of Water and Sanitation. The opportunity for the onsite remediation and re-use of contaminated soil must be investigated prior to the disposal and this Department must be informed in this regard.	Not compliant	The contamination observed at the waste bin storage area have not been cleaned up at the time of the audit. No hazardous waste disposal records are available for the hazardous waste removals. It is claimed that Ewor (Pty) Ltd. (Ewor) removes it together with the used oil removals. When Ewor was contacted they claimed that only the used oil and old oil filters is collected. Thus, no disposal records (waste manifests) could be provided. This means that the auditor has good reason to believe that the clean-up and correct disposal process is not sufficient and hence a non-compliance.
3.10	An integrated waste management approach must be implemented that is based on waste minimization and must incorporate avoidance, reduction, recycling, treat, re-use and disposal where appropriate. Uncontaminated rubble generated on the premises can be re-used as back filling material on site. Ensure that no refuse or rubble generated on the premises is placed, dumped or deposited on the adjacent properties or public places and open space.	Partially compliant	Scrap steel, metal, used oil and old oil filters is recycled. All other waste is disposed. No records for disposal is available and correct disposal cannot be proven.

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3.11	In terms of section 28 and 30 of NEMA, and sections 19 and 20 of the National Water Act, 1998 (Act No. 36 of 1998), any costs incurred to remedy environmental damage must be borne by the person responsible for the damage. It is therefore imperative that the holder of the EA reads through and understand the legislative requirements pertaining to the project. It is the Applicant's responsibility to take reasonable measures which include informing and educating contractors and employees about environmental risks of their work and training them to operate in an environmentally acceptable manner.	Not compliant	No environmental awareness was done or no proof of awareness were provided during the audit. The inductions perused also had no environmental sections or aspects included.
3.12	Construction vehicle must be serviced and maintained in the manner whereby no excessive smokes and noise production is reduced to acceptable levels, and to prevent oil leaks. Contaminated soil must be remediated on site or removed to an authorised landfill site.	Compliant	Vehicle maintenance is being done routinely at the operation's workshop. All vehicles observed in operation did not show excessive exhaust fumes or oil leaks.
3.14	Residents (if any) on the property (ies) and surrounding areas must be informed if any unusually noisy activities are planned.	Compliant	Blasting notices are displayed at the nearby community (Dithamaga).
3.15	Dust suppression measures must be implemented on all exposed surfaces to minimize and control airborne dust.	Compliant	Dust suppression is applied on all dust generating surfaces. The dust fallout monitoring results are also all within nationally regulated dust fallout limits for the past 12 months.
3.16	Mixing of cement, concrete, paints, solvent, sealants and adhesive must be done in specified areas on concrete aprons or on protected plastic linings to contain spillage or overflow onto soil to avoid contamination of underground water and environmental damage.	Partially compliant	Hazardous chemical handling observed during site visits were done largely at the hazchem store, which is on hardstanding surface. Some contamination was observed at the hazardous waste storage area.
3.17	Should any heritage remains be exposed during operation or any actions on the site, these must immediately be reported to the South African Heritage Resources Agency (SAHRA) and or Limpopo Heritage Resources Agency (LIHRA) (in accordance with the applicable legislation). Heritage remains uncovered or disturbed during earthworks must not be further disturbed until the necessary approval has been obtained from the South African Heritage Resources Agency (SAHRA) and or Limpopo Heritage Resources Agency (LIHRA). Heritage remains include: archaeological remains (including fossil bones and fossil shells); coins; middens; indigenous and/or colonial ceramics; any articles of value or antiquity; marine shell heaps; stone artefacts and bone remains; structures and other built features; rock art and rock engravings; shipwrecks; and graves or unmarked human burials. A qualified archaeologist must be contacted where necessary (at the expense of the applicant and in consultation with the relevant authority) to remove any human remains in accordance with the requirements of the relevant authority.	Not compliant	Some old artefacts were found on site that were still to be reported to LIHRA and SAHRA.
3.18	Care must be taken to ensure that the material and excavated soil required for backfilling are free of contamination from hydrocarbons.	Compliant	During the audit, the excavated and backfill material were found to be uncontaminated.
3.19	Hydraulic fluid or chemicals required during construction must be stored in a concrete lined surface with bund walls and shall be designed in such a manner that any spillage can be contained and reclaimed without any impact on the surrounding environment. Should any spills occur it should be cleaned immediately by removing spillage together with the polluted solids and dispose it in the authorised disposal site permitted of such waste. The regional office of the Department of Water and Sanitation must be notified within 24 hours of an incident that may pollute surface and underground water resources.	Partially compliant	Oils and hydraulic fluids were stored inside a bunded and roofed stored that is sufficiently equipped to contain spills. A diesel/fuel tank were observed without the necessary bunding, concrete floor or similar containment.
3.20	Chemical sanitation facilities or system such as toilets that do not rely on the seepage of liquids must be provided with a ratio of 1 for every 15 workers. These must be placed such that they prevent spills or leaks to the environment and must be maintained according to the operating instructions and the content thereof must be disposed of at an authorised waste treatment works.	Compliant	Toilets were observed on site and were sufficient to accommodate the, roughly, 30 people on site.
3.21	The holder of EA must ensure that any water uses listed in terms of Section 21 of National Water Act must get authorized from Department of Water and Sanitation prior to the commencement of such activity (ies).	Not compliant	No water use licence available.
3.22	This EA does not purport to absolve the holder of EA from its common law obligations towards the owner of the surface of land affected.	Not applicable	

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3.23	The holder of EA must ensure that rehabilitation of the disturbed areas caused by operation at all times comply with the approved EMPr.	Partially compliant	Some backfilling started but not all rehabilitation is up to date. The rehabilitation plan is also currently being updated and will determine way forward in terms of concurrent mining and closure.
3.24	This EA may be amended or withdrawn at any time for non-compliance and provides no relief from the provision of any other relevant statutory or contractual obligations.	Not applicable	To be noted
3.25	The holder of EA must note that in terms of Section 43A of the National Environmental Management Waste Act, 2008 (Act No. 59 of 2008), residue deposit must be deposited and managed in a prescribed manner on any site demarcated for that purpose in the Environmental Management Plan or Environmental Management Programme. No person may temporary or permanently deposit residue stockpile or residue deposits on any area or site other than on site indicated on the Environmental Management Plan or Environmental Management Programme.	Partially compliant	A waste licence application has been submitted for the residue facilities but is not yet approved. The WML application's specialist reports indicated a low risk from the residue facilities and a proposed Class D liner. Stormwater designs are also available for the facilities, but proof could not be provided that the facilities have been designed as per the Class D requirements.
3.26	The holder of EA must note that in terms of Section 20 of the National Environmental Management: Waste Act, 2008 (Act No.59 of 2008), no person may commence, undertake or conduct a waste management activity, except in accordance with the requirements of norms and standards determined in terms of Section 19 (3) for that activity or a waste management licence is issued in respect of that activity if licence is required.	Partially compliant	A waste licence application has been submitted for the residue facilities but is, at the time of the audit, not yet approved.
3.27	An appeal under Section 43 (7) of the National Environmental Management Act (NEMA), Act 107 of 1998 (as amended) suspend an EA or exemption or any provisions of conditions attached hereto, or any directive unless the Minister directs otherwise.	Not applicable	To be noted
3.28	Should you be notified by the Minister of a suspension of the authorisation pending appeal procedure, you may not commence with the activity (ies) until such time that the Minister allows you to commence with such activity (ies) in writing.	Not applicable	To be noted
3.29	The Department reserves the right to audit and/or inspect the activity (ies) without prior notification at any reasonable time and at such frequency as may be determined by the Regional Manager.	Not applicable	To be noted
3.30	The waste storage site must have a film, impermeable, chemical resistance floors and a roof to prevent direct sunlight and rain water from getting in contact with the waste.	Not compliant	The waste bins are stored on bare ground, with no roof.
3.31	The storage of hydrocarbons must have bund walls with adequate capacity to contain the maximum volume that is stored in the area. Uncontaminated storm water must be prevented from coming into contact with the waste and must be diverted away from the storage site.	Partially compliant	The diesel storage tanks, oil store and hazchem store has bund walls and roofing. There was however one fuel tank that was stored on a stand and has no containment.
3.32	Subject to the commencement and duration requirements of the MPRDA and NEMA for the listed mining activity is valid for the period for which the aforesaid right is granted provided that this activity must commence within 10 years. If the commencement of the proposed activity does not occur within the specified period, the EA lapses and a new application for EA in terms of the NEMA and the EIA regulations should be made for the activity to be undertaken.	Compliant	The activity has commenced within the 10-year timeframe.
3.33	The commissioning and decommissioning of individual activity within the overall listed mining activity must take place within the phases and timeframes as set out in the EMP or EMPr.	Compliant	The activities have occurred as per the EMP and the decommissioning will be done as per the closure plans, which is revised regularly.
3.34	This EA will only be effective on the event that a corresponding right is issued in terms of the MPRDA as amended and none of the activities listed in this EA may commence without right.	Compliant	A mining right has been issued.
3.35	The listed activity (ies), including site preparation, must not commence within 20 (twenty) calendar days of the date of the notification of the decision being sent to the registered I&AP's. In the event that an appeal is lodged with the appeal administrator, the effect of this environmental authorisation is suspended until such time as the appeal is decided.	Not applicable	It could not be accurately established whether the activities commenced after the 20 days lapsed.
3.36	Should there be any conflicting conditions between this EA and other approval granted by other authorities, it is upon the holder of the EA to bring it to the attention of the Department for resolution.	Not applicable	No other approvals. To be noted for new authorisations.

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4	Management of activity		
4.1	A copy of the EA and EMPr must be kept at the property or on site office where the activity (ies) will be undertaken. The EA and EMPr must be produced to any authorised officials of the Department who request to see it and must be made available for inspection by any employee or agent of the holder of the EA who works or undertakes work at the property (ies).	Compliant	The EA was available at the time of the audit.
4.2	The content of the EMPr and its objectives must be made known to all contractors, subcontractors, agent and any other people working on the site, and any updates or amendments to the EMPr must be submitted to the Department for approval.	Not compliant	The content and objectives of the EA are not communicated to the employees and are not known.
4.4	Regular monitoring and maintenance of storm water drainage facilities must be conducted at all times, if damaged as directed by the Department or any other relevant authority.	Partially compliant	It could not be confirmed whether regular checks are done on the drainage facilities. This audit will serve as monitoring of the facilities and any recommendations, such as the erosion of the berms, will be recommended for maintenance.
4.5	A buffer zone of 100 metres between the activity (ies) and the residential areas, cemeteries or burial grounds must be clearly demarcated and maintained.	Compliant	A buffer zone of 100m are maintained and the cemeteries are demarcated.
4.6	The holder of the EA must prevent nuisance conditions or health hazards, or the potential creation of nuisance conditions or health hazards.	Compliant	Nuisances are managed and a permanent health practitioner as well as nurse and small clinic is on-site. Nuisances are monitored, reported and managed, if any.
4.7	The holder of the EA must ensure that all non-recyclable waste are disposed of at waste management facilities licenced to handle such wastes and all recyclable waste are collected by licenced waste management facilities for recycling, re-use or treatment..	Not compliant	The waste disposal of both hazardous waste and non-hazardous waste could not be confirmed. No records available of correct disposal.
4.8	The holder of the EA must ensure that all liquid wastes, whose emissions to water or land could cause pollution are diverted to sewer, after testing water quality and receiving written approval from the relevant local authority.	Partially compliant	Sewage are directed to a french drain system. Used oils are collected. Wash water from workshops are not collected or contained.
4.9	Non-compliance with any condition of this EA or EMPr may result in the issuing of a directive in terms of section 28 and or a compliance notice in terms of section 31L of NEMA.	Not applicable	To be noted
4.10	This EA only authorises activities specified in the EMPr /closure plan and a new authorisation must be applied for in respect of any new activity not specified as part of the EMPr.	Not compliant	A landing strip of +/- 3 - 4 ha has been built. This landing strip is not included in the activities of the existing EA and EMP.
4.11	Only listed activities that are expressly specified in the EMPr that forms part of this EA may be conducted, and additional or new activities not specified herein must be applied for by the holder and authorised by the competent authority in the form of an amendment to the aforesaid EMPr before such activities may be commenced with. This condition is also applicable in the case of the amendment, addition, substitution, correction, removal or updating of any detail in the aforesaid EMPr.	Not compliant	See comments on condition 4.10 regarding unauthorised landing strip. This audit will identify any need for amendment, of which amendment will be applied for during this r.34 audit process.
4.12	Rehabilitation of the disturbed surface caused by operation at all times must comply with the approved EMPr.	Partially compliant	Some backfilling started but not all rehabilitation is up to date. The rehabilitation plan is also currently being updated and will determine way forward in terms of concurrent mining and closure.
4.13	The holder of the EA must ensure that the name and contact details of the ECO is made available to the Regional Manager within 30 days of commencement. The holder of EA must also ensure that an ECO is always available on site to ensure that activity (ies) at all times comply with the issued EA and approved EMPr.	Not compliant	No ECO appointment could be provided.
4.13	The ECO must:		
4.16.1	Keep and maintain a detailed incidents register (including any spillages of fuels, chemicals or any other material);	Not compliant	No incident register could be provided.

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4.16.2	Keep complaint register on site indicating the complaint and how the issues were addressed, what measures were taken and what the preventative measures were implemented to avoid re-occurrence of complaints.	Not applicable	Understandably, no complaints were received from I & AP.
4.16.3	Keep records relating to monitoring and auditing on site and avail them for inspection to any relevant authorised officials.	Partially compliant	Noise, dust and health monitoring records are kept on site and are available on request. No auditing or inspection records were available.
4.16.4	Keep copies of all environmental reports submitted to the department.	Not applicable	No environmental reports submitted to the department except for the EIA related communications and documents.
4.16.5	Keep records of all permits, licences and authorisations required by the operation.	Compliant	Available permits, licences and authorisation are kept on site and were observed by the auditor
4.16.6	Compile a monthly monitoring report and make it available to the department if requested.	Not compliant	No monthly reports were available at the time of the audit.
4.15	The duties and responsibility of the ECO should not be seen as exempting the holder of the EA from the legal obligations in terms of the NEM:WA and NEMA.	Not applicable	To be noted.
4.16	The footprint of the activity (ies) must be limited on the areas authorised for the actual construction works and operational activities and all areas outside of the footprint must be regarded as a "no go" areas.	Not compliant	A landing strip of +/- 3 - 4 ha has been built which is not included in the activities or footprint of the existing EA and EMP.
4.17	Erosion and soil loss must be prevented by minimizing the construction site exposed to surface water run-off. Where necessary erosion stabilizing action such as gabions or re-vegetation must be implemented to prevent further habitat deterioration.	Not compliant	The overall erosion control on site is poor and numerous erosion channels have been observed. With the construction of the landing strip, the exposed surfaces have been increased by 3-4 ha. This landing strip has no erosion control measures implemented and numerous erosion gullies and channels have been observed around the mining area.
4.18	The holder of the EA must ensure that all personnel who work with hazardous waste are trained to deal with these potential hazardous situations so as to minimize the risk involved. Records of training and verification of competence must be kept by the holder of the EA.	Not compliant	No training records could be provided for handling of hazardous waste.
4.20	In order to prevent nuisance conditions, the holder of the EA must ensure that all storage skips and bins are not overfilled.	Compliant	The bins and skips observed during the site visit were not overfilled and nuisance were found.
5	Reporting to the Department		
5.5.1	The holder of the EA must:		
5.1.1	Submit an Environmental Audit Report to this Department biennially and such report must be done by qualified Environmental Assessment Practitioner and the audit report must specify whether conditions of this environmental authorisation and EMP/closure plan are adhered to;	Partially compliant	This audit will be the first biennial audit done by a qualified EAP. This however is more than 2 years after the approval date of 24 October 2016.
5.1.2	Identify and assess any new impacts and risks as a result of undertaking the activity (ies), if applicable;	Compliant	The scope and outcome of this audit is in line with the audit requirements as per regulation 34 of the EIA regulations as well as conditions 5.1.2 - 5.1.7 of this EA. The holder of the EA has included the public participation and submission to authorities as part of the auditor's scope, and the audit report will be submitted to the authorities once PP is completed.
5.1.3	Identify shortcomings in the EMP/closure plan, if applicable	Compliant	
5.1.4	Identify the need, if any, for any changes to the management, avoidance and mitigation measures provided for in the EMP/closure plan;	Compliant	
5.1.5	If applicable, specify that the corrective action/s taken for the previous audits non-conformities was adequate;	Compliant	
5.1.6	Specify the name of the auditor, and	Compliant	
5.1.7	Be submitted by the holder to the competent authority within 30 days from the date on which the auditor finalised the audit.	Compliant	
5.2	Should any shortcomings in terms of regulation 34(4) be identified, the holder must submit recommendations to amend the EMP/closure plan in order to rectify any shortcomings identified with the aforementioned audit report.	Not applicable	The be noted. Will be included in this audit if any shortcomings are identified.

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5.3	Any complaint received from the I&AP during all phases of the operation must be attended to as soon as possible and addressed to the satisfaction of all concerned interested and affected parties.	Not applicable	Understandably, from interviews with the stakeholder engagement officer, no complaints were received from I & AP.
5.4	The holder of the EA must annually assess the environmental liabilities of the operation using the master rates in line with the applicable Consumer Price Index (CPI) at the time and address the shortfall on the financial provision submitted in terms of section 24P of NEMA.	Partially compliant	The liabilities haven't been updated since 2016. A company has been appointed and the liabilities are being updated currently.
5.5	The holder of the EA must, within 24 hours of incidents occurring, notify the Competent Authority of the occurrence or detection of any incident on the site, or incidental to the operation of the site, which has the potential to cause, or has caused pollution of the environment, health risks, nuisance conditions or water pollution.	Not applicable	No proof of incidents reported, and no incidents were observed during the site visit that should have been reported. As per section 30 of NEMA, the legislative non-compliances observed and noted do not fall into the ambit of an "incident" but rather legal non-compliances.
5.6	The holder of the EA must, within 14 days, or a shorter period of time, if specified by the Competent Authority from the occurrence or detection of any incident referred to in condition 5.5, submit an action plan, which must include a detailed time schedule, and resource allocation signed off by top management, to the satisfaction of the Competent Authority of measures taken to -	Not applicable	No incidents reported.
5.6.1.1	Correct the impact resulting from the incident;	Not applicable	No incidents reported.
5.6.1.2	Prevent the incident from causing any further impact; and	Not applicable	No incidents reported.
5.6.1.3	Prevent a recurrence of a similar incident.	Not applicable	No incidents reported.
5.7	In the event that measures have not been implemented within 21 days of the incident referred to in condition 5.6, or measures which have been implemented are inadequate, the Competent Authority may implement the necessary measures at the cost of the holder of the EA.	Not applicable	No incidents reported.
6	Site Security and Access Control		
6.1	The holder of the EA must ensure effective access control on the site to reasonably prevent unauthorised entry. Signs indicating the risks involved in unauthorised entry must be displayed at each entrance.	Compliant	Access control were available at all the entrances.
6.2	Weather proof, durable and legible notices in at least three official languages applicable in the area must be displayed at each entrance to the site. These notices must prohibit unauthorised entry and state the hours of operation, the name, address and telephone number of the holder of the EA and the person responsible for the operation of the site.	Compliant	Access control notices were durable, weatherproof and displayed in 3 languages
7	Emergency Preparedness Plan		
7.1	The holder of the EA must maintain and implement an emergency preparedness plan and review it biennially when conducting audit and after each emergency and or major accident. The plan must, amongst others, include:	Partially compliant	An emergency procedure is available and reviewed regularly (not necessarily biennially during the audit). The plan has been reviewed as part of this audit.
7.1.1	Site fire	Compliant	Fires included in the emergency procedure
7.1.3	Spillage	Not compliant	Emergency control related to spillages were not included into the emergency preparedness plan.
7.1.3	Natural disasters such as floods	Not applicable	No natural disasters were identified as an emergency risk.
7.1.4	Industrial action	Compliant	Industrial action included into the emergency procedure
7.1.5	Contact details of police, ambulances and any emergency centre closer to the site.	Compliant	Contact details included into the emergency procedure

No.	Commitment	Compliance	Verification / Comments
7.2	The holder of EA must ensure that an up to date emergency register is kept during all phases of the operation. The register must be made available upon request by the department.	Partially compliant	This condition is assumed to refer to a register of the emergency drills. No register of the emergency drills was available. Proof has been provided that the procedures has been communicated to all employees and were also signed off by all employees.
8	Investigations		
8.1	If, in the opinion of the Competent Authority, nuisance or health risks may be or is occurring on the site, the holder of the EA must initiate an investigation into the cause of the problem or suspected problem.	Not applicable	To be noted. No such communication from the competent authority.
8.2	If, in the opinion of the Competent Authority, pollution may be or is occurring, the holder of the EA must initiate an investigation into the cause of the problem or suspected problem. Such investigation must include the monitoring of the water quality variables, at those monitoring points and such frequency as may be specified by the Competent Authority.	Not applicable	To be noted. No such communication from the competent authority.
8.3	Investigations carried out in terms of condition 8.1 and 8.2 above must include monitoring of the relevant environmental pollution, nuisance and health risk variables, at those monitoring points and such frequency to be determined in consultation with the Competent Authority.	Not applicable	To be noted. No such communication from the competent authority.
8.4	Should the investigation carried out as per conditions 8.1 and 8.2 above reveal any unacceptable levels of pollution, the holder of the EA must submit mitigation measures to the satisfaction of the Competent Authority.	Not applicable	To be noted. No such communication from the competent authority.
9	Commissioning and decommissioning		
9.1	The commissioning and decommissioning of individual activity within the overall listed mining activity must take place within the phases and timeframes as set out in the EMP or EMPr	Compliant	No decommissioning has taken place and commissioning has occurred as was set out in the EMP
10	Site closure		
10.1	The holder of the EA must apply for a closure certificate in terms of Section 43 of the Minerals and Petroleum Resources Development Act (Act 28 of 2002), as amended within 180 days of occurrence of lapsing, abandonment, cancellation, cessation, relinquishment and completion of development.	Not applicable	No closure applied for yet or
10.2	The application for closure indicated above must be submitted together with all relevant documents as indicated in Section 43 of the Mineral and Petroleum Resources Development Act (Act 28 of 2002), as amended.	Not applicable	No closure applied for yet or
10.3	No exotic plants may be used for rehabilitation purposes only indigenous plants can be utilized for rehabilitation purposes.	Not applicable	No closure applied for yet or
10.4	The holder of the EA remains responsible for any environmental liability, pollution or ecological degradation, the pumping and treatment of extraneous water, compliance with the conditions of the EA and the management and sustainable closure thereof until the Minister has issued a Closure Certificate in terms of Section 43 of the Minerals and Petroleum Resources Development Act (Act No, 28 of 2002). Where necessary the minister may retain certain portion of financial provision for residual, health or environmental impacts that might be known in future.	Not applicable	No closure applied for yet or

Table 2: EMP audit checklist

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
Air quality						
Construction						
Dust generation						
1. Access and hauling along roads i.e. during the construction of roads	Direct Impact: Road construction involves the removal of rock and earth by grading or digging during construction. Vegetation is removed, grading and paving takes place using a range of road construction equipment. This often leads to the generation of fugitive dust comprising TSP, PM10 and PM2.5 from the dirt roads.	Implementation of the EMS				
		(1) Development of a dust fallout monitoring plan.	Compliant	A dust fallout monitoring plan is available and done by an external health practitioner	Sufficient	
		(2) Frequent Inspections of areas prone to dust generation.	Compliant	Dust emissions are predominantly from the mining area and roads, which are inspected regularly	Sufficient	
		(3) Reporting and recording incidents related to air quality.	Partially compliant	Some incidents were reported but not all.	Sufficient	
		(4) Ensuring corrective and preventative actions are taken to address nonconformities.	Partially compliant	Some non-conformances were observed or recorded by the health practitioner and addressed. Some were observed during the site visit and not reported.	Sufficient	
2. Site clearing and topsoil stripping for lay down area and all related mining infrastructure	Direct Impact: Vegetation is removed, grading and paving to prepare the lay down areas takes place using a range of construction equipment. This often leads to the generation of fugitive dust comprising TSP, PM10 and PM2.5. The generation of dust during these activities will affect the visual environment negatively.	(5) Communicating findings of concern to I&AP.	Not compliant	There is an appointed stakeholder engagement officer on site. He confirmed during interview that no environmental issues are discussed with the community and that no environmental issues have been raised by the community to date.	Sufficient	
		On site mitigation actions				
		(1) Construction activities to take place under the supervision of an environmental representative	Not applicable	The site was in operation during the time of the audit and it could not be established whether an environmental representative was appointed. At the time of construction the geologist was tasked with overseeing the environmental responsibilities.	Sufficient	
		(2) Set the on-site speed limit to 40km/h for gravel roads and 50km/h for tar roads.	Compliant	Speed limits are imposed on the gravel roads. The speed restriction notices indicated a speed limit of 30km/h.	Sufficient	
		(3) Develop and implement a dust suppression schedule.	Compliant	A dust suppression schedule is available and implemented.	Sufficient	
5. Mining offices (construction)	Direct Impact: During the construction of infrastructures areas are to be cleared of	(4) Biodegradable and environmentally friendly flocculent (approved by the environmental control officer/environmental officer/ SHEQ officer) may be used as dust suppressant.	Compliant	Environmentally friendly dust suppression is used.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
and operation) i.e. operation of training centres, offices and kitchen facilities	vegetation. This often leads to the generation of fugitive dust comprising TSP, PM10 and PM2.5.	(5) Wetting of stockpile areas.	Not compliant	Wetting of stockpiles have not been observed during the site visits and no proof has been provided that it is taking place.	Not sufficient	
		(6) Covering loads with tarpaulin when transporting ROM, product, or any material in order to prevent dust generation.	Compliant	The trucks transporting ore are covered with tarpaulins.	Sufficient	
		(7) Disturbed areas no longer used for mining related activities shall be re-vegetated immediately.	Not compliant	Some backfilling has been observed but no re-vegetation has been observed at any of the inactive areas.	Sufficient	
8. Pollution Control Dams (PCD's) i.e. Construction and operation		(8) Areas having to be stripped of topsoil for construction purposes must be kept to a minimum and only stripped when work is about to take place.	Not compliant	A landing strip of +/- 3 - 4 ha has been built which is not included in the footprint of the existing EA and EMP, meaning +/- 3-4 ha of additional open ground is exposed to wind erosion and dust generation, with no dust suppression	Sufficient	
		Legal requirements				
		(1) Register online to the National Atmospheric Emissions Inventory System (NAEIS) in terms of the National Reporting Regulations (GNR 283) as Group C emitters.	Not compliant	No online registration could be provided.	Sufficient	
		(2) Ensuring compliance with the National Ambient Air Quality Standards (GNR 1210 of 24 December 2009).	Compliant	The dust reports indicated that the dust fallout for the 12-month period to May 2019 are within the limits as is promulgated in the national dust control regulations.	Sufficient	
		(3) Ensuring compliance with the National Dust Control regulations (GNR 897 of November 2013).	Compliant		Sufficient	
		(4) Section 39 of the Atmospheric Pollution Prevention Act of 1965 and GN R. 1651 specifies requirements regarding the control of emissions from diesel vehicles used on public roads. These requirements should form part of the Air quality Management Plan and the Vehicle/Plant/Equipment maintenance plan..	Compliant	The machines used in mining and trucks on public roads use 50ppm diesel and are regularly maintained to maintain fuel use efficiency.	Sufficient	
		Specialist recommendations				
		(1) Development of a detailed air quality management plan (focusing on sources of dust located in close proximity to the residential receptors within the project boundary) ensuring adherence to thresholds stipulated in the Baseline Air Quality Impact Assessment report (BAQIAR) (Appendix E) prior to the commencement of operations.	Partially compliant	An air quality monitoring programme is available with monitoring "limits/triggers" above which action is being taken. These limits are in line with the national dust control regulations. The Approach is not in the form of a formal procedure or plan but do show that some process is followed.	Sufficient	
		(2) Implementation of recommended dust control methods as stipulated in Table 6-1 of the BAQIAR (Appendix E).	Compliant	Various dust controls are proposed in Table 6.1, with different control efficiencies. Various controls with the higher control efficiencies, such as level 2 dust suppression on hauling, are implemented on site. The overall dust control on site were good and the dust fallout monitoring noted no exceedances over the 12 period to May	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
				2019.		
		(3) Dust generated from material handling operations and mining operations can be significantly reduced by wet suppression with the use of water sprays.	Not compliant	The material is not wetted when loaded or handled.	Sufficient	
		(4) The combined use of water sprays with chemical surfactants provide more extensive wetting making it a more effective technique than water suppression alone.	Partially compliant	The dust suppression frequency falls within the level 2 dust controls as per Table 6.1 of the air quality specialist report, with a likely control efficiency of 75%. This is currently proving sufficient although improvements can be made through the use of surfactants.	Sufficient	
		(5) The loading, transfer, and discharge of materials should take place with a minimum height of fall and be shielded against the wind.	Not compliant	The height of fall is mostly determined by logistics and backfill / rehabilitation requirements and are not necessarily dictated by its ability to generate dust. No shielding against the wind.	Sufficient	
		(6) Controls to reduce emissions from unpaved roads can include vehicle restrictions which limit the speed, weight and number of vehicles on the road, surface improvements (paving or adding gravel to the road), and surface treatments (wet suppression or surface treatments).	Compliant	Speed limits are enforced, and dust suppression applied.	Sufficient	
		(7) All positive and negative effects of the different methods of dust suppression should be considered and the best feasible and successful option must be implemented.	Compliant	The dust suppression schedule / programme is based on what is most feasible but effective.	Sufficient	
		(8) Wind erosion from stockpiles and open areas can be minimised through the use of water sprays, wind breaks, vegetation and enclosures.	Partially compliant	Some open areas are water sprayed, but most stockpiles and other open areas have no dust control. The material however seems to be partly cladded (unintentionally) as a result of the natural waste rock material / overburden material characteristics. Dust generation from the stockpiles are limited.	Sufficient	
		(9) Implement strict vehicle restrictions such as speed limits, weight and number of trucks on the road per given time	Compliant	Speed limits are enforced, and dust suppression applied.	Sufficient	
		(10) Hauling activities should be strictly restricted to designated hauling routes.	Compliant	Hauling is restricted to the hauling roads that is water sprayed.	Sufficient	
		(11) Regular maintenance of the vehicles/trucks (engines) should be undertaken to ensure optimal efficiency of the engine.	Compliant	Regular maintenance is undertaken on the vehicles	Sufficient	
		(12) Regular maintenance of hauling routes and surface improvements (where necessary) should be undertaken.	Compliant	Hauling roads are water sprayed and the surfaces scraped/maintained when necessary.	Sufficient	
		(13) Regular sweeping and cleaning of tarred/paved road surfaces to prevent the accumulation of dust.	Not applicable	Not required.	Not applicable	
		(14) Immediate clean-up of any spillage of material on the hauling routes.	Compliant	No spillage was observed on the hauling routes	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(15) Regular inspections should be carried out on the vehicles/trucks (engines, tyres, etc.) and the route to ensure both are in good quality.	Compliant	Regular maintenance are undertaken on the vehicles	Sufficient	
		(16) All material transported should be covered, where possible, and not left exposed during transportation.	Compliant	Material that is transported are covered by tarpaulins.	Sufficient	
		(17) Engines of the trucks should not be left running whilst not in use.	Compliant	Could not be effectively audited. Vehicles observed where all in use. Vehicles not in use where switched off.	Sufficient	
		(18) Clean fuels and fuel efficient vehicles/trucks/mobile equipment should be considered for use where possible.	Compliant	The vehicles used where largely a new fleet of mostly bell hauling trucks, Kumatsu and Cat excavators, which is designed with efficiency prioritised (delivering most power with least fuel and emissions).	Sufficient	
		(19) Designated areas for the storage of overburden should be considered and incorporated into the design.	Partially compliant	Overburden storage is as near as possible to the excavation area.	Sufficient	
		(21) Monthly PM10 and PM2.5 ambient monitoring and reporting. This is also recommended to obtain baseline concentrations.	Not compliant	No PM ₁₀ or PM _{2.5} monitoring	Not sufficient	
		(22) All main hauling roads should be treated for dust suppression to maintain at least 65% emission reduction efficiency.	Compliant	Level 2 dust suppression on hauling roads are implemented on site, with a theoretical control efficiency of 75%. The overall dust control on site were good and the dust fallout monitoring noted no exceedances over the 12 period to May 2019.	Sufficient	
		Compliance with standard				
		(1) Development and implementation of a Dust management plan as part of an Air quality management plan to including the monitoring and prevention programme.	Partially compliant	The audits confirmed that there is a dust control process implemented on site. It is however not documented into a formal plan or procedure.	Sufficient	
		(2) Ensuring compliance with the National Environmental Management: Air Quality Act (NEMAQA), No. 39 of 2004 as amended by Act no 20 of 2014.	Compliant	The fallout limits form part of the monitoring.	Sufficient	
		(3) Ensure activities remain under the thresholds stipulated in GNR 893 (in terms of section 21 of NEMAQA.	Compliant	The fallout limits form part of the monitoring.	Sufficient	
		(4) Register online to the National Atmospheric Emissions Inventory System (NAEIS) in terms of the National Reporting Regulations (GNR 283) as Group C emitters.	Not compliant	Not registered on NAEIS.	Sufficient	
		(5) Ensuring compliance with the National Ambient Air Quality Standards (GNR 1210 of 24 December 2009).	Compliant	The fallout limits form part of the monitoring.	Sufficient	
		(6) Ensuring compliance with the National Dust Control regulations (GNR 897 of November 2013)	Compliant	The fallout limits form part of the monitoring.	Sufficient	
CO2 emissions and release of noxious gas						
1. Access and	Direct Impact: Contributing factor	Implementation of EMS:				

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
hauling along roads i.e. during the construction of roads	the BCR Minerals (Pty) Ltd carbon footprint. Direct Impact: The use of diesel operated construction equipment will cause a contributing factor the BCR Minerals (Pty) Ltd carbon footprint.	(1) Develop and maintain a carbon footprint reporting policy.	Not compliant	No carbon footprint reporting policy.	Sufficient	
		(2) Develop and maintain a Vehicle/Plant/Equipment maintenance plant.	Compliant	A plant/vehicle/equipment maintenance programme is implemented.	Sufficient	
2. Site clearing and topsoil stripping for lay down area and all related mining infrastructure		<u>On-site mitigation measures:</u>				
		(1) Plant and equipment to function at an optimal level.	Compliant	Plant and equipment functioning optimally	Sufficient	
		(2) Where possible lead replacement petrol to be used.	Compliant	93 or 95 petrol are used	Sufficient	
		(3) Where possible low sulphur containing diesel to be used.	Partially compliant	50ppm diesel are used. SA has 10ppm diesel available from Sasol and options are thus available to further lower sulphur emissions.	Sufficient	
9.Stores, workshops & wash bays		(4) All vehicles and equipment must be maintained and serviced according to the manufacturer's specification.	Partially compliant	Vehicles are serviced routinely. It could not be provided whether this is according to the OEM's specifications.	Sufficient	
11. Fuel operating power generators		(5) Any vehicle, plant or equipment emitting visible emissions from their exhaust systems must be serviced or repaired immediately.	Compliant	Vehicles with visible emissions are immediately serviced.	Sufficient	
15. Transport of construction material, mobile plant and equipment to the site		<u>Legal requirements:</u>				
		(1) Section 39 of the Atmospheric Pollution Prevention Act of 1965 and GN R. 1651 specifies requirements regarding the control of emissions from diesel vehicles used on public roads. These requirements should form part of the Air quality Management Plan and the Vehicle/Plant/Equipment maintenance plan.	Compliant	The machines used in mining and trucks on public roads use 50ppm diesel and are regularly maintained so as to maintain fuel use efficiency.	Sufficient	
		Compliance with standard				
		(1) Develop and maintain a Carbon footprint reporting policy.	Not compliant	No carbon footprint reporting policy.	Sufficient	
		(2) Develop and maintain a Vehicle/Plant/Equipment maintenance plant.	Compliant	A plant/vehicle/equipment maintenance programme is implemented.	Sufficient	
Electricity usage						
4. Onsite Clinic	Direct Impact: Contributing factor the BCR Minerals (Pty) Ltd carbon footprint.	<u>Implementation of EMS:</u>				
		(1) Calculate and record the carbon emissions that may arise from the authorised activities.	Not compliant	Carbon emissions are not calculated	Sufficient	
5. Mining offices (construction and operation)		(2) Monitor the carbon footprint of the project throughout the entire life cycle.	Not compliant	Carbon footprint are not calculated	Sufficient	
		(3) Develop an awareness campaign on power saving and electricity usage.	Not compliant	No awareness done on reducing carbons emissions	Sufficient	
		<u>On-site mitigation measures:</u>				

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
i.e. operation of training centres, offices and kitchen facilities		(1) Keep record of the carbon emissions produced on site to monitor the carbon footprint of the project.	Not compliant	No records of carbon emissions monitoring	Sufficient	
		(2) Ensure that all unnecessary office equipment, air cons, and lights are switched off at the end of each shift.	Compliant	Aircons are switched off at the end of each shift.	Sufficient	
12. Lighting		(3) If feasible, the use of solar powered geysers will allow for the reduction in contributing to the carbon footprint of the project.	Not compliant	No solar geysers or any renewable or electricity reduction initiative implemented.	Sufficient	
		(4) Consider and investigate the feasibility of switching to "green" energy options.	Not compliant	No solar geysers or any renewable or electricity reduction initiative implemented.	Sufficient	
		Compliance with standard				
		(1) Develop and implement a electricity usage monitoring programme.	Not compliant	No records of carbon emissions monitoring	Sufficient	
		(2) Develop and implement a carbon footprint reporting policy.	Not compliant	No records of carbon emissions monitoring or reporting policy	Sufficient	
Smell nuisance						
8. Pollution Control Dams (PCD's) i.e. Construction and operation	Direct Impact: Lack of maintenance and treatment may result in a smelling environment. May lead to a potential nuisance to local communities and land users in close proximity to the authorised site.	Implementation of EMS:				
		(1) Develop and maintain an Integrated Waste and Water Management Plan (IWWMP).	Partially compliant	An IWWMP was developed for the site during the drafting of the WUL. The IWWMP however is only in draft and was never maintained (updated/reviewed).	Sufficient	
		(2) Frequent inspections of areas posing a possible risk of causing smell nuisance.	Compliant	Smell nuisance areas such as the toilets and waste areas are informally inspected for smells.	Sufficient	
		(3) Development and implementation of an incident response plan.	Compliant	Incidents are reported and addressed but however not recorded.	Sufficient	
		(4) Reporting and recording all related incidents according to a developed procedure.	Not compliant	No incident reporting procedure could be provided.	Sufficient	
		(5) Develop and implement an emergency preparedness plan.	Partially compliant	An emergency procedure is available and reviewed regularly. The emergency plan does not include sewage spillages or nuisance issues.	Sufficient	
		(6) Ensuring corrective and preventative actions are taken to address nonconformities.	Compliant	Nuisance incidents are informally reported and corrected. No nuisances were found during the site visit.	Sufficient	
10. Ablutions & change house with sewage treatment plant	Direct Impact: Lack of maintenance and treatment may result in a smelling environment.	(7) Communicating findings of concern to I&AP.	Not compliant	No environmental issues are communicated with I&AP.	Sufficient	
		On-site mitigation measures:				
		(1) Putrescible waste must be handled, stored, and disposed of before the probability of it generating odours.	Compliant	No putrescible waste was observed or smelled during the site visit.	Sufficient	
		(2) Chemical toilets must be emptied/ serviced on a regular basis. Proof of this must be obtained and kept on record.	Partially compliant	Sewage are directed to a french drain system. No chemical toilets were observed on site during the site visit. No records of collections provided.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(3) Sewage tanks must be emptied on a regular basis. Proof of this must be obtained and kept on record.	Partially compliant	Sewage are directed to a french drain system. No chemical toilets were observed on site during the site visit. No records of collections provided.	Sufficient	
		Compliance with standard				
		(1) Develop and implement an Integrated Waste Water Management plan specifically addressing the management of sewage or chemical toilets.	Partially compliant	An IWWMP was developed for the site during the drafting of the WUL. The IWWMP however is only in draft and was never maintained (updated/reviewed).	Sufficient	
		(2) Develop and implement a Infrastructure inspection programme to ensure no leaks or spillages of sewerage or waste.	Not compliant	No proof of such inspections could be provided.	Sufficient	
		(3) Develop and implement a Waste Management plan.	Partially compliant	A waste management approach is available with some segregation. The waste management process is however not formulated into a waste procedure/plan and no sewage is included.	Sufficient	
Emission of noxious fumes						
13. Fuel storage	Direct Impact: Evaporation of diesel fuel and heavy fuel from temporary tanks and possible spills during loading of fuel from tanks on site that are used for re-fuelling of heavy machinery and trucks may lead to the development of respiratory problems and irritation to eyes.	Implementation of EMS:				
		(1) Develop and implement a Health and Safety management plan addressing the proper storage, management, handling, and transport of hazardous substances.	Partially compliant	No hazardous substances procedure/standard/plan could be provided. A hazardous storage area complete with roof, bundwalls, and sumps are available and used, indicating that hazardous substance controls are implemented. Spill kits and saw dust were also available and used.	Sufficient	
		(2) All personnel to be trained in the handling, storage, management, and transport of hazardous substances.	Not compliant	No proof of hazchem training could be provided.	Sufficient	
		On-site mitigation measures:				
		(1) All personnel should wear issued PPE at all times as indicated by safety signs.	Compliant	PPE were issued and used	Sufficient	
		(2) Fuel storage facilities should be inspected on a regular basis.	Not compliant	No inspection records could be provided.	Sufficient	
		(3) Facilities should be well ventilated.	Compliant	Fuel facilities were well ventilated.	Sufficient	
		(4) Spill prevention measures to be implemented at all times.	Compliant	Hazchem storage facilities were available with ventilation, bundwalls and spill kits.	Sufficient	
		(5) Fire fighting equipment such as fire extinguishers should be made available and be inspected on a regular basis.	Compliant	Fire fighting equipment were stored at strategic places around site and especially near the fuelling areas.	Sufficient	
		(6) A spill kit should be made available at all time.	Compliant	Spill kits were available	Sufficient	
		(7) All spills to be cleaned immediately.	Partially compliant	Spills at the hazchem area were treated with absorbent but the absorbent were not removed.	Sufficient	
		(8) Storage facilities should be inspected on a regular basis.	Not compliant	No inspection records could be provided.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(9) All leaks to be repaired immediately.	Partially compliant	No leaks were observed on the fuel storage facility.	Sufficient	
		<u>Legal requirements:</u>				
		(1) Bulk storage facilities of flammable liquids to be approved by the provincial fire inspector.	Not compliant	No proof was provided that the flammable storage tanks have been approved by the provincial fire inspector.	Sufficient	
		(2) Section 30 of the National Environmental Management Act (NEMA), Act 107 of 1998 describes measures to be taken to control emergency incidents. These requirements should be included in the development of the Emergency Response procedure.	Partially compliant	An emergency procedure is available and reviewed regularly. The emergency plan however does not include all of the requirements as per section 30 of NEMA.	Sufficient	
		(3) Section 20 of the National Water Act 36 of 1998 describes the procedure for the control of incidents involving Hazardous substances. These requirements should also be included in the Emergency response procedure.	Partially compliant	An emergency procedure is available and reviewed regularly. The emergency plan however does not include all of the requirements as per section 20 of NWA.	Sufficient	
		(4) GN R. 1237 published under the Mine Health and Safety Act of 1996 describes the requirements for the storage of hazardous substances. These requirements should be incorporated into the Hazardous substances management plan.	Partially compliant	No hazardous substances procedure/standard/plan could be provided. A hazardous storage area complete with roof, bundwalls, and sumps are available and used, indicating that hazardous substance controls are implemented and largely complies with the requirements of the MHSA of 1996. Full compliance could not be confirmed.	Sufficient	
		(5) Section 21 of the Mine Health and safety Act of 1996 describes the requirements for the acquisition of Hazardous chemicals. These requirements should be considered as part of the mine acquisition process.	Partially compliant	No hazardous substances procedure/standard/plan could be provided. A hazardous storage area complete with roof, bundwalls, and sumps are available and used, indicating that hazardous substance controls are implemented and largely complies with the requirements of the MHSA of 1996. Full compliance could not be confirmed.	Sufficient	
		(6) Regulation 277, 273, and 279 of GN R. 225 of the National Road traffic Act of 1996 describes the requirements of transporting hazardous waste. These requirements should be incorporated in both the Hazardous substances management plan and the Waste Management plan.	Partially compliant	Hazardous waste collection could not be confirmed, as no waste manifests are available. Used oil are collected by a registered hazardous substances transporter.	Sufficient	
		(7) Regulation 277 and 273 of GN R. 225 of the National Road traffic Act of 1996 describes the Loading and offloading of dangerous goods. These requirements should be addressed in the Hazardous substances management plan.	Partially compliant	Hazardous waste collection could not be confirmed, as no waste manifests are available. Used oil are collected by a registered hazardous substances transporter.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(8) All requirements described in the Hazardous substance Act of 1973 should be included in the Hazardous substances management plan.	Partially compliant	No hazardous substances procedure/standard/plan could be provided. A hazardous storage area complete with roof, bundwalls, and sumps are available and used, indicating that hazardous substance controls are implemented and largely complies with the requirements of the HSA of 1973. Full compliance could not be confirmed.	Sufficient	
		(9) The storage of hazardous substances must be in compliance with regulation 4 of GN R. 704 of the National Environmental Management Act.	Partially compliant	A hazardous storage area complete with roof, bundwalls, and sumps are available and used, indicating that hazardous substance controls are implemented and largely complies with the requirements of r.704 of NEMA. Full compliance could not be confirmed.	Sufficient	
		(10) Requirements stipulated in SANS 10089-1:2008 (above ground storage facilities for petroleum products) must be incorporated into the Hazardous Substance Management plan and be implemented on site.	Partially compliant	A fuel storage area complete with bunding, concrete floors and fire extinguishers are available and used, indicating that controls are implemented and largely complies with the requirements of SANS 10089-1:2008. Full compliance could not be confirmed.	Sufficient	
		(11) Requirements stipulated by SANS 301: 2011 (Storage tank facilities for hazardous chemicals) must be incorporated into the Hazardous Substance Management plan and be implemented.	Partially compliant	A fuel storage area complete with bunding, concrete floors and fire extinguishers are available and used, indicating that controls are implemented and largely complies with the requirements of SANS 10089-1:2008. Full compliance could not be confirmed.	Sufficient	
		Specialist recommendations:				
		(1) Development of a detailed air quality management plan (focusing on sources of dust located in close proximity to the residential receptors within the project boundary) ensuring adherence to thresholds stipulated in the Baseline Air Quality Impact Assessment report (BAQIAR) (Appendix E) prior to the commencement of operations.	Partially compliant	An air quality monitoring programme is available with monitoring "limits/triggers" above which action is being taken. These limits are in line with the national dust control regulations. The Approach is not in the form of a formal procedure or plan but do show that some process is followed.	Sufficient	
		(2) Controls to reduce emissions from unpaved roads can include vehicle restrictions which limit the speed, weight and number of vehicles on the road, surface improvements (paving or adding gravel to the road), and surface treatments (wet suppression or surface treatments).	Compliant	Dust suppression applied to hauling roads, speed limits applied to gravel roads and trucks are weighed and tar road weight restrictions are indirectly enforced.	Sufficient	
		(3) Implement strict vehicle restrictions such as speed limits, weight and number of trucks on the road per given time	Compliant	Dust suppression applied to hauling roads, speed limits applied to gravel roads and trucks are weighed and tar road weight restrictions are indirectly enforced.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(4) Hauling activities should be strictly restricted to designated hauling routes.	Compliant	Hauling is restricted to the hauling roads that is water sprayed.	Sufficient	
		(5) Regular maintenance of the vehicles/trucks (engines) should be undertaken to ensure optimal efficiency of the engine.	Compliant	Regular maintenance is undertaken on the vehicles	Sufficient	
		(6) Regular inspections should be carried out on the vehicles/trucks (engines, tyres, etc.) and the route to ensure both are in good quality.	Compliant	Regular maintenance is undertaken on the vehicles	Sufficient	
		(7) Engines of the trucks should not be left running whilst not in use.	Compliant	Vehicles are switched off if not to be used over long periods.	Sufficient	
		(8) Clean fuels and fuel efficient vehicles/trucks/mobile equipment should be considered for use where possible.	Compliant	50ppm diesel are used and regular maintenance are undertaken.	Sufficient	
		Compliance with standard				
		(1) Develop and implement a Hazardous substance management plan addressing adherence to applicable SANS standards for the storage of fuel.	Partially compliant	No hazardous substances procedure/standard/plan could be provided. A hazardous storage area complete with roof, bundwalls, and sumps are available and used, indicating that hazardous substance controls are implemented and largely complies with the requirements of the SANS standard. Full compliance could not be confirmed.	Sufficient	
		(2) Develop and implement a infrastructure inspection schedule and programme and include the inspections of fuel storage facilities.	Not compliant	No inspection records could be provided.	Sufficient	
		(3) Develop and implement a Health and Safety Management plan.	Compliant	A health and safety management plan is available and implemented.	Sufficient	
		(4) Develop an Emergency preparedness plan addressing prevention and mitigation of incidents.	Partially compliant	An emergency procedure is available and reviewed regularly. The plan has been reviewed as part of this audit and does not cover all hazardous substances related incidents.	Sufficient	
Operation						
Dust generation						
18.Topsoil and subsoil stripping & stockpiling for mining operation area	Direct Impact: Clearing of vegetation for topsoil and subsoil stripping exposes the mining operation area to dust generation. High levels of dust fallout will effect the overall air quality. The generation of dust during these activities will effect	Implementation of the EMS				
		(1) Development of a dust fallout monitoring plan.	Compliant	A dust fallout monitoring plan is available and done by an external health practitioner	Sufficient	
		(2) Frequent Inspections of areas prone to dust generation.	Compliant	Dust emissions are predominantly from the mining area and roads, which are inspected regularly		
		(3) Reporting and recording incidents related to air quality.	Partially compliant	Some incidents were reported but not all.		

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
	the visual environment negatively. Indirect Impact: Continuous exposure to high levels of dust fallout may lead to unhealthy environment for employees and surrounding communities.	(4) Ensuring corrective and preventative actions are taken to address nonconformities.	Partially compliant	Some non-conformances were observed or recorded by the health practitioner and addressed. Some were observed during the site visit and not reported.		
		(5) Communicating findings of concern to I&AP.	Not compliant	There is an appointed stakeholder engagement officer on site. He confirmed during interview that no environmental issues are discussed with the community and that no environmental issues have been raised by the community to date.		
		On site mitigation actions				
		(1) Construction activities to take place under the supervision of an environmental representative	Not applicable	The site was in operation during the time of the audit and it could not be established whether an environmental representative was appointed. At the time of construction, the geologist was tasked with overseeing the environmental responsibilities.	Sufficient	
		(2) Set the on-site speed limit to 40km/h for gravel roads and 50km/h for tar roads.	Compliant	Speed limits are imposed on the gravel roads. The speed restriction notices indicated a speed limit of 30km/h.	Sufficient	
		(3) Develop and implement a dust suppression schedule.	Compliant	A dust suppression schedule is available and implemented.	Sufficient	
		(4) Biodegradable and environmentally friendly flocculent (approved by the environmental control officer/environmental officer/ SHEQ officer) may be used as dust suppressant.	Compliant	Environmentally friendly dust suppression is used.	Sufficient	
		(5) Wetting of stockpile areas.	Not compliant	Wetting of stockpiles have not been observed during the site visits and no proof has been provided that it is taking place.	Not sufficient	
19. Opencast mining excavations	Direct Impact: Exposed un-vegetated mining areas may lead to high levels of dust fallout and will effect the overall air quality. The generation of dust during these activities will effect the visual environment negatively. Indirect Impact: Continuous exposure to high levels of dust fallout may lead to unhealthy environment for employees and surrounding communities.	(6) Covering loads with tarpaulin when transporting ROM, product, or any material in order to prevent dust generation.	Compliant	The trucks transporting ore are covered with tarpaulins.	Sufficient	
		(7) Disturbed areas no longer used for mining related activities shall be re-vegetated immediately.	Not compliant	Some backfilling has been observed but no re-vegetation has been observed at any of the inactive areas.	Sufficient	
		(8) Areas having to be stripped of topsoil for construction purposes must be kept to a minimum and only stripped when work is about to take place.	Not compliant	A landing strip of +/- 3 - 4 ha has been built which is not included in the footprint of the existing EA and EMP, meaning +/- 3-4 ha of additional open ground is exposed to wind erosion and dust generation, with no dust suppression	Sufficient	
		Legal requirements				
		(1) Register online to the National Atmospheric Emissions Inventory System (NAEIS) in terms of the National Reporting Regulations (GNR 283) as Group C emitters.	Not compliant	No online registration could be provided.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(2) Ensuring compliance with the National Ambient Air Quality Standards (GNR 1210 of 24 December 2009).	Compliant	The dust reports indicated that the dust fallout for the 12-month period to May 2019 are within the limits as is promulgated in the national dust control regulations.	Sufficient	
20. Drilling & Blasting	Direct Impact: Dust being generated from drilling and blasting activities poses the risk of affecting the ambient air quality. This also affects the visual environment. Indirect Impact: Continuous exposure to high levels of dust fallout may lead to unhealthy environment for employees and surrounding communities.	(3) Ensuring compliance with the National Dust Control regulations (GNR 897 of November 2013).	Compliant		Sufficient	
		(4) Section 39 of the Atmospheric Pollution Prevention Act of 1965 and GN R. 1651 specifies requirements regarding the control of emissions from diesel vehicles used on public roads. These requirements should form part of the Air quality Management Plan and the Vehicle/Plant/Equipment maintenance plan..	Compliant	The machines used in mining and trucks on public roads use 50ppm diesel and are regularly maintained to maintain fuel use efficiency.	Sufficient	
		Specialist recommendations				
		(1) Development of a detailed air quality management plan (focusing on sources of dust located in close proximity to the residential receptors within the project boundary) ensuring adherence to thresholds stipulated in the Baseline Air Quality Impact Assessment report (BAQIAR) (Appendix E) prior to the commencement of operations.	Partially compliant	An air quality monitoring programme is available with monitoring "limits/triggers" above which action is being taken. These limits are in line with the national dust control regulations. The Approach is not in the form of a formal procedure or plan but do show that some process is followed.	Sufficient	
21. RoM & product stockpiling	Direct Impact: Continuous use of haul road often leads to the generation of fugitive dust comprising TSP, PM10 and PM2.5 from the dirt roads. Stockpiled RoM and product are continuously exposed to weathering leading the generation of fine dust particles. The generation of dust during these activities will effect the visual environment negatively. Indirect Impact: Continuous exposure to high levels of dust fallout may lead to unhealthy environment for employees and surrounding communities.	(2) Implementation of recommended dust control methods as stipulated in Table 6-1 of the BAQIAR (Appendix E).	Compliant	Various dust controls are proposed in Table 6.1, with different control efficiencies. Various controls with the higher control efficiencies, such as level 2 dust suppression on hauling, are implemented on site. The overall dust control on site were good and the dust fallout monitoring noted no exceedances over the 12 period to May 2019.	Sufficient	
		(3) Dust generated from material handling operations and mining operations can be significantly reduced by wet suppression with the use of water sprays.	Not compliant	The material is not wetted when loaded or handled.	Sufficient	
		(4) The combined use of water sprays with chemical surfactants provide more extensive wetting making it a more effective technique than water suppression alone.	Partially compliant	The dust suppression frequency falls within the level 2 dust controls as per Table 6.1 of the air quality specialist report, with a likely control efficiency of 75%. This is currently proving sufficient although improvements can be made through the use of surfactants.	Sufficient	

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22. Residue stockpiles	Direct Impact: Continuous use of haul roads often leads to the generation of fugitive dust comprising TSP, PM10 and PM2.5 from the dirt roads. Stockpiled residue are continuously exposed to weathering leading the generation of fine dust particles. The generation of dust during these activities will effect the visual environment negatively. Indirect Impact: Continuous exposure to high levels of dust fallout may lead to unhealthy environment for employees and surrounding communities.	(5) The loading, transfer, and discharge of materials should take place with a minimum height of fall and be shielded against the wind.	Not compliant	The height of fall is mostly determined by logistics and backfill / rehabilitation requirements and are not necessarily dictated by its ability to generate dust. No shielding against the wind.	Sufficient	
		(6) Controls to reduce emissions from unpaved roads can include vehicle restrictions which limit the speed, weight and number of vehicles on the road, surface improvements (paving or adding gravel to the road), and surface treatments (wet suppression or surface treatments).	Compliant	Speed limits are enforced, and dust suppression applied.	Sufficient	
23. Screening Operations	Direct Impact: Screening operations poses a high risk to the generation of fugitive dust comprising TSP, PM10 and PM2.5. The generation of dust during these activities effects the visual environment negatively.	(7) All positive and negative effects of the different methods of dust suppression should be considered and the best feasible and successful option must be implemented.	Compliant	The dust suppression schedule / programme is based on what is most feasible but effective.	Sufficient	
		(8) Wind erosion from stockpiles and open areas can be minimised through the use of water sprays, wind breaks, vegetation and enclosures.	Partially compliant	Some open areas are water sprayed, but most stockpiles and other open areas have no dust control. The material however seems to be partly cladded (unintentionally) as a result of the natural waste rock material / overburden material characteristics. Dust generation from the stockpiles are limited.	Sufficient	
		(9) Implement strict vehicle restrictions such as speed limits, weight and number of trucks on the road per given time	Compliant	Speed limits are enforced, and dust suppression applied.	Sufficient	
		(10) Hauling activities should be strictly restricted to designated hauling routes.	Compliant	Hauling is restricted to the hauling roads that is water sprayed.	Sufficient	
24. Discard disposal (backfilling of mining area)	Direct Impact: Continuous use of haul roads and backfilling of material often leads to the generation of fugitive dust comprising TSP, PM10 and PM2.5 from the dirt roads. Un-vegetated area are continuously exposed to weathering leading the generation of fine dust particles. Backfilling of material in windy conditions also contribute to dust generation. The generation of dust during these activities will effect the visual environment	(11) Regular maintenance of the vehicles/trucks (engines) should be undertaken to ensure optimal efficiency of the engine.	Compliant	Regular maintenance is undertaken on the vehicles	Sufficient	
		(12) Regular maintenance of hauling routes and surface improvements (where necessary) should be undertaken.	Compliant	Hauling roads are water sprayed and the surfaces scraped/maintained when necessary.	Sufficient	
		(13) Regular sweeping and cleaning of tarred/paved road surfaces to prevent the accumulation of dust.	Not applicable	Not required.	Not applicable	
		(14) Immediate clean-up of any spillage of material on the hauling routes.	Compliant	No spillage was observed on the hauling routes	Sufficient	
		(15) Regular inspections should be carried out on the vehicles/trucks (engines, tyres, etc.) and the route to ensure both are in good quality.	Compliant	Regular maintenance is undertaken on the vehicles	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
	negatively. Indirect Impact: Continuous exposure to high levels of dust fallout may lead to unhealthy environment for employees and surrounding communities.	(16) All material transported should be covered, where possible, and not left exposed during transportation.	Compliant	Material that is transported are covered by tarpaulins.	Sufficient	
		(17) Engines of the trucks should not be left running whilst not in use.	Compliant	Could not be effectively audited. Vehicles observed where all in use. Vehicles not in use where switched off.	Sufficient	
24. Discard disposal (backfilling of mining area)	Direct Impact: Continuous use of haul roads and backfilling of material often leads to the generation of fugitive dust comprising TSP, PM10 and PM2.5 from the dirt roads. Un-vegetated area are continuously exposed to weathering leading the generation of fine dust particles. Backfilling of material in windy conditions also contribute to dust generation. The generation of dust during these activities will effect the visual environment negatively. Indirect Impact: Continuous exposure to high levels of dust fallout may lead to unhealthy environment for employees and surrounding communities.	(18) Clean fuels and fuel efficient vehicles/trucks/mobile equipment should be considered for use where possible.	Compliant	The vehicles used where largely a new fleet of mostly bell hauling trucks, kumatsu and cat excavators, which is designed with efficiency prioritised (delivering most power with least fuel and emissions).	Sufficient	
		(19) Designated areas for the storage of overburden should be considered and incorporated into the design.	Partially compliant	Overburden storage is as near as possible to the excavation area.	Sufficient	
		(21) Monthly PM10 and PM2.5 ambient monitoring and reporting. This is also recommended to obtain baseline concentrations.	Not compliant	No PM ₁₀ or PM _{2.5} monitoring	Not sufficient	
		(22) All main hauling roads should be treated for dust suppression to maintain at least 65% emission reduction efficiency.	Compliant	Level 2 dust suppression on hauling roads are implemented on site, with a theoretical control efficiency of 75%. The overall dust control on site were good and the dust fallout monitoring noted no exceedances over the 12 period to May 2019.	Sufficient	
		Compliance with standards				
		(1) Development and implementation of a Dust management plan as part of an Air quality management plan to including the monitoring and prevention programme.	Partially compliant	The audits confirmed that there is a dust control process implemented on site. It is however not documented into a formal plan or procedure.	Sufficient	
		(2) Ensuring compliance with the National Environmental Management: Air Quality Act (NEMAQA), No. 39 of 2004 as amended by Act no 20 of 2014.	Compliant	The fallout limits form part of the monitoring.	Sufficient	
31. Bulk transporting of Ore to market on Public roads	Direct Impact: Continuous use of haul road often leads to the generation of fugitive dust comprising TSP, PM10 and PM2.5 from the dirt roads. The generation of dust during these activities will effect the visual environment negatively. Indirect Impact: Continuous exposure to high levels of dust fallout may lead to unhealthy environment for employees and surrounding communities.	(3) Ensure activities remain under the thresholds stipulated in GNR 893 (in terms of section 21 of NEMAQA.	Compliant	The fallout limits form part of the monitoring.	Sufficient	
		(4) Register online to the National Atmospheric Emissions Inventory System (NAEIS) in terms of the National Reporting Regulations (GNR 283) as Group C emitters.	Not compliant	Not registered on NAEIS.	Sufficient	
		(5) Ensuring compliance with the National Ambient Air Quality Standards (GNR 1210 of 24 December 2009).	Compliant	The fallout limits form part of the monitoring.	Sufficient	
		(6) Ensuring compliance with the National Dust Control regulations (GNR 897 of November 2013)	Compliant	The fallout limits form part of the monitoring.	Sufficient	
CO2 emissions						

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
18.Topsoil and subsoil stripping & stockpiling for mining operation area	Direct Impact: Contributing factor the BCR Minerals (Pty) Ltd carbon footprint.	<u>Implementation of EMS:</u>				
		(1) Develop and maintain a carbon footprint reporting policy.	Not compliant	No carbon footprint reporting policy.	Sufficient	
		(2) Develop and maintain a Vehicle/Plant/Equipment maintenance plant.	Compliant	A plant/vehicle/equipment maintenance programme is implemented.	Sufficient	
		<u>On-site mitigation measures:</u>				
19.Opencast mining excavations	Direct Impact: The use of diesel operated construction equipment will cause a contributing factor the BCR Minerals (Pty) Ltd carbon footprint.	(1) Plant and equipment to function at an optimal level.	Compliant	Plant and equipment functioning optimally	Sufficient	
(2) Where possible lead replacement petrol to be used.		Compliant	93 or 95 petrol are used	Sufficient		
21. RoM & product stockpiling		(3) Where possible low sulphur containing diesel to be used.	Partially compliant	50ppm diesel are used. SA has 10ppm diesel available from Sasol and options are thus available to further lower sulphur emissions.	Sufficient	
	30. Vehicular activity on haul roads; and operation of mining equipment	(4) All vehicles and equipment must be maintained and serviced according to the manufacturer's specification.	Partially compliant	Vehicles are serviced routinely. It could not be provided whether this is according to the OEM's specifications.	Sufficient	
28. Water supply (potable & process)		(5) Any vehicle, plant or equipment emitting visible emissions from their exhaust systems must be serviced or repaired immediately.	Compliant	Vehicles with visible emissions are immediately serviced.	Sufficient	
23. Screening operations		<u>Legal requirements:</u>				
31. Bulk transporting of Ore to market on Public roads		(1) Section 39 of the Atmospheric Pollution Prevention Act of 1965 and GN R. 1651 specifies requirements regarding the control of emissions from diesel vehicles used on public roads. These requirements should form part of the Air quality Management Plan and the Vehicle/Plant/Equipment maintenance plan.	Compliant	The machines used in mining and trucks on public roads use 50ppm diesel and are regularly maintained so as to maintain fuel use efficiency.	Sufficient	
Smell nuisance						
26. Chemical Toilets	Direct Impact: Lack of maintenance and treatment may result in a smelling environment.	<u>Implementation of EMS:</u>				
		(1) Develop and maintain an Integrated Waste and Water Management Plan (IWWMP).	Partially compliant	An IWWMP was developed for the site during the drafting of the WUL. The IWWMP however is only in draft and was never maintained (updated/reviewed).	Sufficient	
		(2) Frequent inspections of areas posing a possible risk of causing smell nuisance.	Compliant	Smell nuisance areas such as the toilets and waste areas are informally inspected for smells.	Sufficient	
		(3) Development and implementation of an incident response plan.	Compliant	Incidents are reported and addressed but however not recorded.	Sufficient	
		(4) Reporting and recording all related incidents according to a	Not	No incident reporting procedure could be	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		developed procedure.	compliant	provided.		
		(5) Develop and implement an emergency preparedness plan.	Partially compliant	An emergency procedure is available and reviewed regularly. The emergency plan does not include sewage spillages or nuisance issues.	Sufficient	
		(6) Ensuring corrective and preventative actions are taken to address nonconformities.	Compliant	Nuisance incidents are informally reported and corrected. No nuisances were found during the site visit.	Sufficient	
		(7) Communicating findings of concern to I&AP.	Not compliant	No environmental issues are communicated with I&AP.	Sufficient	
		On-site mitigation measures:				
		(1) Putrescible waste must be handled, stored, and disposed of before the probability of it generating odours.	Compliant	No putrescible waste was observed or smelled during the site visit.	Sufficient	
		(2) Chemical toilets must be emptied/ serviced on a regular basis. Proof of this must be obtained and kept on record.	Partially compliant	Sewage are directed to a french drain system. No chemical toilets were observed on site during the site visit. No records of collections provided.	Sufficient	
		(3) Sewage tanks must be emptied on a regular basis. Proof of this must be obtained and kept on record.	Partially compliant	Sewage are directed to a french drain system. No chemical toilets were observed on site during the site visit. No records of collections provided.	Sufficient	
		Compliance with standards				
		(1) Develop and implement an Integrated Waste Water Management plan specifically addressing the management of sewage or chemical toilets.	Partially compliant	An IWWMP was developed for the site during the drafting of the WUL. The IWWMP however is only in draft and was never maintained (updated/reviewed).	Sufficient	
		(2) Develop and implement a Infrastructure inspection programme to ensure no leaks or spillages of sewerage or waste.	Not compliant	No proof of such inspections could be provided.	Sufficient	
		(3) Develop and implement a Waste Management plan.	Partially compliant	A waste management approach is available with some segregation. The waste management process is however not formulated into a waste procedure/plan and no sewage is included.	Sufficient	
Biodiversity						
Construction						
Vegetation and habitat loss						
1. Access and hauling along roads i.e. during the construction of roads	Direct Impact: Clearing the area to construct the access roads leads to the loss of vegetation and habitats of macro and micro organisms. The loss of vegetation also affects the surrounding	Implementation of EMS:				
		(1) Development of Mine Rehabilitation, decommissioning and mine closure liability Plan in compliance with GN R. 1147 of NEMA.	Compliant	A rehabilitation, decommissioning and closure plan is available, completed in accordance with GN R.1147 of NEMA.	Sufficient	
		(2) Develop and implement a plant species search and rescue management plan.	Not compliant	No proof could be provided of such a plan and no search and rescue has been done.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
	Fauna and Flora.	(3) Regular inspection of sensitive areas.	Partially compliant	No proof of inspection could be provided. This audit serves as an external inspection of the sensitive areas.	Sufficient	
		(4) A soil conservation and stockpiling plan to be developed and implemented.	Not compliant	A soil conservation plan could not be provided. Some topsoil stockpiles observed but very little erosion control measures. There is also a topsoil imbalance on site.	Sufficient	
2. Site clearing and topsoil stripping for lay down area and all related mining infrastructure	Direct Impact: Clearing of site and stripping of topsoil leads to the loss of vegetation and habitats of macro and micro organisms. The loss of vegetation also affects the habitat of surrounding Fauna and Flora.	(5) Reporting and recording incidents related to unnecessary clearance of vegetation.	Not compliant	An entire landing strip were constructed (area cleared), with a footprint of about 3-4 ha, without it being reported.	Sufficient	
		(6) Ensuring corrective and preventative actions are taken to address nonconformities.	Not compliant	No action was taken to correct the unnecessary clearance of vegetation.	Sufficient	
		(7) Communicating findings of concern to I&AP.	Not compliant	No environmental communication done with I&AP.	Sufficient	
		(8) Record keeping of all removed/relocated species.	Not compliant	No records were provided, and no species were observed that were relocated.	Sufficient	
		On-site mitigation measures:				
		(1) Avoid clearing areas outside the development footprint.	Not compliant	An entire landing strip were constructed, with a footprint of about 3-4 ha, without it being reported.	Sufficient	
2. Site clearing and topsoil stripping for lay down area and all related mining infrastructure	Direct Impact: Clearing of site and stripping of topsoil leads to the loss of vegetation and habitats of macro and micro organisms. The loss of vegetation also affects the habitat of surrounding Fauna and Flora.	(2) Avoid development in sensitive environments such as areas within pristine or valuable ecological significance.	Not compliant	An entire landing strip were constructed, with a footprint of about 3-4 ha, without it being reported.	Sufficient	
		(3) Before the commencement of any vegetation clearance, a search and rescue operation should take place identifying possible protected species as well as indigenous species.	Not compliant	No search and rescue were conducted	Sufficient	
		(4) An area should be identified to re-instate protected and indigenous areas.	Not compliant	No area identified or set aside to re-instate protected and indigenous areas	Sufficient	
		(5) If feasible an onsite nursery should be established and maintained.	Not compliant	No on-site nursery	Sufficient	
		Legal requirements:				
6. Storm water runoff management features	Direct Impact: Clearing of site and stripping of topsoil during the construction of storm water runoff management features poses a risk to the loss of vegetation and habitats of macro and micro organisms. The loss of vegetation also affects the habitat of surrounding Fauna and Flora. Indirect Impact: If areas surrounding the storm water features are not rehabilitated	(1) Section 28 of NEMA describes the duty of care and remediation of environmental damage.	Not compliant	Some issues observed such as vegetation disturbances from erosion of the discard	Sufficient	
		(2) A number of the proposed activities fall within or within close proximity to the Sekhukhune Centre of Endemism. Working outside the authorised footprints would require additional authorisation in terms of NEMA and The National Environmental Management: Biodiversity Act (NEMBA) of 2002.	Not compliant	An entire landing strip were constructed (area cleared), with a footprint of about 3-4 ha, outside of what was approved in the EMP.	Sufficient	
		(3) The removal or disturbance of listed protected species in terms of NEMBA, the Limpopo Environmental Management Act of 2003, and the National Forest Act of 1998 would require a permit.	Not applicable	No permit was available. It could not be confirmed whether any protected species were situated on the footprint areas, although the likelihood would have been high based on the biodiversity report.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
	properly or features installed are not constructed according to the storm water management model, these areas are prone to erosion.	Specialist recommendations:				
		Terrestrial Ecology –				
		(1) Prior to any new area being impacted by the mine, that area and a suitable buffer will have to be delineated and activities have to be preceded by a very thorough walkthrough, conducted between January and April, followed by the necessary plant Search and Rescue operations where applicable.	Not compliant	No proof that a walkthrough was done, or search and rescue undertaken	Sufficient	
		(2) Themeda triandra – Diheteropogon amplexans Grasslands (High sensitivity rating – Avoid as far possible)				
		(2.1) Development in Grasslands should be limited to the absolute minimum, aiming for minimal to no alteration of the habitat configuration.	Compliant	Activities are situated on medium-low to medium-high sensitivity sites and outside of the no-go zones (see figure 9 in biodiversity specialist report). Only two river crossings go through the no-go zones, which could not be avoided.	Sufficient	
		(2.2) If some of these habitats are impacted or will be altered by the proposed development, all development must be preceded by a thorough footprint investigation followed by a Search and Rescue operation for all plants of conservation concern.	Compliant	No high sensitivity habitats affected (see figure 9 on page 29 of biodiversity report).	Sufficient	
		(2.3) Components of the proposed development that should under no circumstance be located in this vegetation would include:	Compliant	No high sensitivity habitats affected (see figure 9 on page 29 of biodiversity report).	Sufficient	
		(2.3.1) Buildings and/or ablution facilities;	Compliant	No high sensitivity habitats affected (see figure 9 on page 29 of biodiversity report).	Sufficient	
		(2.3.2) Any form of waste/soil/overburden disposal or stockpiling	Compliant	No high sensitivity habitats affected (see figure 9 on page 29 of biodiversity report).	Sufficient	
		(2.3.3) Tailings dams or processing plants; and	Compliant	No high sensitivity habitats affected (see figure 9 on page 29 of biodiversity report).	Sufficient	
		(2.3.4) Any form of storage of materials or machinery.	Compliant	No high sensitivity habitats affected (see figure 9 on page 29 of biodiversity report).	Sufficient	
		(3) Cyperus sexangularis – Flueggea virosa Riparian Vegetation (No Go Area – only suitable crossings permissible)				
		(3.1) Development in this vegetation/habitat and at least 50 m beyond should be limited to crossings of access roads only, aiming for minimal to no alteration of the habitat configuration.	Compliant	Activities are situated on medium-low to medium-high sensitivity sites and outside of the no-go zones (see figure 9 in biodiversity specialist report). Only two river crossings go through the no-go zones, which could not be avoided.	Sufficient	
		(3.2) Mining/development in this vegetation/habitat is strongly discouraged.	Compliant	Activities are situated on medium-low to medium-high sensitivity sites and outside of the no-go zones (see figure 9 in biodiversity specialist report). Only two river crossings go through the no-go zones, which could not be avoided.	Sufficient	

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		(3.3) Where upstream vegetation will be obliterated or severely denuded, adequate storm water and erosion control measures must be put in place to slow down and disperse runoff volumes and prevent the degradation of other channels and riparian vegetation.	Partially compliant	There is no clear stormwater control around the mining area, and it has been clearly observed that erosion has deposited sediment and material on downstream vegetation.	Sufficient	
		(3.4) Where road crossings are necessary, channels may under no circumstance be sealed with any impermeable material, as this will lead to a loss of runoff- and related retention/replenishment of soil moisture reserves, nutrients and seeds.	Partially compliant	The river crossings observed had culverts and pipes installed to allow flow through although the crossing on the main road has shown some erosion after the crossing, indicating that the attenuation is not sufficient.	Sufficient	
		(3.5) Culverts must be designed in a way that water will never be concentrated to a width narrower than the actual channel, causing accelerated erosion during heavy downpours.	Partially compliant	The river crossings observed had culverts and pipes installed to allow flow through although the crossing on the main road has shown some erosion after the crossing, indicating that the attenuation is not sufficient.	Sufficient	
		(3.6) Components of the proposed development that may under no circumstance be located in or within 100 m of any drainage would include:	Compliant	No activities are within the 100m buffer except the stream crossings	Sufficient	
		(3.6.1) Buildings and/or ablution facilities;	Compliant	No activities are within the 100m buffer except the stream crossings	Sufficient	
		(3.6.2) Any form of waste/soil/overburden disposal or stockpile;	Compliant	No activities are within the 100m buffer except the stream crossings	Sufficient	
		(3.6.3) Tailings dams or processing plants; and	Compliant	No activities are within the 100m buffer except the stream crossings	Sufficient	
		(3.6.4) Any form of storage of materials or machinery	Compliant	No activities are within the 100m buffer except the stream crossings	Sufficient	
		(4) <i>Acacia tortilis</i> – <i>Dichrostachys cinerea</i> Dry Mixed Bushveld (Medium Low sensitivity)				
		(4.1) It is recommended that if additional space is required in future for any additional infrastructure, this will be situated on the more disturbed sections of this vegetation.	Compliant	No new activities undertaken except the landing strip equally distributed between the medium-high and medium-low areas.	Sufficient	
		(4.2) Community members should be engaged to clear out as much wood as possible from areas to be developed to alleviate the wood-clearing of more valuable large trees in the area.	Not compliant	No proof has been provided that this was undertaken	Sufficient	
		(4.3) Runoff from any sealed or bare surface must be contained to prevent the erosion of the donga areas and drainage lines below these plains.	Partially compliant	Runoff control from cleared areas are only implemented around the offices and laydown area. All other areas have no runoff control and significant erosion has been observed while on site.	Sufficient	
		(4.4) Mine management of the Spitsvle Project has indicated that they will attempt, where possible, to create more grazing for the Dithamaga community by trying to clear some of the encroached bush to allow perennial grasses to become re-established. For this, it was strongly advised against removing all vegetation with a				

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		bulldozer. Rather, the following should be done to break the sealed upper surface and reduce sheet erosion:				
		(4.4.1) With a Ripper only, rip sections of up to 5 m wide along the contour, alternating with ± 5 m of bushveld as it is;	Not compliant	No proof has been provided that this was undertaken	Sufficient	
		(4.4.2) Rips should be at least 500 mm deep, and invasive thorn bushes uprooted to that depth as well to ensure their resprouting capacity from the below-ground lignotuber is also eradicated;	Not compliant	No proof has been provided that this was undertaken	Sufficient	
		(4.4.3) If possible, hand-collected seeds from surrounding areas should be re-introduced to the rips;	Not compliant	No proof has been provided that this was undertaken	Sufficient	
		(4.4.4) Use the cleared thorn bushes to loosely brush-pack the area - with the branching side facing upslope	Not compliant	No proof has been provided that this was undertaken	Sufficient	
		(5) <i>Kirkia wilmsii</i> – <i>Terminalia prunioides</i> variable Bushveld (Medium-High sensitivity – Avoid as far possible)				
		(5.1) Mining/development in this vegetation/habitat should be limited to the absolute minimum, aiming for minimal alteration of the habitat configuration.	Partially compliant	The mining area is situated in the medium-high sensitivity area and cannot be relocated as it has to follow the reef line. Roughly half of the landing strip has been constructed inside this area.	Sufficient	
		(5.2) This is most important within 100 m of any mountain streams and drainages, to prevent the accelerated erosion of lower-lying plains and fluvial systems.	Compliant	No activities are within the 100m buffer except the stream crossings	Sufficient	
		(5.3) If some of these habitats are impacted or will be altered by the proposed development, newly created slopes should preferably be shallower than the original slopes, but never steeper to enable a gradual re-establishment of the woody and herbaceous layer.	Partially compliant	See the detailed rehabilitation plan. Some of the slopes near the pits are at angle of repose, which is $\pm 37^\circ$, while the rest of the pits will be filled and sloped to equal or lower than 1:4 (14°). The re-shaping of the steeper slopes will be investigated in future as reshaping it is currently flagged as a stability risk.	Sufficient	
		(5.4) After decommissioning, it will be important to facilitate the re-establishment of a diverse vegetation layer as soon as possible.	Not applicable	No decommissioning currently. Included in the rehabilitation plans	Sufficient	
		(6) <i>Hippobromus pauciflorus</i> – <i>Rhoicissus tridentata</i> Rock Outcrops (High sensitivity – Treat as No Go Areas as far possible)				
		(6.1) Same requirements as stipulated under (5).	Not applicable	See points 5	Sufficient	
		(7) <i>Combretum hereroense</i> – <i>Euclea sekhukhuniensis</i> low bushveld (No Go, only limited access roads permissible)				
		(7.1) Mining/development in this vegetation/habitat is strongly discouraged, aiming for no alteration of the habitat.	Compliant	Activities are situated on medium-low to medium-high sensitivity sites and outside of the no-go zones (see figure 9 in biodiversity specialist report). Only two river crossings go through the no-go zones, which could not be avoided.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(7.2) Adjacent (upstream) areas also need to be cleared with care, ensuring that no excessive runoff is directed toward the donga plains.	Partially compliant	There is no clear stormwater control around the mining area, and it has been clearly observed that erosion has deposited sediment and material on downstream vegetation and could have or could increase donga formations.	Sufficient	
		(7.3) Although current dongas may be relatively old and stable, new and accelerated erosion must be monitored and mitigated at all times.	Partially compliant	There is no clear stormwater control around the mining area, and it has been clearly observed that erosion has deposited sediment and material on downstream vegetation and could have or could increase donga formations.	Sufficient	
		(7.4) After decommissioning, it will be important to facilitate the re-establishment of a dense herbaceous vegetation layer as soon as possible where these plains have been impacted.	Not applicable	No decommissioning currently. Included in the rehabilitation plans	Sufficient	
		(8) Rehabilitate and re-vegetate all areas that have been disturbed as soon as practically possible.	Not applicable	Only the river crossings pass through the no-go areas. The river crossings will only be rehabilitated at closure.	Sufficient	
		(9) Continually monitor the progress/success of rehabilitation efforts and adapt if rehabilitation targets are not met in acceptable timeframes	Not applicable	Only the river crossings pass through the no-go areas. The river crossings will only be rehabilitated at closure.	Sufficient	
		(10) As part of decommissioning, all stockpiles must be entirely obliterated and landscaped to merge into the surroundings.	Not applicable	No decommissioning currently. Included in the rehabilitation plans	Sufficient	
		(11) Keep main internal access route as planned along existing gravel roads.	Compliant	Main access road used follows existing gravel roads	Sufficient	
		(12) After the final layout of mining operation components has been approved, conduct a thorough footprint investigation to determine any protected or red data plant species population location and size, and animal burrows:	Not applicable	No decommissioning currently. Included in the rehabilitation plans	Sufficient	
		(12.1) Map (by GPS) as far as possible larger concentrations of large trees and protected species that could be avoided or must be relocated;	Not applicable	No activities are within this vegetation type.	Sufficient	
		(12.2) Protected trees, succulents and geophytes: must be relocated (trees as far as feasible);	Not applicable	No activities are within this vegetation type.	Sufficient	
		(12.3) Animal burrows: must be monitored by EO/ECO prior to ground clearing for activity/presence of animal species. If detected, such animals must be removed and relocated by a qualified professional/contractor.	Not applicable	No activities are within this vegetation type.	Sufficient	
		(13) Strictly restrict all movement of vehicles and heavy machinery to permissible areas, these being designated access roads, maintenance roads, turning points and parking areas. No off-road driving beyond designated areas may be allowed.	Compliant	Vehicle movement were restricted to the access roads and designated areas.	Sufficient	
		(14) Animals accidentally injured by moving vehicles or machinery must be taken to a local veterinarian to be treated or put down in a humane manner.	Not applicable	No accidents recorded	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(15) Create designated turning areas and strictly prohibit any off-road driving or parking of vehicles and machinery outside designated areas.	Compliant	No off-road driving was observed during the site visits.	Sufficient	
		(16) Keep the clearing of natural veldt to a minimum.	Not compliant	A large landing strip was built, which cleared an area of +/- 3-4 ha.	Sufficient	
		(19) It is desirable that community members be engaged to remove wood suitable for their purposes from areas to be cleared to alleviate the pressure of wood-harvesting currently on other areas of the land portions.	Not compliant	No proof has been provided that this was undertaken	Sufficient	
		(20) All remaining material of cleared shrubs and trees must be shredded and used as mulch.	Not compliant	No proof has been provided that this was undertaken	Sufficient	
		(21) Topsoil (the upper 25 cm of soil) is an important natural resource as it contains most of the geophytic storage organs as well as valuable soil seed resources necessary for re-vegetation; where it can (and then must) be stripped, never mix it with subsoil or any other material, store and protect it separately until it can be re-applied, minimise handling of topsoil.	Partially compliant	Topsoil has only been removed and stockpiled at the offices and laydown area. No topsoil has been removed from the mining area.	Sufficient	
		(21) Adherence to the comprehensive Plant Search and rescue, Re-vegetation and Alien Invasive Management plan (Appendix E of the Biodiversity Impact Report (Appendix G to this report)).	Not compliant	No search and rescue were conducted, and no alien and invasive species removal programme is implemented.	Sufficient	
		Avifauna –				
		(1) Leave, as far as possible, as much of the natural indigenous bush undisturbed and in its pristine state.	Partially compliant	The site is largely restricted to its approved footprint.	Sufficient	
		(2) Route connecting roads as close as is possible to already developed sites or roads.	Compliant	Existing roads were used for most of the site's roads	Sufficient	
		(3) Restrict or prohibit any off-road driving in areas of pristine indigenous bush.	Compliant	No off-road driving has been observed during the site visits. All travelling was restricted to the approved roads.	Sufficient	
		(4) Route power lines along these connecting roads, or if possible route them underground.	Compliant	Powerlines have been routed along the roads.	Sufficient	
		Bat Survey –				
		(1) Conserve as much of the natural vegetation as possible. Only create haul roads that are absolutely necessary.	Partially compliant	The site is largely restricted to its approved footprint.	Sufficient	
		(2) Discourage vehicles from driving through the natural vegetation where mining activities are not taking place.	Compliant	No off-road driving has been observed during the site visits. All travelling was restricted to the approved roads.	Sufficient	
		(3) Prohibit mining plant and trucks from washing or dumping material near a water course (wet or dry) to prevent the pollution of natural water bodies.	Not compliant	No washing near the natural water bodies observed however, wash water from the workshop is not contained and large-scale erosion has been observed from mining and stockpiling areas	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(4) Prohibit any chemical and/or heavy metal from being released into the environment.	Partially compliant	Chemical stores are available and mostly used. Only one or two small spillages was observed around the workshop and at the bin where the hazardous waste is stored.	Sufficient	
		(5) Manage all wastewater and stormwater to prevent pollution to water bodies.	Not compliant	Wash water from the workshop is not contained and large-scale erosion has been observed from mining and stockpiling areas	Sufficient	
		Recommendations as per comments received by the Department of Agriculture, Forestry, and Fisheries:				
		(1) The <i>Lydenburgia cassinoides</i> (Sekhukhune bushman's tea) is confined to the Sekhukhune District Municipality only, therefore as part of the search and rescue management plan must promote the conservation of this specie.	Not compliant	It could not be established that a search and rescue was conducted and, according to	Sufficient	
		(2) When constructing new roads, divergence of roads is recommended where protected trees will be affected.	Partially compliant	During the site visit, there were some protected trees that were observed within operational areas (roads) untouched, such as a <i>Boscia</i> sp. Near the offices.	Sufficient	
		(3) Relocation of protected trees should be adhered to, particularly all trees that are 1m and below. Relocation must be done under the supervision of a specialist to minimise the mortality rate.	Not compliant	No relocation was done.	Sufficient	
		Compliance with standards:				
		(1) Develop a plant species search and rescue management plan.	Partially compliant	No such plan was provided however the site do have a biodiversity study which can be used.	Sufficient	
		(2) Development of Mine Rehabilitation, decommissioning and mine closure liability Plan in compliance with GN R. 1147 of NEMA.	Compliant	The plans are available and being reviewed	Sufficient	
		(3) Develop and implement a soil conservation management plan.	Not compliant	No such plan was provided	Sufficient	
		(4) Apply for permits to remove protected species (provincial and national).	Not compliant	No permit was available. It could not be confirmed whether any protected species were situated on the footprint areas, although the likelihood would have been high based on the biodiversity report.	Sufficient	
Alien and invasive vegetation						
1. Access and hauling along roads i.e. during the construction of roads	irect Impact: Site clearing for roads, lay down areas, and mining area exposes the un-vegetated area to the influx of alien invasive vegetation causing Irreversible damage to the native fauna and flora species and loss of habitats.	Implementation of EMS:				
		(1) Development and implementation of an alien and invasive control plan	Not compliant	No such plan was provided	Sufficient	
		(2) Awareness training on the identification of weeds and alien species to employees responsible for the management of these species.	Not compliant	No awareness training on alien and invasive plant species	Sufficient	
		On-site mitigation measures:				

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(1) Alien vegetation growing on topsoil stockpiles must be removed immediately in a manner as to prevent re-growth.	Not compliant	No alien and invasive removal programme is available or being implemented	Sufficient	
2. Site clearing and topsoil stripping for lay down area and all related mining infrastructure	Direct Impact: Site clearing for roads, lay down areas, and mining area exposes the un-vegetated area to the influx of alien invasive vegetation causing Irreversible damage to the native fauna and flora species and loss of habitats.	(2) All disturbed areas to be monitored on a regular basis for exotic or invasive plant species and weeds.	Not compliant	No alien and invasive removal programme is available or being implemented	Sufficient	
		(3) Chemical removal shall be used in accordance with the manufacturer's specification for weeds where mechanical eradication/control is no longer effective.	Not applicable	No alien and invasive removal programme is being implemented	Sufficient	
		(4) The type of chemical to be utilised must be determined in consultation with a herbicide consultant and the Environmental Control Officer/Environmental Officer/SHEQ Officer.	Not applicable	No alien and invasive removal programme is being implemented	Sufficient	
		(5) Those exotic/invasive plant or weed which cannot be eradicated by means of herbicides, needs to be manually removed from site.	Not applicable	No alien and invasive removal programme is being implemented	Sufficient	
		(6) The herbicide consultant must have a Pest Control Operators licence.	Not applicable	No alien and invasive removal programme is being implemented	Sufficient	
2. Site clearing and topsoil stripping for lay down area and all related mining infrastructure	Direct Impact: Site clearing for roads, lay down areas, and mining area exposes the un-vegetated area to the influx of alien invasive vegetation causing Irreversible damage to the native fauna and flora species and loss of habitats.	(7) Control the type of material imported to site to ensure that soil contamination, in terms of weed and alien invasive plants does not occur.	Not applicable	No material imported to site	Sufficient	
		Legal requirements:				
		(1) Adherence to requirements stipulated by GN R. 598 of NEMBA.	Not compliant	No alien and invasive removal programme is available or being implemented	Sufficient	
		(2) Section 3: Category 1b Listed Invasive Species (A total number of 6 species were identified – Appendix G):				
		(2.1) Category 1b Listed Invasive Species are those species listed as such by notice in terms of section 70(1)(a) of the Act as species which must be controlled.	Not compliant	No alien and invasive removal programme is available or being implemented	Sufficient	
5. Mining offices (construction and operation) i.e. operation of training centres, offices and kitchen facilities	Direct Impact: Site clearing for roads, lay down areas, and mining area exposes the un-vegetated area to the influx of alien invasive vegetation causing Irreversible damage to the native fauna and flora species and loss of habitats.	(2.2) A person in control of a Category 1 b Listed Invasive Species must control the listed invasive species in compliance with sections 75(1), (2) and (3) of the Act.	Not compliant	No alien and invasive removal programme is available or being implemented	Sufficient	
		(2.3) If an Invasive Species Management Programme has been developed in terms of section 75(4) of the Act, a person must control the listed invasive species in accordance with such programme.	Not applicable	No alien and invasive removal programme is available or being implemented	Sufficient	
		(2.4) A person contemplated in sub-regulation (2) must allow an authorised official from the Department to enter onto the land to monitor, assist with or implement the control of the listed invasive species, or compliance with the Invasive Species Management Programme contemplated in section 75(4) of the Act.	Compliant	No authorised official has requested entry to the site in relation to the monitoring of alien and invasive plants species. A DMR official have requested access to the site for overall inspection and were not prohibited.	Sufficient	
		(3) Section 4. Category 2 Listed Invasive Species (One specie has been identified – Agave sisalana):				

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(3.1) Category 2 Listed Invasive Species are those species listed by notice in terms of section 70(1)(a) of the Act as species which require a permit to carry out a restricted activity within an area specified in the Notice or an area specified in the permit, as the case may be.	Not compliant	No alien and invasive removal programme is available or being implemented	Sufficient	
		(3.2) Unless otherwise indicated in the Notice, no person may carry out a restricted activity in respect of a Category 2 Listed Invasive Species without a permit.	Not compliant	No alien and invasive removal programme is available or being implemented	Sufficient	
		(3.3) A landowner on whose land a Category 2 Listed Invasive Species occurs or person in possession of a permit, must ensure that the specimens of the species do not spread outside of the land or the area specified in the Notice or permit.	Not compliant	No alien and invasive removal programme is available or being implemented	Sufficient	
		(3.4) If an Invasive Species Management Programme has been developed in terms of section 75(4) of the Act, a person must control the listed invasive species in accordance with such programme.	Not applicable	No alien and invasive removal programme is available or being implemented	Sufficient	
		(3.5) Unless otherwise specified in the Notice, any species listed as a Category 2 Listed Invasive Species that occurs outside the specified area contemplated in sub-regulation (1), must, for purposes of these regulations, be considered to be a Category 1 b Listed Invasive Species and must be managed according to Regulation 3.	Not applicable	No alien and invasive removal programme is available or being implemented	Sufficient	
		(3.6) Notwithstanding the specific exemptions relating to existing plantations in respect of Listed Invasive Plant Species published in Government Gazette No. 37886, Notice 599 of 1 August 2014 (as amended), any person or organ of state must ensure that the specimens of such Listed Invasive Plant Species do not spread outside of the land over which they have control.	Not compliant	No alien and invasive removal programme is available or being implemented	Sufficient	
		(4) Section 5. Category 3 Listed Invasive Species (One specie has been identified – <i>Morus alba</i>):				
		(4.1) Category 3 Listed Invasive Species are species that are listed by notice in terms of section 70(1)(a) of the Act, as species which are subject to exemptions in terms of section 71(3) and prohibitions in terms of section 71A of Act, as specified in the Notice.	Not compliant	No alien and invasive removal programme is available or being implemented	Sufficient	
		(4.2) Any plant species identified as a Category 3 Listed Invasive Species that occurs in riparian areas, must, for the purposes of these regulations, be considered to be a Category 1b Listed Invasive Species and must be managed according to regulation 3.	Not compliant	No alien and invasive removal programme is available or being implemented	Sufficient	
		(4.3) If an Invasive Species Management Programme has been developed in terms of section 75(4) of the Act, a person must control the listed invasive species in accordance with such programme.	Not applicable	No alien and invasive removal programme is available or being implemented	Sufficient	
		(5) When using herbicides and pesticides, requirements stipulated in section 7(2)(a)) of the Fertilizers, farm feeds, agricultural	Not applicable	No alien and invasive removal programme is available or being implemented	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		remedies, and stock remedies Act of 1947 must be considered.				
		(6) Requirements for the prohibition of spreading weeds stipulated in section 5 of the Conservation of Agricultural Resources Act (CARA) of 43 must be adhered with.	Not compliant	No alien and invasive removal programme is available or being implemented	Sufficient	
		(7) Regulation 15 of GN R.1048 published under CARA must be adhered with and considered as part of the alien invasive species management plan.	Not compliant	No alien and invasive removal programme is available or being implemented	Sufficient	
		Specialist recommendations:				
		(1) Wheels of large machinery should be checked prior to entering the site and cleared of seed material of alien invasive plants if transport routes go through infested areas (especially of species with spiny or bur-like seeds). Such seed must be destroyed.	Not applicable	Machines entering the site from outside use mainly tarred roads and do not enter or pass through infested areas	Sufficient	
		(3) If filling material is to be used, this should be sourced from areas free of invasive species	Not applicable	No rehab has taken place yet.	Sufficient	
		(4) Monitor the establishment of (alien) invasive species and remove as soon as detected, whenever possible before flowers or other regenerative material can be produced. Destruction of regenerative material by burning in a protected area is encouraged.	Not compliant	No alien and invasive removal programme is available or being implemented	Sufficient	
		(5) Adherence to the comprehensive Plant Search and rescue, Re-vegetation and Alien Invasive Management plan (Appendix E of the Biodiversity Impact Report (Appendix G to this report)).	Not compliant	No alien and invasive removal programme is available or being implemented	Sufficient	
		Compliance with standards:				
		(1) Develop and implement an alien eradication and control management plan.	Not compliant	No alien and invasive removal programme is available or being implemented	Sufficient	
Operation						
Vegetation and habitat loss						
18.Topsoil and subsoil stripping & stockpiling for mining operation area	Direct Impact: Clearing of site and stripping of topsoil leads to the loss of vegetation and habitats of macro and micro organisms. The loss of vegetation also affects the habitat of surrounding Fauna and Flora.	Implementation of EMS:				
		(1) Development of Mine Rehabilitation, decommissioning and mine closure liability Plan in compliance with GN R. 1147 of NEMA.	Compliant	A rehabilitation, decommissioning and closure plan is available, completed in accordance with GN R.1147 of NEMA.	Sufficient	
		(2) Develop and implement a plant species search and rescue management plan.	Not compliant	No proof could be provided of such a plan and no search and rescue has been done.	Sufficient	
		(3) Regular inspection of sensitive areas.	Partially compliant	No proof of inspection could be provided. This audit serves as an external inspection of the sensitive areas.	Sufficient	
		(4) A soil conservation and stockpiling plan to be developed and implemented.	Not compliant	A soil conservation plan could not be provided. Some topsoil stockpiles observed but very little erosion control measures. There is also a topsoil imbalance on site.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
19. Opencast mining excavations	Direct Impact: Improper rehabilitation measures implemented poses a risk of vegetation and habitat loss. The conditions for macro and micro organisms needs to be suitable for reinstatement of the ecosystem.	(5) Reporting and recording incidents related to unnecessary clearance of vegetation.	Not compliant	An entire landing strip were constructed (area cleared), with a footprint of about 3-4 ha, without it being reported.	Sufficient	
21. RoM & product stockpiling		(6) Ensuring corrective and preventative actions are taken to address nonconformities.	Not compliant	No action was taken to correct the unnecessary clearance of vegetation.	Sufficient	
22. Residue stockpiles		(7) Communicating findings of concern to I&AP.	Not compliant	No environmental communication done with I&AP.	Sufficient	
33. Rehabilitation of mining areas		(8) Record keeping of all removed/relocated species.	Not compliant	No records were provided, and no species were observed that were relocated.	Sufficient	
		On-site mitigation measures:				
		(1) Avoid clearing areas outside the development footprint.	Not compliant	An entire landing strip were constructed, with a footprint of about 3-4 ha, without it being reported.	Sufficient	
		(2) Avoid development in sensitive environments such as areas within pristine or valuable ecological significance.	Not compliant	An entire landing strip were constructed, with a footprint of about 3-4 ha, without it being reported.	Sufficient	
		(3) Before the commencement of any vegetation clearance, a search and rescue operation should take place identifying possible protected species as well as indigenous species.	Not compliant	No search and rescue were conducted	Sufficient	
		(4) An area should be identified to re-instate protected and indigenous areas.	Not compliant	No area identified or set aside to re-instate protected and indigenous areas	Sufficient	
		(5) If feasible an onsite nursery should be established and maintained.	Not compliant	No on-site nursery	Sufficient	
		Legal requirements:				
		(1) Section 28 of NEMA describes the duty of care and remediation of environmental damage.	Not compliant	Some issues observed such as vegetation disturbances from erosion of the discard	Sufficient	
		(2) A number of the proposed activities fall within or within close proximity to the Sekhukhune Centre of Endemism. Working outside the authorised footprints would require additional authorisation in terms of NEMA and The National Environmental Management: Biodiversity Act (NEMBA) of 2002.	Not compliant	An entire landing strip were constructed (area cleared), with a footprint of about 3-4 ha, outside of what was approved in the EMP.	Sufficient	
		(3) The removal or disturbance of listed protected species in terms of NEMBA, the Limpopo Environmental Management Act of 2003, and the National Forest Act of 1998 would require a permit.	Not applicable	No permit was available. It could not be confirmed whether any protected species were situated on the footprint areas, although the likelihood would have been high based on the biodiversity report.	Sufficient	
		Specialist recommendations:				
		Terrestrial Ecology –				
		(1) Prior to any new area being impacted by the mine, that area and a suitable buffer will have to be delineated and activities have to be preceded by a very thorough walkthrough, conducted between January and April, followed by the necessary plant	Not compliant	No proof that a walkthrough was done, or search and rescue undertaken	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		Search and Rescue operations where applicable.				
		(2) Themeda triandra – Diheteropogon amplexans Grasslands (High sensitivity rating – Avoid as far possible)				
		(2.1) Development in Grasslands should be limited to the absolute minimum, aiming for minimal to no alteration of the habitat configuration.	Compliant	Activities are situated on medium-low to medium-high sensitivity sites and outside of the no-go zones (see figure 9 in biodiversity specialist report). Only two river crossings go through the no-go zones, which could not be avoided.	Sufficient	
		(2.2) If some of these habitats are impacted or will be altered by the proposed development, all development must be preceded by a thorough footprint investigation followed by a Search and Rescue operation for all plants of conservation concern.	Compliant	No high sensitivity habitats affected (see figure 9 on page 29 of biodiversity report).	Sufficient	
		(2.3) Components of the proposed development that should under no circumstance be located in this vegetation would include:	Compliant	No high sensitivity habitats affected (see figure 9 on page 29 of biodiversity report).	Sufficient	
		(2.3.1) Buildings and/or ablution facilities;	Compliant	No high sensitivity habitats affected (see figure 9 on page 29 of biodiversity report).	Sufficient	
		(2.3.2) Any form of waste/soil/overburden disposal or stockpiling	Compliant	No high sensitivity habitats affected (see figure 9 on page 29 of biodiversity report).	Sufficient	
		(2.3.3) Tailings dams or processing plants; and	Compliant	No high sensitivity habitats affected (see figure 9 on page 29 of biodiversity report).	Sufficient	
		(2.3.4) Any form of storage of materials or machinery.	Compliant	No high sensitivity habitats affected (see figure 9 on page 29 of biodiversity report).	Sufficient	
		(3) Cyperus sexangularis – Flueggea virosa Riparian Vegetation (No Go Area – only suitable crossings permissible)				
		(3.1) Development in this vegetation/habitat and at least 50 m beyond should be limited to crossings of access roads only, aiming for minimal to no alteration of the habitat configuration.	Compliant	Activities are situated on medium-low to medium-high sensitivity sites and outside of the no-go zones (see figure 9 in biodiversity specialist report). Only two river crossings go through the no-go zones, which could not be avoided.	Sufficient	
		(3.2) Mining/development in this vegetation/habitat is strongly discouraged.	Compliant	Activities are situated on medium-low to medium-high sensitivity sites and outside of the no-go zones (see figure 9 in biodiversity specialist report). Only two river crossings go through the no-go zones, which could not be avoided.	Sufficient	
		(3.3) Where upstream vegetation will be obliterated or severely denuded, adequate storm water and erosion control measures must be put in place to slow down and disperse runoff volumes and prevent the degradation of other channels and riparian vegetation.	Partially compliant	There is no clear stormwater control around the mining area, and it has been clearly observed that erosion has deposited sediment and material on downstream vegetation.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(3.4) Where road crossings are necessary, channels may under no circumstance be sealed with any impermeable material, as this will lead to a loss of runoff- and related retention/replenishment of soil moisture reserves, nutrients and seeds.	Partially compliant	The river crossings observed had culverts and pipes installed to allow flow through although the crossing on the main road has shown some erosion after the crossing, indicating that the attenuation is not sufficient.	Sufficient	
		(3.5) Culverts must be designed in a way that water will never be concentrated to a width narrower than the actual channel, causing accelerated erosion during heavy downpours.	Partially compliant	The river crossings observed had culverts and pipes installed to allow flow through although the crossing on the main road has shown some erosion after the crossing, indicating that the attenuation is not sufficient.	Sufficient	
		(3.6) Components of the proposed development that may under no circumstance be located in or within 100 m of any drainage would include:	Compliant	No activities are within the 100m buffer except the stream crossings	Sufficient	
		(3.6.1) Buildings and/or ablution facilities;	Compliant	No activities are within the 100m buffer except the stream crossings	Sufficient	
		(3.6.2) Any form of waste/soil/overburden disposal or stockpile;	Compliant	No activities are within the 100m buffer except the stream crossings	Sufficient	
		(3.6.3) Tailings dams or processing plants; and	Compliant	No activities are within the 100m buffer except the stream crossings	Sufficient	
		(3.6.4) Any form of storage of materials or machinery	Compliant	No activities are within the 100m buffer except the stream crossings	Sufficient	
		(4) <i>Acacia tortilis</i> – <i>Dichrostachys cinerea</i> Dry Mixed Bushveld (Medium Low sensitivity)				
		(4.1) It is recommended that if additional space is required in future for any additional infrastructure, this will be situated on the more disturbed sections of this vegetation.	Compliant	No new activities undertaken except the landing strip equally distributed between the medium-high and medium-low areas.	Sufficient	
		(4.2) Community members should be engaged to clear out as much wood as possible from areas to be developed to alleviate the wood-clearing of more valuable large trees in the area.	Not compliant	No proof has been provided that this was undertaken	Sufficient	
		(4.3) Runoff from any sealed or bare surface must be contained to prevent the erosion of the donga areas and drainage lines below these plains.	Partially compliant	Runoff control from cleared areas are only implemented around the offices and laydown area. All other areas have no runoff control and significant erosion has been observed while on site.	Sufficient	
		(4.4) Mine management of the Spitsvlei Project has indicated that they will attempt, where possible, to create more grazing for the Dithamaga community by trying to clear some of the encroached bush to allow perennial grasses to become re-established. For this, it was strongly advised against removing all vegetation with a bulldozer. Rather, the following should be done to break the sealed upper surface and reduce sheet erosion:				
		(4.4.1) With a Ripper only, rip sections of up to 5 m wide along the contour, alternating with ± 5 m of bushveld as it is;	Not compliant	No proof has been provided that this was undertaken	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(4.4.2) Rips should be at least 500 mm deep, and invasive thorn bushes uprooted to that depth as well to ensure their resprouting capacity from the below-ground lignotuber is also eradicated;	Not compliant	No proof has been provided that this was undertaken	Sufficient	
		(4.4.3) If possible, hand-collected seeds from surrounding areas should be re-introduced to the rips;	Not compliant	No proof has been provided that this was undertaken	Sufficient	
		(4.4.4) Use the cleared thorn bushes to loosely brush-pack the area - with the branching side facing upslope	Not compliant	No proof has been provided that this was undertaken	Sufficient	
		(5) <i>Kirkia wilmsii</i> – <i>Terminalia prunioides</i> variable Bushveld (Medium-High sensitivity – Avoid as far possible)				
		(5.1) Mining/development in this vegetation/habitat should be limited to the absolute minimum, aiming for minimal alteration of the habitat configuration.	Partially compliant	The mining area is situated in the medium-high sensitivity area and cannot be relocated as it has to follow the reef line. Roughly half of the landing strip has been constructed inside this area.	Sufficient	
		(5.2) This is most important within 100 m of any mountain streams and drainages, to prevent the accelerated erosion of lower-lying plains and fluvial systems.	Compliant	No activities are within the 100m buffer except the stream crossings	Sufficient	
		(5.3) If some of these habitats are impacted or will be altered by the proposed development, newly created slopes should preferably be shallower than the original slopes, but never steeper to enable a gradual re-establishment of the woody and herbaceous layer.	Partially compliant	See the detailed rehabilitation plan. Some of the slopes near the pits are at angle of repose, which is +/- 37°, while the rest of the pits will be filled and sloped to equal or lower than 1:4 (14°). The re-shaping of the steeper slopes will be investigated in future as reshaping it is currently flagged as a stability risk.	Sufficient	
		(5.4) After decommissioning, it will be important to facilitate the re-establishment of a diverse vegetation layer as soon as possible.	Not applicable	No decommissioning currently. Included in the rehabilitation plans	Sufficient	
		(6) <i>Hippobromus pauciflorus</i> – <i>Rhoicissus tridentata</i> Rock Outcrops (High sensitivity – Treat as No Go Areas as far possible)				
		(6.1) Same requirements as stipulated under (5).	Not applicable	See points 5	Sufficient	
		(7) <i>Combretum hereroense</i> – <i>Euclea sekhukhuniensis</i> low bushveld (No Go, only limited access roads permissible)				
		(7.1) Mining/development in this vegetation/habitat is strongly discouraged, aiming for no alteration of the habitat.	Compliant	Activities are situated on medium-low to medium-high sensitivity sites and outside of the no-go zones (see figure 9 in biodiversity specialist report). Only two river crossings go through the no-go zones, which could not be avoided.	Sufficient	
		(7.2) Adjacent (upstream) areas also need to be cleared with care, ensuring that no excessive runoff is directed toward the donga plains.	Partially compliant	There is no clear stormwater control around the mining area, and it has been clearly observed that erosion has deposited sediment and material on downstream vegetation and could have or could increase donga formations.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(7.3) Although current dongas may be relatively old and stable, new and accelerated erosion must be monitored and mitigated at all times.	Partially compliant	There is no clear stormwater control around the mining area, and it has been clearly observed that erosion has deposited sediment and material on downstream vegetation and could have or could increase donga formations.	Sufficient	
		(7.4) After decommissioning, it will be important to facilitate the re-establishment of a dense herbaceous vegetation layer as soon as possible where these plains have been impacted.	Not applicable	No decommissioning currently. Included in the rehabilitation plans	Sufficient	
		(8) Rehabilitate and re-vegetate all areas that have been disturbed as soon as practically possible.	Not applicable	Only the river crossings pass through the no-go areas. The river crossings will only be rehabilitated at closure.	Sufficient	
		(9) Continually monitor the progress/success of rehabilitation efforts and adapt if rehabilitation targets are not met in acceptable timeframes	Not applicable	Only the river crossings pass through the no-go areas. The river crossings will only be rehabilitated at closure.	Sufficient	
		(10) As part of decommissioning, all stockpiles must be entirely obliterated and landscaped to merge into the surroundings.	Not applicable	No decommissioning currently. Included in the rehabilitation plans	Sufficient	
		(11) Keep main internal access route as planned along existing gravel roads.	Compliant	Main access road used follows existing gravel roads	Sufficient	
		(12) After the final layout of mining operation components has been approved, conduct a thorough footprint investigation to determine any protected or red data plant species population location and size, and animal burrows:	Not applicable	No decommissioning currently. Included in the rehabilitation plans	Sufficient	
		(12.1) Map (by GPS) as far as possible larger concentrations of large trees and protected species that could be avoided or must be relocated;	Not applicable	No activities are within this vegetation type.	Sufficient	
		(12.2) Protected trees, succulents and geophytes: must be relocated (trees as far as feasible);	Not applicable	No activities are within this vegetation type.	Sufficient	
		(12.3) Animal burrows: must be monitored by EO/ECO prior to ground clearing for activity/presence of animal species. If detected, such animals must be removed and relocated by a qualified professional/contractor.	Not applicable	No activities are within this vegetation type.	Sufficient	
		(13) Strictly restrict all movement of vehicles and heavy machinery to permissible areas, these being designated access roads, maintenance roads, turning points and parking areas. No off-road driving beyond designated areas may be allowed.	Compliant	Vehicle movement were restricted to the access roads and designated areas.	Sufficient	
		(14) Animals accidentally injured by moving vehicles or machinery must be taken to a local veterinarian to be treated or put down in a humane manner.	Not applicable	No accidents recorded	Sufficient	
		(15) Create designated turning areas and strictly prohibit any off-road driving or parking of vehicles and machinery outside designated areas.	Compliant	No off-road driving was observed during the site visits.	Sufficient	
		(16) Keep the clearing of natural veldt to a minimum.	Not compliant	A large landing strip was built, which cleared an area of +/- 3-4 ha.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(19) It is desirable that community members be engaged to remove wood suitable for their purposes from areas to be cleared to alleviate the pressure of wood-harvesting currently on other areas of the land portions.	Not compliant	No proof has been provided that this was undertaken	Sufficient	
		(20) All remaining material of cleared shrubs and trees must be shredded and used as mulch.	Not compliant	No proof has been provided that this was undertaken	Sufficient	
		(21) Topsoil (the upper 25 cm of soil) is an important natural resource as it contains most of the geophytic storage organs as well as valuable soil seed resources necessary for re-vegetation; where it can (and then must) be stripped, never mix it with subsoil or any other material, store and protect it separately until it can be re-applied, minimise handling of topsoil.	Partially compliant	Topsoil has only been removed and stockpiled at the offices and laydown area. No topsoil has been removed from the mining area.	Sufficient	
		(21) Adherence to the comprehensive Plant Search and rescue, Re-vegetation and Alien Invasive Management plan (Appendix E of the Biodiversity Impact Report (Appendix G to this report)).	Not compliant	No search and rescue were conducted, and no alien and invasive species removal programme is implemented.	Sufficient	
		Avifauna –				
		(1) Leave, as far as possible, as much of the natural indigenous bush undisturbed and in its pristine state.	Partially compliant	The site is largely restricted to its approved footprint.	Sufficient	
		(2) Route connecting roads as close as is possible to already developed sites or roads.	Compliant	Existing roads were used for most of the site's roads	Sufficient	
		(3) Restrict or prohibit any off-road driving in areas of pristine indigenous bush.	Compliant	No off-road driving has been observed during the site visits. All travelling was restricted to the approved roads.	Sufficient	
		(4) Route power lines along these connecting roads, or if possible route them underground.	Compliant	Powerlines have been routed along the roads.	Sufficient	
		Bat Survey –				
		(1) Conserve as much of the natural vegetation as possible. Only create haul roads that are absolutely necessary.	Partially compliant	The site is largely restricted to its approved footprint.	Sufficient	
		(2) Discourage vehicles from driving through the natural vegetation where mining activities are not taking place.	Compliant	No off-road driving has been observed during the site visits. All travelling was restricted to the approved roads.	Sufficient	
		(3) Prohibit mining plant and trucks from washing or dumping material near a water course (wet or dry) to prevent the pollution of natural water bodies.	Not compliant	No washing near the natural water bodies observed however, wash water from the workshop is not contained and large-scale erosion has been observed from mining and stockpiling areas	Sufficient	
		(4) Prohibit any chemical and/or heavy metal from being released into the environment.	Partially compliant	Chemical stores are available and mostly used. Only one or two small spillages were observed around the workshop and at the bin where the hazardous waste is stored.	Sufficient	
		(5) Manage all wastewater and stormwater to prevent pollution to water bodies.	Not compliant	Wash water from the workshop is not contained and large-scale erosion has been observed from mining and stockpiling areas	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		Recommendations as per comments received by the Department of Agriculture, Forestry, and Fisheries:				
		(1) The <i>Lydenburgia cassinoides</i> (Sekhukhune bushman's tea) is confined to the Sekhukhune District Municipality only, therefore as part of the search and rescue management plan must promote the conservation of this specie.	Not compliant	It could not be established that a search and rescue was conducted and, according to	Sufficient	
		(2) When constructing new roads, divergence of roads is recommended where protected trees will be affected.	Partially compliant	During the site visit, there were some protected trees that were observed within operational areas (roads) untouched, such as a <i>Boscia</i> sp. Near the offices.	Sufficient	
		(3) Relocation of protected trees should be adhered to, particularly all trees that are 1m and below. Relocation must be done under the supervision of a specialist to minimise the mortality rate.	Not compliant	No relocation was done.	Sufficient	
		Compliance with standards:				
		(1) Develop a plant species search and rescue management plan.	Partially compliant	No such plan was provided however the site do have a biodiversity study which can be used.	Sufficient	
		(2) Development of Mine Rehabilitation, decommissioning and mine closure liability Plan in compliance with GN R. 1147 of NEMA.	Compliant	The plans are available and being reviewed	Sufficient	
		(3) Develop and implement a soil conservation management plan.	Not compliant	No such plan was provided	Sufficient	
		(4) Apply for permits to remove protected species (provincial and national).	Not compliant	No permit was available. It could not be confirmed whether any protected species were situated on the footprint areas, although the likelihood would have been high based on the biodiversity report.	Sufficient	
Alien invasive vegetation						
18.Topsoil and subsoil stripping & stockpiling for mining operation area	Direct Impact: Site clearing for roads, lay down areas, and mining area exposes the un-vegetated area to the influx of alien invasive vegetation causing Irreversible damage to the native fauna and flora species and loss of habitats.	Implementation of EMS:				
		(1) Development and implementation of an alien and invasive control plan	Not compliant	No such plan was provided	Sufficient	
		(2) Awareness training on the identification of weeds and alien species to employees responsible for the management of these species.	Not compliant	No awareness training on alien and invasive plant species	Sufficient	
		On-site mitigation measures:				
19.Opencast mining excavations	Direct Impact: Site clearing for roads, lay down areas, and mining area exposes the un-vegetated area to the influx of alien invasive vegetation causing Irreversible	(1) Alien vegetation growing on topsoil stockpiles must be removed immediately in a manner as to prevent re-growth.	Not compliant	No alien and invasive removal programme is available or being implemented	Sufficient	
		(2) All disturbed areas to be monitored on a regular basis for exotic or invasive plant species and weeds.	Not compliant	No alien and invasive removal programme is available or being implemented	Sufficient	
		(3) Chemical removal shall be used in accordance with the manufacturer's specification for weeds where mechanical eradication/control is no longer affective.	Not applicable	No alien and invasive removal programme is being implemented	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
	damage to the native fauna and flora species and loss of habitats.	(4) The type of chemical to be utilised must be determined in consultation with a herbicide consultant and the Environmental Control Officer/Environmental Officer/SHEQ Officer.	Not applicable	No alien and invasive removal programme is being implemented	Sufficient	
21. RoM & product stockpiling	Direct Impact: Site clearing for roads, lay down areas, and mining area exposes the un-vegetated area to the influx of alien invasive vegetation causing Irreversible damage to the native fauna and flora species and loss of habitats.	(5) Those exotic/invasive plant or weed which cannot be eradicated by means of herbicides, needs to be manually removed from site.	Not applicable	No alien and invasive removal programme is being implemented	Sufficient	
		(6) The herbicide consultant must have a Pest Control Operators licence.	Not applicable	No alien and invasive removal programme is being implemented	Sufficient	
		(7) Control the type of material imported to site to ensure that soil contamination, in terms of weed and alien invasive plants does not occur.	Not applicable	No material imported to site	Sufficient	
		Legal requirements:				
33. Rehabilitation of mining areas	Direct Impact: Site clearing for roads, lay down areas, and mining area exposes the un-vegetated area to the influx of alien invasive vegetation causing Irreversible damage to the native fauna and flora species and loss of habitats.	(1) Adherence to requirements stipulated by GN R. 598 of NEMBA.	Not compliant	No alien and invasive removal programme is available or being implemented	Sufficient	
		(2) Section 3: Category 1b Listed Invasive Species (A total number of 6 species were identified – Appendix G):				
		(2.1) Category 1b Listed Invasive Species are those species listed as such by notice in terms of section 70(1)(a) of the Act as species which must be controlled.	Not compliant	No alien and invasive removal programme is available or being implemented	Sufficient	
		(2.2) A person in control of a Category 1 b Listed Invasive Species must control the listed invasive species in compliance with sections 75(1), (2) and (3) of the Act.	Not compliant	No alien and invasive removal programme is available or being implemented	Sufficient	
		(2.3) If an Invasive Species Management Programme has been developed in terms of section 75(4) of the Act, a person must control the listed invasive species in accordance with such programme.	Not applicable	No alien and invasive removal programme is available or being implemented	Sufficient	
		(2.4) A person contemplated in sub-regulation (2) must allow an authorised official from the Department to enter onto the land to monitor, assist with or implement the control of the listed invasive species, or compliance with the Invasive Species Management Programme contemplated in section 75(4) of the Act.	Compliant	No authorised official has requested entry to the site in relation to the monitoring of alien and invasive plants species. A DMR official have requested access to the site for overall inspection and were not prohibited.	Sufficient	
		(3) Section 4. Category 2 Listed Invasive Species (One specie has been identified – Agave sisalana):				
		(3.1) Category 2 Listed Invasive Species are those species listed by notice in terms of section 70(1)(a) of the Act as species which require a permit to carry out a restricted activity within an area specified in the Notice or an area specified in the permit, as the case may be.	Not compliant	No alien and invasive removal programme is available or being implemented	Sufficient	
		(3.2) Unless otherwise indicated in the Notice, no person may carry out a restricted activity in respect of a Category 2 Listed Invasive Species without a permit.	Not compliant	No alien and invasive removal programme is available or being implemented	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(3.3) A landowner on whose land a Category 2 Listed Invasive Species occurs or person in possession of a permit, must ensure that the specimens of the species do not spread outside of the land or the area specified in the Notice or permit.	Not compliant	No alien and invasive removal programme is available or being implemented	Sufficient	
		(3.4) If an Invasive Species Management Programme has been developed in terms of section 75(4) of the Act, a person must control the listed invasive species in accordance with such programme.	Not applicable	No alien and invasive removal programme is available or being implemented	Sufficient	
		(3.5) Unless otherwise specified in the Notice, any species listed as a Category 2 Listed Invasive Species that occurs outside the specified area contemplated in sub-regulation (1), must, for purposes of these regulations, be considered to be a Category 1 b Listed Invasive Species and must be managed according to Regulation 3.	Not applicable	No alien and invasive removal programme is available or being implemented	Sufficient	
		(3.6) Notwithstanding the specific exemptions relating to existing plantations in respect of Listed Invasive Plant Species published in Government Gazette No. 37886, Notice 599 of 1 August 2014 (as amended), any person or organ of state must ensure that the specimens of such Listed Invasive Plant Species do not spread outside of the land over which they have control.	Not compliant	No alien and invasive removal programme is available or being implemented	Sufficient	
		(4) Section 5. Category 3 Listed Invasive Species (One specie has been identified – Morus alba):				
		(4.1) Category 3 Listed Invasive Species are species that are listed by notice in terms of section 70(1)(a) of the Act, as species which are subject to exemptions in terms of section 71(3) and prohibitions in terms of section 71A of Act, as specified in the Notice.	Not compliant	No alien and invasive removal programme is available or being implemented	Sufficient	
		(4.2) Any plant species identified as a Category 3 Listed Invasive Species that occurs in riparian areas, must, for the purposes of these regulations, be considered to be a Category 1b Listed Invasive Species and must be managed according to regulation 3.	Not compliant	No alien and invasive removal programme is available or being implemented	Sufficient	
		(4.3) If an Invasive Species Management Programme has been developed in terms of section 75(4) of the Act, a person must control the listed invasive species in accordance with such programme.	Not applicable	No alien and invasive removal programme is available or being implemented	Sufficient	
		(5) When using herbicides and pesticides, requirements stipulated in section 7(2)(a)i) of the Fertilizers, farm feeds, agricultural remedies, and stock remedies Act of 1947 must be considered.	Not applicable	No alien and invasive removal programme is available or being implemented	Sufficient	
		(6) Requirements for the prohibition of spreading weeds stipulated in section 5 of the Conservation of Agricultural Resources Act (CARA) of 43 must be adhered with.	Not compliant	No alien and invasive removal programme is available or being implemented	Sufficient	
		(7) Regulation 15 of GN R.1048 published under CARA must be adhered with and considered as part of the alien invasive species management plan.	Not compliant	No alien and invasive removal programme is available or being implemented	Sufficient	
		Specialist recommendations:				

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(1) Wheels of large machinery should be checked prior to entering the site and cleared of seed material of alien invasive plants if transport routes go through infested areas (especially of species with spiny or bur-like seeds). Such seed must be destroyed.	Not applicable	Machines entering the site from outside use mainly tarred roads and do not enter or pass through infested areas	Sufficient	
		(3) If filling material is to be used, this should be sourced from areas free of invasive species	Not applicable	No rehab has taken place yet.	Sufficient	
		(4) Monitor the establishment of (alien) invasive species and remove as soon as detected, whenever possible before flowers or other regenerative material can be produced. Destruction of regenerative material by burning in a protected area is encouraged.	Not compliant	No alien and invasive removal programme is available or being implemented	Sufficient	
		(5) Adherence to the comprehensive Plant Search and rescue, Re-vegetation and Alien Invasive Management plan (Appendix E of the Biodiversity Impact Report (Appendix G to this report)).	Not compliant	No alien and invasive removal programme is available or being implemented	Sufficient	
		Compliance with standards:				
		(1) Develop and implement an alien eradication and control management plan.	Not compliant	No alien and invasive removal programme is available or being implemented	Sufficient	
Groundwater						
Construction						
Water level reduction						
2. Site clearing and topsoil stripping for lay down area and all related mining infrastructure	Direct Impact: The reduction in water levels as well as contamination of the water resource that may be caused by alternating the topography during site clearing and topsoil stripping poses a risk to affecting the surface and sub-surface water quality as well as the downstream users.	Implementation of EMS:				
		(1) Develop a water monitoring management plan.	Partially compliant	A monitoring plan is available from the EIA specialist report but is not implemented or revised.	Sufficient	
		(2) Record and report all incidents related to affecting water quality.	Not compliant	No incidents were reported, and various incidents were observed on site that should have been reported, especially concerning erosion and release of wash water from workshop.	Sufficient	
		(3) Development of Mine Rehabilitation, decommissioning and mine closure liability Plan in compliance with GN R. 1147 of NEMA.	Compliant	The plans are available and being reviewed	Sufficient	
16. Use of existing drilled / new boreholes	Direct Impact: Improper management of boreholes i.e. Pumping rates exceeding yield thresholds poses a risk to boreholes being pumped dry. Indirect Impact: Exposed boreholes may result in both sub-surface and surface water quality to be affected. Over exposing for	(4) Ensuring corrective and preventative actions are taken to address nonconformities.	Not compliant	Some general non-conformities were addressed in terms of dust, but no non-conformities were noted or raised for water impacts and none were addressed. Various non-conformities were noted.	Sufficient	
		(5) Communicating findings of concern to I&AP.	Partially compliant	No findings were raised yet as there were no audits and no water issues are discussed during community meetings. This audit however will go through a PP process.	Sufficient	
		(6) Development and implementation of a storm water	Partially	A SWMP are available but not implemented	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
	an extended time may lead to water shortages and poses a negative effect to the downstream users.	management plan.	compliant			
		(7) Regular inspection of erosion prone areas for signs of erosion.	Partially compliant	Regular observations done during site visits.	Sufficient	
		(8) A soil conservation and stockpiling plan to be developed and implemented.	Not compliant	No such plan has been provided.	Sufficient	
		<u>On-site mitigation measures:</u>				
		(1) Plan the final site layout in a manner as to reduce alteration of drainage patterns.	Compliant	The non-mining related footprints are outside of drainage lines. The mining area is within drainage lines, but no alternatives are available seen that mining has to follow the reef.	Sufficient	
		(2) In the event that drainage patterns will be altered, the natural flow to be diverted.	Not compliant	Where the mining has crossed the drainage lines no diversion was done as no stormwater mitigations are implemented.	Sufficient	
		(3) Any diversions to be in such a manner as to avoid erosion formation or pollution through siltation and sedimentation.	Not applicable	No diversions done	Sufficient	
		(4) Ensure water quality complies with the requirements stipulated by the Water Use Licence conditions.	Not applicable	No water use licence available	Sufficient	
		(5) Channels and drainage systems required to divert the flow of drainage lines to be designed by a civil engineer, taking into consideration the peak volumes and flow.	Compliant	Storm water designs are available and was done by a registered civil engineer.	Sufficient	
		(6) Ensure rehabilitation measures are according to rehabilitation plan and that measures are taken to prevent the formation of erosion dongas or rills.	Partially compliant	The rehabilitation is not up to date and no storm water measures implemented. The rehab plan is however being revised.	Sufficient	
		<u>Legal requirements:</u>				
		(1) A Water Use Licence to be obtained for all river crossings or development of infrastructure within or within close proximity to a watercourse as defined by the National Water Act, act no of 1996.	Not compliant	No WUL available	Sufficient	
		(2) Requirements stipulated by GN R. 704 to be considered in the final site layout plan by the appointed engineers.	Compliant	R 704 was taken into consideration in the storm water designs.	Sufficient	
		<u>Specialist recommendations:</u>				
		<u>Geohydrology –</u>				
		(1) Development of an environmental monitoring programme in order to monitor the groundwater quality and groundwater level changes up- and downstream of the proposed open cast mine workings. (2) Collected monitoring data (quarterly) may be used for future model updates (e.g. every second year).	Partially compliant	A groundwater monitoring programme is available in the specialist reports. No monitoring however is being done and only the baseline qualities are available.	Sufficient	
		(3) A number of geosites (i.e. boreholes, springs and surface water drainages) and newly proposed boreholes were identified (refer to the Geohydrological report in Appendix M) to be included into a monthly/quarterly monitoring programme.	Not compliant	These have not been included into the programme	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(4) The parameters to be analysed should comprise the following: Physical-chemical parameters (pH, EC, TDS);Major anions (F, Cl, NO3, SO4, HCO3, NH4, PO4,);Major cations (K, Na, Mg, Ca, NH4,); and Other elements/metals (Fe, Mn, Zn, Pb, Co, Cr, Cr (VI),).	Not applicable	No monitoring done	Sufficient	
		(5) Emphasis should be placed on monitoring of groundwater levels prior mining and during the operation phase as well as to establish the origin of the elevated nitrate concentrations in the project area.	Partially compliant	Pre-mining water levels are available as part of the baseline studies. No operational monitoring done currently.	Sufficient	
		(6) Recording of pit dewatering rates. Initial monthly (and later quarterly) sampling and analysis (major and trace elements) of pumped water.	Not applicable	The operation has advised that no water seeps into the pits and no dewatering is being done.	Sufficient	
		Hydrology –				
		(1) A number of monitoring sample points have been identified in the Hydrological report (Appendix L). Additional sampling points have been recommended and should be included in the final water monitoring plan.	Partially compliant	The monitoring programme is still largely as per the specialist reports.	Sufficient	
		(2) As part of the monitoring program going forward, samples should be taken monthly for at least the first year of operation. This can be revised to quarterly monitoring if no concerns are highlighted with the approval of DWAS.	Not compliant	No monthly monitoring	Sufficient	
		(3) The monitoring should include the standard analysis of major cations/anions as well as ICP scan for metals.	Not applicable	No monitoring is done	Sufficient	
		(4) A conceptual storm water management plan (Appendix L) has been developed based on the requirements of GN R. 704 of the National Water Act of 1998.	Not applicable	Noted	Sufficient	
		(5) Implementation of the guidance provided by the South African National Roads Agency Limited (SANRAL) drainage manual. This document provides guidance on maximum permissible velocities for grass covers to avoid erosion and should be consulted during the detailed design phase.	Not compliant	No storm water measures implemented around the mining area with large scale erosion observed. Some stormwater controls are implemented around the offices and ore stockpile areas.	Sufficient	
		Compliance with standards:				
		(1) Develop and implement a water management plan and specifically include measures to be implemented to reduce the impact on surface and groundwater reduction.	Partially compliant	Water management measures are available as part of the EMP, with additional detailed storm water designs done by civil engineers. These are however largely not implemented.	Sufficient	
		(2) Ensure compliance with the issued WUL requirements.	Not applicable	No WUL available	Sufficient	
		(3) Develop and implement a storm water management plan and specifically address the diversion of "clean" water into the natural drainage lines.	Partially compliant	A detailed storm water design was done by civil engineers and includes diversion of clean storm water.	Sufficient	
Water storage						
7. Water storage	Direct Impact: Improper management of water storage	Implementation of EMS:				
		(1) Water usage monitoring plan to be developed and	Compliant	Water usage monitored through invoices from	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
facilities	facilities i.e. Not inspecting or regularly maintaining the storage tanks poses a risk of leaks and contamination.	implemented.		LWUA.		
		(2) Create awareness of water conservation.	Not compliant	No environmental awareness training is being done	Sufficient	
		(3) Regular inspections of water storage facilities.	Compliant	Storage tanks (JoJo) are inspected regularly	Sufficient	
		(4) Reporting and recording of water management related incidents.	Not applicable	No incident registers available	Sufficient	
		On-site mitigation measures:				
		(1) Filtered or treated water from PCD's may be used for dust suppression should they conform to the sediment load requirements or other quality requirements as specified by the Water Use Licence issued by the Department of Water Affairs and sanitation.	Not applicable	No PCD's	Sufficient	
		(2) Monitor water usage and ensure that areas of waste are identified and minimised.	Compliant	Water usage monitored through invoices from LWUA.	Sufficient	
		(3) Where possible, reuse water from the PCD's for dust suppression on the roads.	Not applicable	No PCD's	Sufficient	
		(4) Water may only be abstracted from the approved abstraction points once all grey water or run-off water complying with the quality requirements has been utilised for the purposes of dust suppression. (5) The volume of water abstracted may not exceed the limits stipulated by DWAS by more than 5% on an annual basis.	Partially compliant	No water abstracted. Water released do not comply with the quality limits stipulated by DWS.	Sufficient	
		(6) Water storage facilities to be inspected on a weekly basis to ensure no leaks or contamination of water source.	Partially compliant	The storage tanks are inspected regularly. It could not be confirmed whether it is done weekly. No visible leaks or contamination observed during the audit.	Sufficient	
		(7) Water storage facilities and infrastructures to be maintained to a good working condition at all times.	Compliant	The storage facilities observed during the audit were in a good working condition.	Sufficient	
		Legal requirements:				
		(1) A Water Use Licence to be obtained for all river crossings or development of infrastructure within or within close proximity to a watercourse as defined by the National Water Act, act no of 1996.	Not compliant	No WUL available	Sufficient	
		Compliance with standards				
		(1) Develop and implement a water management plan specifically addressing the storage of water as well as the frequent inspections of storage facilities.	Not compliant	No water management plan was provided.	Sufficient	
Contamination of groundwater resources						
8. Pollution Control Dams (PCD's) i.e. Construction and	Direct Impact: In the event that PCD's are not constructed in a way to avoid seepage to the surrounding environment or if not maintained, it poses a risk of	Implementation of EMS:				
		(1) Development and implementation of a water monitoring program.	Partially compliant	A groundwater monitoring programme is available in the specialist reports. No monitoring however is being done and only the baseline qualities are available.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
operation	contaminating water resources within close proximity to the facility.	(2) Development and implementation of an Integrated Water and Waste Management Plan (IWWMP) (3) Development and implementation of a storm water management plan.	Not compliant	No IWWMP is available. A storm water design has been done for the entire site but is not implemented.	Sufficient	
		(4) Regular inspections of all areas posing a risk of contaminating water resources.	Not compliant	Stockpiles and workshops not inspected regularly.	Sufficient	
		(5) Reporting and recording all related incidents according to a developed procedure.	Not compliant	No incidents were reported, and various incidents were observed on site that should have been reported, especially concerning erosion and release of wash water from workshop.	Sufficient	
9.Stores, workshops & wash bays	Direct Impact: Improper management of effluent from store, workshops, and wash bays poses a high risk to contaminating water resources. Indirect Impact: Over an extended period of time the exposure to contamination will cause the degradation of fauna and flora habitats as well as affect the surface and sub-surface water quality.	(6) Develop and implement an emergency preparedness plan.	Partially compliant	An emergency plan is available but does not include sewage spills, Hazchem spills, or other water contamination emergencies.	Sufficient	
		(7) Ensuring corrective and preventative actions are taken to address nonconformities.	Not compliant	Some general non-conformities were addressed in terms of dust, but no non-conformities were noted or raised for water impacts and none were addressed. Various non-conformities were noted.	Sufficient	
		(8) Communicating findings of concern to I&AP.	Partially compliant	No findings were raised yet as there were no audits and no water issues are discussed during community meetings. This audit however will go through a PP process.	Sufficient	
10. Ablutions & change house with sewage treatment plant	Direct Impact: Improper management of effluent from ablation facilities, change houses, and sewage treatment plant poses a high risk to contaminating water resources. Indirect Impact: Over an extended period of time the exposure to contamination will cause the degradation of fauna and flora habitats as well as affect the surface and sub-surface water quality.	<u>On-site mitigation measures:</u>				
		(1) All sources of process water must be identified and quantified for the life cycle of the authorised activities.	Not compliant	All sources of process water have not been identified and quantified (such as in a water balance).	Sufficient	
		(2) A wastewater management system must be installed complying with regal requirements.	Partially compliant	A French drain system is available for the "grey water". Sumps and collection channels are available at the Hazchem storage facility but are not functional. The wash water from the workshop is not controlled.	Sufficient	
		(3) A water use licence for wastewater storage facilities to be obtained.	Not applicable	No need to licence the current wastewater storage facilities.	Sufficient	
		(4) All wastewater management facilities to be designed by a qualified engineer.	Compliant	The current wastewater facilities do not necessarily require a design by a qualified engineer. The storm water dams and PCD's have been designed by a qualified engineer.	Sufficient	
		(5) Wash bays, service areas, and fuel storage areas may not be located within the 1:100-year flood line or horizontal distance of 100 m (whichever is greater) of a watercourse or drainage line.	Compliant	These facilities were not located within the 1:100-year flood line.	Sufficient	
11. Fuel	Direct Impact: The construction	(6) No environmentally harmful detergents may be used.	Compliant	No environmentally harmful detergents are used.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
operating power generators	of improper generator facilities poses a risk of the surrounding environment to be exposed to continuous leaking of hydrocarbons leading possibly contaminating both surface and sub-surface water sources as well as the soils surrounding the facility.	(7) Workshops, refuelling depots and washing areas shall be bunded.	Partially compliant	The Hazchem area is bunded, the workshop is concreted and sloped, the fuel tanks are bunded. The wash water from workshop is however not contained and there was a fuel tank on a stand that was not bunded.	Sufficient	
		(8) All bunded areas to be constructed in a way as to avoid seepage to the surrounding environment as well as be able to contain its content to a capacity of 110%.	Compliant	The bunded areas are concrete lined and have 110% capacity.	Sufficient	
		(9) Water from wash bays, service areas and fuel storage areas must be discharged into oil separators and sumps.	Not compliant	Wash water are not directed to a oil separator.	Sufficient	
		(10) Oils collected in this manner should be retained in a safe holding tank and removed from site by specialist oil recycling company or disposal at approved waste disposal sites.	Compliant	Used oil is stored in the Hazchem area and removed/collected by EWOR (Pty) Ltd. for recycling.	Sufficient	
13. Fuel storage	Direct Impact: The construction of improper storage facilities poses a risk of the surrounding environment to be exposed to continuous leaking of hydrocarbons leading possibly contaminating both surface and sub-surface water sources as well as the soils surrounding the facility.	(11) No drainage from fuel storage areas to be permitted.	Compliant	Fuel storage bunded with no drainage from the bund area.	Sufficient	
		(12) Never hose oil or fuel spills into storm water drain or sewer, or into the surrounding natural environment.	Partially compliant	The area around the workshop and refuelling site was clean and neat with no visible spillages or wash water or hosed contamination. The wash water from the workshop goes into a sump but then overflow into the storm water drain.	Sufficient	
		(13) Any contaminated storm water and other run-off from dirty areas to be disposed of in the suitably designed PCD's.	Not compliant	No PCD's are available.	Sufficient	
		(14) Any spill which may contaminate water must be treated according to the approved spill management procedure.	Partially compliant	Some spills observed in the bunded areas were treated with absorbent indicating that the spill clean-ups are taking place. These absorbents were not all removed during the audit.	Sufficient	
		(15) Contain oil or fuel spills in water using an approved oil absorbent fibre.	Compliant	Absorbents were available and used.	Sufficient	
		(16) Grey water not deemed suitable for dust suppression must be disposed of with other wastewater in the designated and suitably designed PCD.	Compliant	No PCD available. Grey water is disposed into the French drains (septic tank).	Sufficient	
		(17) Wastewater as well as spilled fuel collected within bunded areas and refuelling areas shall be disposed of or treated as hazardous waste.	Compliant	The spills observed in the bunded areas were treated with absorbent and removed to the hazardous waste bin.	Sufficient	
		(18) Avoid unnecessary alteration of drainage lines.	Compliant	No unnecessary alterations were done. The alterations that occurred is in the mining area, which has no alternative seen that the mining has to follow the reef.	Sufficient	
		(19) Avoid locating lay down areas, wash bays, workshops etc. within the 1:50 year flood line or within horizontal distance of 100 m (whichever is greater) of a water course.	Compliant	These areas are not situated in the 1:50 year flood line.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(20) Contain contaminated runoff from dirty areas (i.e. lay down areas, RoM and product stockpile areas, workshops, fuelling bays etc.) in suitable designed PCD's.	Not compliant	No PCD's are available.	Sufficient	
		(21) Contaminated runoff to be treated and re-used for processing water or dust suppression in dirty areas only when complying with legal requirements or water quality standards specified in the Water Use Licence.	Not compliant	Contaminated runoff is not treated or captured seen that no PCD's are available. No WUL is also available.	Sufficient	
		(22) Do not locate any ablution facilities, chemical toilets, sanitary convenience, septic tanks, or French drains within the 1:100-year flood line, or within a horizontal distance of 100 m (whichever is greater) of any watercourses.	Compliant	The French drain and office area is not situated in the 100m buffer or flood line.	Sufficient	
		(23) Do not allow the use of any drainage line or wetland for swimming, bathing, or cleaning of clothing, tools or equipment.	Compliant	No such activities are done in the drainage lines	Sufficient	
		(24) Prevent the discharge of water containing polluting matter or visible suspended materials directly into drainage lines or streams.	Not compliant	Erosion is observed all around site, which releases suspended solids into the drainage lines.	Sufficient	
		(25) Deflect any unpolluted water/runoff away from any dirty area.	Partially compliant	Clean water diversions are implemented around the offices, workshop areas but no diversion is available around the mining area.	Sufficient	
		(26) Ensure that no storm water is allowed to enter any drainage installation for the reception, conveyance, storage, and or treatment of sewage.	Not compliant	Dirty storm water enters the drainage line from the mining area.	Sufficient	
		(27) Before any water is permitted to enter natural drainage lines, the quality of the water must comply with the standards contained within the Water Use Licensing conditions authorised by the DWAS.	Not applicable	No WUL is available.	Sufficient	
		(28) Ensure water passing through vehicle wash bays and workshops pass through oil separators before passing into conservancy tank.	Not compliant	Wash water from the workshops do not pass through any oil separators.	Sufficient	
		(29) Avoid unnecessary cutting roads through river, stream banks as this may lead to erosion causing siltation of streams and downstream dams.	Compliant	The roads that crosses drainage lines and streams are only the necessary roads where no alternatives are available.	Sufficient	
		<u>Legal requirements:</u>				
		(1) Obtain a Water Use Licence from the DWAS.	Not compliant	No WUL available.	Sufficient	
		<u>Specialist recommendations:</u>				
		Geohydrology –				
		(1) Development of an environmental monitoring programme in order to monitor the groundwater quality and groundwater level changes up- and downstream of the proposed open cast mine workings. (2) Collected monitoring data (quarterly) may be used for future model updates (e.g. every second year).	Partially compliant	A groundwater monitoring programme is available in the specialist reports. No monitoring however is being done and only the baseline qualities are available.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(3) A number of geosites (i.e. boreholes, springs and surface water drainages) and newly proposed boreholes were identified (refer to the Geohydrological report in Appendix M) to be included into a monthly/quarterly monitoring programme.	Partially compliant	A groundwater monitoring programme is available in the specialist reports. No monitoring however is being done and only the baseline qualities are available.	Sufficient	
		(4) The parameters to be analysed should comprise the following: Physical-chemical parameters (pH, EC, TDS);Major anions (F, Cl, NO3, SO4, HCO3, NH4, PO4,);Major cations (K, Na, Mg, Ca, NH4,); and Other elements/metals (Fe, Mn, Zn, Pb, Co, Cr, Cr (VI),).	Not applicable	Monitoring not done	Sufficient	
		(5) Emphasis should be placed on monitoring of groundwater levels prior mining and during the operation phase as well as to establish the origin of the elevated nitrate concentrations in the project area.	Partially compliant	Pre-mining water levels are available as part of the baseline studies. No operational monitoring done currently.	Sufficient	
		(6) Recording of pit dewatering rates. Initial monthly (and later quarterly) sampling and analysis (major and trace elements) of pumped water.	Not applicable	The operation has advised that no water seeps into the pits and no dewatering is being done.	Sufficient	
		Compliance with standards:				
		(1) Develop and implement an Integrated Wastewater Management Plan (IWWMP).	Not compliant	No IWWMP available or implemented	Sufficient	
		(2) Develop and implement a water monitoring schedule according to the water management plan.	Partially compliant	A groundwater monitoring programme is available in the specialist reports. No monitoring however is being done and only the baseline qualities are available.	Sufficient	
		(3) Ensure compliance with the WUL conditions.	Not applicable	No WUL available	Sufficient	
		(4) Develop an emergency preparedness plan addressing the prevention and management of incidents related to water contamination.	Not compliant	Not included into the emergency procedure.	Sufficient	
Operation						
Water level reduction						
18.Topsoil and subsoil stripping & stockpiling for mining operation area	Direct Impact: The reduction in water levels as well as contamination of the water resource that may be caused by alternating the topography during site clearing and topsoil stripping poses a risk to affecting the surface and sub-surface water quality as well as the downstream users.	Implementation of EMS:				
		(1) Develop a water monitoring management plan.	Partially compliant	A monitoring plan is available from the EIA specialist report but is not implemented or revised.	Sufficient	
		(2) Record and report all incidents related to affecting water quality.	Not compliant	No incidents were reported, and various incidents were observed on site that should have been reported, especially concerning erosion and release of wash water from workshop.	Sufficient	
		(3) Development of Mine Rehabilitation, decommissioning and mine closure liability Plan in compliance with GN R. 1147 of NEMA, addressing the rehabilitation measures related to reinstatement of drainage lines.	Compliant	The plans are available and being reviewed	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(4) Ensuring corrective and preventative actions are taken to address nonconformities.	Not compliant	Some general non-conformities were addressed in terms of dust, but no non-conformities were noted or raised for water impacts and none were addressed. Various non-conformities were noted.	Sufficient	
		(5) Communicating findings of concern to I&AP.	Partially compliant	No findings were raised yet as there were no audits and no water issues are discussed during community meetings. This audit however will go through a PP process.	Sufficient	
		(6) Development and implementation of a storm water management plan.	Partially compliant	A SWMP are available but not implemented	Sufficient	
		(7) Regular inspection of erosion prone areas for signs of erosion.	Partially compliant	Regular observations done during site visits.	Sufficient	
27. River crossings	Direct Impact: Improper installation of river crossing infrastructures poses a risk in water level reduction and contamination of downstream water users i.e. through blocking of the natural flow of streams/ivers. Indirect Impact: The reduction of water levels of rivers/watercourses poses a risk of affecting both surface and sub-surface water resources.	(8) A soil conservation and stockpiling plan to be developed and implemented.	Not compliant	No such plan has been provided.	Sufficient	
		(9) Create awareness of water conservation.	Not compliant	No awareness is done on water conservation.	Sufficient	
		<u>On-site mitigation measures:</u>				
		(1) River crossings or storm water channels shall be designed by a registered civil engineer.	Compliant	The storm water designs were done by a registered civil engineer.	Sufficient	
		(2) Measures to avoid or prevent erosion formation must be incorporated into the designs of the infrastructure associated with the river crossings.	Compliant	The storm water designs have been done to prevent erosion.	Sufficient	
		(3) During construction through drainage lines, the majority of the flow must be allowed to pass down the stream. In stream diversions should be used rather than the construction of new channels.	Partially compliant	Where possible, the stream diversions have been designed to allow water to pass down the stream.	Sufficient	
		(4) Filtered or treated water from PCD's may be used for dust suppression should they conform to the sediment load requirements or other quality requirements as specified by the Water Use Licence issued by the Department of Water Affairs and sanitation.	Not applicable	No PCD's	Sufficient	
		(5) Monitor water usage and ensure that areas of waste are identified and minimised.	Not compliant	Water usage are monitored using the LWUA invoices, but minimisation is not identified.	Sufficient	
		(6) Where possible, reuse water from the PCD's for dust suppression on the roads.	Not applicable	No PCD's	Sufficient	
		(7) in the event that RoM product materials requires the usage of water during processing, the holder of the environmental authorisation must ensure that these activities comply with the current authorisation and ensure that a WUL are obtained.	Not applicable	No processing is being done.	Sufficient	
		<u>Legal requirements:</u>				
28. Water supply (potable & process)	Direct Impact: Water wastage and over exploitation of water resources poses a risk in water level reduction.	(1) A Water Use Licence to be obtained for all river crossings or development of infrastructure within or within close proximity to a watercourse as defined by the National Water Act, act no of 1996.	Not compliant	No WUL available	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
	Indirect Impact: The reduction of water levels of rivers/watercourses/underground water tables poses a risk of affecting both surface and sub-surface water resources.	(2) Requirements stipulated by GN R. 704 to be considered in the final site layout plan by the appointed engineers.	Compliant	R 704 was taken into consideration in the storm water designs.	Sufficient	
		Specialist recommendations:				
		Geohydrology –				
		(1) Development of an environmental monitoring programme in order to monitor the groundwater quality and groundwater level changes up- and downstream of the proposed open cast mine workings. (2) Collected monitoring data (quarterly) may be used for future model updates (e.g. every second year).	Partially compliant	A groundwater monitoring programme is available in the specialist reports. No monitoring however is being done and only the baseline qualities are available.	Sufficient	
		(3) A number of geosites (i.e. boreholes, springs and surface water drainages) and newly proposed boreholes were identified (refer to the Geohydrological report in Appendix M) to be included into a monthly/quarterly monitoring programme.	Not compliant	These have not been included into the programme	Sufficient	
		(4) The parameters to be analysed should comprise the following: Physical-chemical parameters (pH, EC, TDS);Major anions (F, Cl, NO3, SO4, HCO3, NH4, PO4,);Major cations (K, Na, Mg, Ca, NH4,); and Other elements/metals (Fe, Mn, Zn, Pb, Co, Cr, Cr (VI),).	Not applicable	No monitoring done	Sufficient	
32. Water Management	Direct Impact: Improper management of water usage and installation of improper storm water features and infrastructure poses a risk of reducing the water levels for downstream users. Indirect Impact: The reduction of water levels of rivers/watercourses/underground water tables poses a risk of affecting both surface and sub-surface water resources.	(5) Emphasis should be placed on monitoring of groundwater levels prior mining and during the operation phase as well as to establish the origin of the elevated nitrate concentrations in the project area.	Partially compliant	Pre-mining water levels are available as part of the baseline studies. No operational monitoring done currently.	Sufficient	
		(6) Recording of pit dewatering rates. Initial monthly (and later quarterly) sampling and analysis (major and trace elements) of pumped water.	Not applicable	The operation has advised that no water seeps into the pits and no dewatering is being done.	Sufficient	
		Hydrology –				
		(1) A number of monitoring sample points have been identified in the Hydrological report (Appendix L). Additional sampling points have been recommended and should be included in the final water monitoring plan.	Partially compliant	The monitoring programme is still largely as per the specialist reports.	Sufficient	
		(2) As part of the monitoring program going forward, samples should be taken monthly for at least the first year of operation. This can be revised to quarterly monitoring if no concerns are highlighted with the approval of DWAS.	Not compliant	No monthly monitoring	Sufficient	
		(3) The monitoring should include the standard analysis of major cations/anions as well as ICP scan for metals.	Not applicable	No monitoring is done	Sufficient	
		(4) A conceptual storm water management plan (Appendix L) has been developed based on the requirements of GN R. 704 of the National Water Act of 1998.	Not applicable	Noted	Sufficient	
		(5) Implementation of the guidance provided by the South African National Roads Agency Limited (SANRAL) drainage manual. This document provides guidance on maximum permissible velocities for grass covers to avoid erosion and should be consulted during the detailed design phase.	Not compliant	No storm water measures implemented around the mining area with large scale erosion observed. Some stormwater controls are implemented around the offices and ore stockpile areas.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		Compliance with standard:				
		(1) Develop and implement a water management plan and specifically include measures to be implemented to reduce the impact on surface and groundwater reduction.	Partially compliant	Water management measures are available as part of the EMP, with additional detailed storm water designs done by civil engineers. These are however largely not implemented.	Sufficient	
		(2) Ensure compliance with the issued WUL requirements.	Not applicable	No WUL available	Sufficient	
		(3) Develop and implement a storm water management plan and specifically address the diversion of "clean" water into the natural drainage lines.	Partially compliant	A detailed storm water design was done by civil engineers and includes diversion of clean storm water.	Sufficient	
Contamination of groundwater						
19. Opencast mining excavations	Direct Impact: Throughout the operational phase of the mining operations, potential pollutants are used such as high levels of nitrates. Improper management of potential pollutants may lead to the degradation of water quality (both surface and sub-surface). Polluted water resources may affect the aquatic environment in a detrimental manner.	Implementation of EMS:				
		(1) Development and implementation of a water monitoring program.	Partially compliant	A groundwater monitoring programme is available in the specialist reports. No monitoring however is being done and only the baseline qualities are available.	Sufficient	
		(2) Development and implementation of an Integrated Water and Waste Management Plan (IWWMP) (3) Development and implementation of a storm water management plan.	Not compliant	No IWWMP is available. A storm water design has been done for the entire site but is not implemented.	Sufficient	
		(4) Regular inspections of all areas posing a risk of contaminating water resources.	Not compliant	Stockpiles and workshops not inspected regularly.	Sufficient	
20. Drilling & Blasting	Direct Impact: Improper management of blasting activities poses the risk of contaminating water resources with pollutants such as high content of Nitrates. The presence of pollutants in the water resources poses a risk of degrading the conditions for the aquatic ecology to thrive.	(5) Reporting and recording all related incidents according to a developed procedure.	Not compliant	No incidents were reported, and various incidents were observed on site that should have been reported, especially concerning erosion and release of wash water from workshop.	Sufficient	
		(6) Develop and implement an emergency preparedness plan.	Partially compliant	An emergency plan is available but does not include sewage spills, Hazchem spills, or other water contamination emergencies.	Sufficient	
		(7) Ensuring corrective and preventative actions are taken to address nonconformities.	Not compliant	Some general non-conformities were addressed in terms of dust, but no non-conformities were noted or raised for water impacts and none were addressed. Various non-conformities were noted.	Sufficient	
		(8) Communicating findings of concern to I&AP.	Partially compliant	No findings were raised yet as there were no audits and no water issues are discussed during community meetings. This audit however will go through a PP process.	Sufficient	
21. RoM & product stockpiling	Direct Impact: Throughout the operational phase of the mining operations, potential pollutants are used such as high levels of	On-site mitigation measures:				
		(1) All sources of process water must be identified and quantified for the life cycle of the authorised activities.	Not compliant	All sources of process water have not been identified and quantified (such as in a water balance).	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
	nitrates. Improper management of potential pollutants may lead to the degradation of water quality (both surface and sub-surface). Polluted water resources may affect the aquatic environment in a detrimental manner. Indirect Impact: Sub-surface material and ore exposed to weathering may release pollutants to the water resources.	(2) A wastewater management system must be installed complying with regal requirements.	Partially compliant	A French drain system is available for the "grey water". Sumps and collection channels are available at the Hazchem storage facility but are not functional. The wash water from the workshop is not controlled.	Sufficient	
		(3) A water use licence for wastewater storage facilities to be obtained.	Not applicable	No need to licence the current wastewater storage facilities.	Sufficient	
		(4) All wastewater management facilities to be designed by a qualified engineer.	Compliant	The current wastewater facilities do not necessarily require a design by a qualified engineer. The storm water dams and PCD's have been designed by a qualified engineer.	Sufficient	
		(5) Wash bays, service areas, and fuel storage areas may not be located within the 1:100-year flood line or horizontal distance of 100 m (whichever is greater) of a watercourse or drainage line.	Compliant	These facilities were not located within the 1:100-year flood line.	Sufficient	
22. Residue stockpiles	Direct Impact: Throughout the operational phase of the mining operations, potential pollutants are used such as high levels of nitrates. Improper management of potential pollutants may lead to the degradation of water quality (both surface and sub-surface). Polluted water resources may affect the aquatic environment in a detrimental manner. Indirect Impact: Sub-surface material and ore exposed to weathering may release pollutants to the water resources.	(6) No environmentally harmful detergents may be used.	Compliant	No environmentally harmful detergents are used.	Sufficient	
		(7) Workshops, refuelling depots and washing areas shall be bunded.	Partially compliant	The Hazchem area is bunded, the workshop is concreted and sloped, the fuel tanks are bunded. The wash water from workshop is however not contained and there was a fuel tank on a stand that was not bunded.	Sufficient	
		(8) All bunded areas to be constructed in a way as to avoid seepage to the surrounding environment as well as be able to contain its content to a capacity of 110%.	Compliant	The bunded areas are concrete lined and have 110% capacity.	Sufficient	
		(9) Water from wash bays, service areas and fuel storage areas must be discharged into oil separators and sumps.	Not compliant	Wash water are not directed to a oil separator.	Sufficient	
		(10) Oils collected in this manner should be retained in a safe holding tank and removed from site by specialist oil recycling company or disposal at approved waste disposal sites.	Compliant	Used oil is stored in the Hazchem area and removed/collected by EWOR (Pty) Ltd. for recycling.	Sufficient	
23. Screening Operations	Direct Impact: Water seeping from stockpiles poses a risk of leading to elevated concentrations of heavy metals and other elements in the groundwater environment and can potentially be acidic. When this water reaches surface water bodies or the groundwater it can negatively affect the water quality. Indirect Impact: Alteration to the conditions of the water resources may negatively affect the aquatic	(11) No drainage from fuel storage areas to be permitted.	Compliant	Fuel storage bunded with no drainage from the bund area.	Sufficient	
		(12) Never hose oil or fuel spills into storm water drain or sewer, or into the surrounding natural environment.	Partially compliant	The area around the workshop and refuelling site was clean and neat with no visible spillages or wash water or hosed contamination. The wash water from the workshop goes into a sump but then overflow into the storm water drain.	Sufficient	
		(13) Any contaminated storm water and other run-off from dirty areas to be disposed of in the suitably designed PCD's.	Not compliant	No PCD's are available.	Sufficient	
		(14) Any spill which may contaminate water must be treated according to the approved spill management procedure.	Partially compliant	Some spills observed in the bunded areas were treated with absorbent indicating that the spill clean-ups are taking place. These absorbents were not all removed during the audit.	Sufficient	
		(15) Contain oil or fuel spills in water using an approved oil	Compliant	Absorbents were available and used.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
	ecology.	absorbent fibre.				
		(16) Grey water not deemed suitable for dust suppression must be disposed of with other wastewater in the designated and suitably designed PCD.	Compliant	No PCD available. Grey water is disposed into the French drains (septic tank).	Sufficient	
24. Discard disposal (backfilling of mining area)	Direct Impact: Throughout the operational phase of the mining operations, potential pollutants are used such as high levels of nitrates. Improper management of potential pollutants may lead to the degradation of water quality (both surface and sub-surface). Polluted water resources may affect the aquatic environment in a detrimental manner. Indirect Impact: Sub-surface material and ore exposed to weathering may release pollutants to the water resources.	(17) Wastewater as well as spilled fuel collected within bunded areas and refuelling areas shall be disposed of or treated as hazardous waste.	Compliant	The spills observed in the bunded areas were treated with absorbent and removed to the hazardous waste bin.	Sufficient	
		(18) Avoid unnecessary alteration of drainage lines.	Compliant	No unnecessary alterations were done. The alterations that occurred is in the mining area, which has no alternative seen that the mining has to follow the reef.	Sufficient	
		(19) Avoid locating lay down areas, wash bays, workshops etc. within the 1:50 year flood line or within horizontal distance of 100 m (whichever is greater) of a water course.	Compliant	These areas are not situated in the 1:50 year flood line.	Sufficient	
		(20) Contain contaminated runoff from dirty areas (i.e. lay down areas, RoM and product stockpile areas, workshops, fuelling bays etc.) in suitable designed PCD's.	Not compliant	No PCD's are available.	Sufficient	
25. Waste generation, storage and disposal	Direct Impact: These storage of large amounts of waste over an extended time in a area not lined or bunded poses a risk of forming potentially hazardous leachates. Indirect Impact: The hazardous leachate from the waste storage facilities poses a risk of contaminating both surface and sub-surface water resources. This may lead to the degradation of conditions for the aquatic ecology to thrive.	(21) Contaminated runoff to be treated and re-used for processing water or dust suppression in dirty areas only when complying with legal requirements or water quality standards specified in the Water Use Licence.	Not compliant	Contaminated runoff is not treated or captured seen that no PCD's are available. No WUL is also available.	Sufficient	
		(22) Do not locate any ablution facilities, chemical toilets, sanitary convenience, septic tanks, or French drains within the 1:100-year flood line, or within a horizontal distance of 100 m (whichever is greater) of any watercourses.	Compliant	The French drain and office area are not situated in the 100m buffer or flood line.	Sufficient	
		(23) Do not allow the use of any drainage line or wetland for swimming, bathing, or cleaning of clothing, tools or equipment.	Compliant	No such activities are done in the drainage lines	Sufficient	
		(24) Prevent the discharge of water containing polluting matter or visible suspended materials directly into drainage lines or streams.	Not compliant	Erosion is observed all around site, which releases suspended solids into the drainage lines.	Sufficient	
		(25) Deflect any unpolluted water/runoff away from any dirty area.	Partially compliant	Clean water diversions are implemented around the offices, workshop areas but no diversion is available around the mining area.	Sufficient	
26. Chemical Toilets	Direct Impact: Improper management of effluent from chemical toilets poses a high risk to contaminating water resources. Indirect Impact: Over an extended period of time the exposure to contamination will cause the degradation of fauna	(26) Ensure that no storm water is allowed to enter any drainage installation for the reception, conveyance, storage, and or treatment of sewage.	Not compliant	Dirty storm water enters the drainage line from the mining area.	Sufficient	
		(27) Before any water is permitted to enter natural drainage lines, the quality of the water must comply with the standards contained within the Water Use Licensing conditions authorised by the DWAS.	Not applicable	No WUL is available.	Sufficient	
		(28) Ensure water passing through vehicle wash bays and workshops pass through oil separators before passing into	Not compliant	Wash water from the workshops do not pass through any oil separators.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
	and flora habitats as well as affect the surface and sub-surface water quality.	conservancy tank.				
27. River crossings	Direct Impact: Storm water run-off from river crossing structures containing pollutants poses a risk in contaminating the surrounding water resources. Indirect Impact: Pollutants poses a risk in altering the conditions of the aquatic ecology to thrive.	(29) Avoid unnecessary cutting roads through river, stream banks as this may lead to erosion causing siltation of streams and downstream dams.	Compliant	The roads that crosses drainage lines and streams are only the necessary roads where no alternatives are available.	Sufficient	
		<u>Legal requirements:</u>				
		(1) Obtain a Water Use Licence from the DWAS.	Not compliant	No WUL.	Sufficient	
		<u>Specialist recommendations:</u>				
27. River crossings	Direct Impact: Storm water run-off from river crossing structures containing pollutants poses a risk in contaminating the surrounding water resources. Indirect Impact: Pollutants poses a risk in altering the conditions of the aquatic ecology to thrive.	<u>Geohydrology –</u>				
		(1) Development of an environmental monitoring programme in order to monitor the groundwater quality and groundwater level changes up- and downstream of the proposed open cast mine workings. (2) Collected monitoring data (quarterly) may be used for future model updates (e.g. every second year).	Partially compliant	A groundwater monitoring programme is available in the specialist reports. No monitoring however is being done and only the baseline qualities are available.	Sufficient	
28. Water supply (potable & process)	Direct Impact: Leaks and breaks of water supply infrastructure poses a risk of contaminating water resources. Indirect Impact: Pollutants poses a risk in altering the conditions of the aquatic ecology to thrive.	(3) A number of geosites (i.e. boreholes, springs and surface water drainages) and newly proposed boreholes were identified (refer to the Geohydrological report in Appendix M) to be included into a monthly/quarterly monitoring programme.	Partially compliant	A groundwater monitoring programme is available in the specialist reports. No monitoring however is being done and only the baseline qualities are available.	Sufficient	
		(4) The parameters to be analysed should comprise the following: Physical-chemical parameters (pH, EC, TDS); Major anions (F, Cl, NO ₃ , SO ₄ , HCO ₃ , NH ₄ , PO ₄ ,); Major cations (K, Na, Mg, Ca, NH ₄ ,); and Other elements/metals (Fe, Mn, Zn, Pb, Co, Cr, Cr (VI),).	Not applicable	Monitoring not done	Sufficient	
29. Storage of fuel and lubricants in temporary facilities	Direct Impact: The use of improper storage facilities poses a risk of the surrounding environment to be exposed to continuous leaking of hydrocarbons leading possibly contaminating both surface and sub-surface water sources as well as the soils surrounding the facility.	(5) Emphasis should be placed on monitoring of groundwater levels prior mining and during the operation phase as well as to establish the origin of the elevated nitrate concentrations in the project area.	Partially compliant	Pre-mining water levels are available as part of the baseline studies. No operational monitoring done currently.	Sufficient	
		(6) Recording of pit dewatering rates. Initial monthly (and later quarterly) sampling and analysis (major and trace elements) of pumped water.	Not applicable	The operation has advised that no water seeps into the pits and no dewatering is being done.	Sufficient	
32. Water Management	Direct Impact: The poor management of onsite water i.e. Storm water, process water, effluent, potable water etc. may lead to the contamination of water resources.	<u>Hydrology –</u>				
		(1) A number of monitoring sample points have been identified in the Hydrological report (Appendix L). Additional sampling points have been recommended and should be included in the final water monitoring plan.	Not compliant	No IWWMP available or implemented	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(2) As part of the monitoring program going forward, samples should be taken monthly for at least the first year of operation. This can be revised to quarterly monitoring if no concerns are highlighted with the approval of DWAS.	Partially compliant	A groundwater monitoring programme is available in the specialist reports. No monitoring however is being done and only the baseline qualities are available.	Sufficient	
		(3) The monitoring should include the standard analysis of major cations/anions as well as ICP scan for metals.	Not applicable	No WUL available	Sufficient	
		(4) A conceptual storm water management plan (Appendix L) has been developed based on the requirements of GN R. 704 of the National Water Act of 1998.	Not compliant	Not included into the emergency procedure.	Sufficient	
		(5) Implementation of the guidance provided by the South African National Roads Agency Limited (SANRAL) drainage manual. This document provides guidance on maximum permissible velocities for grass covers to avoid erosion and should be consulted during the detailed design phase.	Not compliant	No storm water measures implemented around the mining area with large scale erosion observed. Some stormwater controls are implemented around the offices and ore stockpile areas.	Sufficient	
		Compliance with standard:				
		(1) Develop and implement an Integrated Wastewater Management Plan (IWWMP).	Not compliant	No IWWMP available or implemented	Sufficient	
		(2) Develop and implement a water monitoring schedule according to the water management plan.	Partially compliant	A groundwater monitoring programme is available in the specialist reports. No monitoring however is being done and only the baseline qualities are available.	Sufficient	
		(3) Ensure compliance with the WUL conditions.	Not applicable	No WUL available	Sufficient	
		(4) Develop an emergency preparedness plan addressing the prevention and management of incidents related to water contamination	Not compliant	Not included into the emergency procedure.	Sufficient	
Hazardous leachate						
22. Residue stockpiles	Direct Impact: Potential pollutant in the residue material resulting from mining operation may lead to the formation of leachate. The leachate may contain toxins that is hazardous to the aquatic ecology and water resources.	Implementation of EMS:				
		(1) Design and implement an Integrated Wastewater Management Plan (IWWMP).	Not compliant	No IWWMP available or implemented	Sufficient	
		(2) Develop and implement a water quality management plan.	Not applicable	Will be included in the IWWMP	Sufficient	
		(3) Regular inspections of the waste management areas and/or facilities.	Compliant	The waste areas are checked regularly. No waste was observed overflowing.	Sufficient	
25. Waste generation, storage and disposal	Direct Impact: The hazardous leachate from the waste storage facilities poses a risk of contaminating both surface and sub-surface water as well as soil resources. This may lead to the degradation of conditions for the aquatic ecology to thrive.	(4) Reporting and recording all related incidents according to a developed procedure.	Not compliant	Incidents were observed that were not reported.	Sufficient	
		(5) Develop and implement an emergency preparedness plan.	Partially compliant	Emergency procedure available but Hazchem's not sufficiently covered.	Sufficient	
		(6) Ensuring corrective and preventative actions are taken to address nonconformities.	Not compliant	Some general non-conformities were addressed in terms of dust, but no non-conformities were noted or raised for water impacts and none were addressed. Various non-conformities were noted.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(7) Communicating findings of concern to I&AP.	Partially compliant	No communication of findings to the I&AP's. This audit will go through a public participation process.	Sufficient	
		On-site mitigation measures:				
		(1) Ensure mitigation measures are implemented as to avoid the leachate of hazardous chemicals into the surrounding environment.	Compliant	Bund walls and concrete floors are available at the fuel storage areas, Hazchem stores, and workshop.	Sufficient	
		(2) Implement a ground water monitoring plan and ensure the legal thresholds are not being exceeded.	Not compliant	No monitoring done	Sufficient	
		(3) Ensure remediation actions are taken immediately in the formation of hazardous leachates.	Not applicable	No hazardous leachates expected (from a waste classification report done).	Sufficient	
		(4) Ensure compliance with the issued Waste Management Licence.	Not applicable	No WML issued. WML application submitted but still awaiting approval.	Sufficient	
		Legal requirements:				
		(1) Ensure requirements stipulated in the National Environmental Management: Waste Act (NEMWA) of 2008 are incorporated in the Waste Management Plan.	Partially compliant	No waste management plan. Waste management was observed on site with demarcated bins and collections. No waste manifest could be provided by the company.	Sufficient	
		(2) GN R. 634 list a number of requirements related to Waste classification and management. These requirements as stipulated in the regulations must be incorporated into the Waste Management Plan.	Partially compliant	Waste classification was done as part of the WUL application. No waste management plan available although the WML application and this EMP could be seen as a waste management plan, or at least contains enough information to develop a waste management pan.	Sufficient	
		(3) GN R. 921 list a number of activities that requires a Waste Management Licence in terms of NEMWA. Listed activity number 11 ("The establishment or reclamation of a residue stockpile or residue deposit resulting from activities which require a mining right in terms of the MPRDA (Act 28 of 2002)") will require a waste management licence in terms of the regulations.	Partially compliant	WML application submitted and awaiting approval from the competent authorities.	Sufficient	
		(4) GN R. 625 sets requirements for a waste producer to register and report waste quantity of the National Waste Information System.	Not compliant	Not registered on NWIS.	Sufficient	
		(5) GN R. 635 sets the National norms and standards for the assessment of waste for landfill. The procedures for determining the class of waste for landfill must be incorporated into the Waste Management plan.	Partially compliant	Waste classification done on the waste rock and other residue material as part of the WUL application. All other wastes generated on site are pre-classified.	Sufficient	
		(6) GN R. 636 sets the National norms and standards for the disposal of waste for landfill. These requirements should be considered when disposing waste to landfill.	Not compliant	The waste classifications done on the residue material informed the WML management measures. The other pre-classified wastes (hazardous waste, general waste) are disposed according the GN. 636, although no proof could be provided in the form of manifests or landfill notes.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(7) GN R. 926 stipulates the norms and standards associated to the storage of waste. These requirements must be incorporated in the Waste Management Plan.	Not compliant	No waste management plan. Waste management was observed on site with demarcated bins and collections. The storage areas do not all comply with the N & S and the waste dumps do not have class D liners (Clay liners).	Sufficient	
		(8) All waste tyres generated on site must be managed according to the Waste tyre regulations published under the Environment Conservation Act of 1989.	Compliant	Waste tyres removed by North-West recycling and removed and stored according to the waste tyre regulations.	Sufficient	
		Specialist recommendations:				
		Geohydrology –				
		(1) Development of an environmental monitoring programme in order to monitor the groundwater quality and groundwater level changes up- and downstream of the proposed open cast mine workings. (2) Collected monitoring data (quarterly) may be used for future model updates (e.g. every second year).	Partially compliant	A groundwater monitoring programme is available in the specialist reports. No monitoring however is being done and only the baseline qualities are available.	Sufficient	
		(3) A number of geosites (i.e. boreholes, springs and surface water drainages) and newly proposed boreholes were identified (refer to the Geohydrological report in Appendix M) to be included into a monthly/quarterly monitoring programme.	Partially compliant	A groundwater monitoring programme is available in the specialist reports. No monitoring however is being done and only the baseline qualities are available.	Sufficient	
		(4) The parameters to be analysed should comprise the following: Physical-chemical parameters (pH, EC, TDS);Major anions (F, Cl, NO3, SO4, HCO3, NH4, PO4,);Major cations (K, Na, Mg, Ca, NH4,); and Other elements/metals (Fe, Mn, Zn, Pb, Co, Cr, Cr (VI),).	Not applicable	Monitoring not done	Sufficient	
		Compliance with standard:				
		(1) Develop and implement a Waste Management plan.	Partially compliant	Waste management are implemented but no waste management plan.	Sufficient	
		(2) Develop and implement an Integrated Wastewater Management plan	Not applicable	Similar to the waste management plan.	Sufficient	
Water storage						
28. Water supply (potable & process)	Direct Impact: Improper management of water storage facilities i.e. Not inspecting or regularly maintaining the storage tanks poses a risk of leaks and contamination.	Implementation of EMS:				
		(1) Water usage monitoring plan to be developed and implemented.	Compliant	Water usage monitored through invoices from LWUA.	Sufficient	
		(2) Create awareness of water conservation.	Not compliant	No environmental awareness training is being done	Sufficient	
		(3) Regular inspections of water storage facilities.	Compliant	Storage tanks (JoJo) are inspected regularly	Sufficient	
32. Water Management	Direct Impact: Improper management of water storage facilities i.e. Not inspecting or regularly maintaining the storage tanks poses a risk of leaks and contamination.	(4) Reporting and recording of water management related incidents.	Not applicable	No incident registers available	Sufficient	
		On-site mitigation measures:				
		(1) Filtered or treated water from PCD's may be used for dust suppression should they conform to the sediment load requirements or other quality requirements as specified by the Water Use Licence issued by the Department of Water Affairs and	Not applicable	No PCD's	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		sanitation.				
		(2) Monitor water usage and ensure that areas of waste are identified and minimised.	Compliant	Water usage monitored through invoices from LWUA.	Sufficient	
		(3) Where possible, reuse water from the PCD's for dust suppression on the roads.	Not applicable	No PCD's	Sufficient	
		(4) Water may only be abstracted from the approved abstraction points once all grey water or run-off water complying with the quality requirements has been utilised for the purposes of dust suppression. (5) The volume of water abstracted may not exceed the limits stipulated by DWAS by more than 5% on an annual basis.	Partially compliant	No water abstracted. Water released do not comply with the quality limits stipulated by DWS.	Sufficient	
		(6) Water storage facilities to be inspected on a weekly basis to ensure no leaks or contamination of water source.	Partially compliant	The storage tanks are inspected regularly. It could not be confirmed whether it is done weekly. No visible leaks or contamination observed during the audit.	Sufficient	
		(7) Water storage facilities and infrastructures to be always maintained to a good working condition.	Compliant	The storage facilities observed during the audit were in a good working condition.	Sufficient	
		Legal requirements:				
		(1) A Water Use Licence to be obtained for all river crossings or development of infrastructure within or within close proximity to a watercourse as defined by the National Water Act, act no of 1996	Not compliant	No WUL available	Sufficient	
		Compliance with standard:				
		(1) Develop and implement a water management plan specifically addressing the storage of water as well as the frequent inspections of storage facilities.	Not compliant	No water management plan was provided.	Sufficient	
Surface water						
Construction						
Sedimentation and siltation						
1. Access and hauling along roads i.e. during the construction of roads	Direct Impact: Constructing access roads through drainage lines may cause sedimentation and siltation of watercourses if not managed properly. Indirect Impact: Storm water runoff of dirt roads may cause sedimentation and siltation of	Implementation of EMS:				
		(1) Development and implementation of water quality monitoring plan.	Not compliant	No monitoring is being done on surface water	Sufficient	
		(2) Development and implementation of an incident reporting procedure.	Not compliant	Incidents observed that were not reported.	Sufficient	
		(3) Ensuring corrective and preventative actions are taken to address nonconformities.	Not compliant	The incidents of erosion around site and wash water runoff from the workshop have no corrective or preventative action implemented.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
	nearby watercourses.	(4) Communicating findings of concern to I&AP.	Compliant	Findings from this audit will be communicated to the I&AP's.	Sufficient	
		(5) Development and implementation of a storm water management plan.	Partially compliant	A SWMP is developed but not implemented.	Sufficient	
		(6) Regular inspection of erosion prone areas for signs of erosion.	Not compliant	Erosion is not checked or attended to.	Sufficient	
		(7) A soil conservation and stockpiling plan to be developed and implemented.	Not compliant	No soil conservation or stockpile management plan / procedure provided.	Sufficient	
2. Site clearing and topsoil stripping for lay down area and all related mining infrastructure	<p>Direct Impact: Constructing access roads and lay down areas through or in close proximity to drainage lines may cause sedimentation and siltation of watercourses if not managed properly.</p> <p>Indirect Impact: Storm water runoff of dirt roads and un-vegetated areas may cause sedimentation and siltation of nearby watercourses.</p>	On-site mitigation measures:				
		(1) Avoid stockpiling material within drainage lines or in the 1:10 year flood line.	Compliant	topsoil's is not stockpiled within drainage lines or the 1:100-year flood lines.	Sufficient	
		(2) Ensure erosion control measures or sediment control measures on stockpiles or in stockpile areas.	Not compliant	Little to no erosion control measures observed on stockpiles.	Sufficient	
		(3) Prevent the discharge of water containing polluting matter or visible suspended materials directly into drainage lines or streams.	Not compliant	Runoff containing silt are discharged from the mining area.	Sufficient	
		(4) Deflect any unpolluted water/runoff away from any dirty areas i.e. stockpile areas, mining areas, workshops, lay down areas etc.	Not compliant	Little to no clean water diversions are implemented around the mining area or stockpiles.	Sufficient	
		(5) Water from excavations or mining areas either through seepage or collection to be pumped and discharge into a pollution control dam.	Not applicable	No water collected from the pit (dry pit). No PCD is available.	Sufficient	
		(6) Before any water is permitted to enter natural drainage lines, the quality of water must comply with the standards contained in the Water Use Licence conditions.	Not applicable	No WUL	Sufficient	
		(7) River crossings shall be designed by a registered civil engineer.	Compliant	River crossings have been designed by a civil engineer.	Sufficient	
6. Storm water runoff management features	<p>Direct Impact: Improper or ineffective storm water runoff management features poses a risk of contributing to the sedimentation and siltation of watercourses.</p>	(8) Measures to avoid or prevent erosion formation must be incorporated into the designs of the infrastructure associated with the river crossings.	Compliant	Erosion prevention has been incorporated into the river crossing's designs.	Sufficient	
		(9) During construction through drainage lines, the majority of the flow must be allowed to pass down the stream. In stream diversions should be used rather than the construction of new channels.	Partially compliant	In stream diversions are largely used but inefficiently, causing erosion	Sufficient	
		<p>Legal requirements:</p> <p>(1) A Water Use Licence to be obtained for all river crossings or development of infrastructure within or within close proximity to a watercourse as defined by the National Water Act, act no of 1996.</p>	Not compliant	No WUL	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
6. Storm water runoff management features	Direct Impact: Improper or ineffective storm water runoff management features poses a risk of contributing to the sedimentation and siltation of watercourses.	(2) Requirements stipulated by GN R. 704 to be considered in the final site layout plan by the appointed engineers.	Compliant	The SWMP has been designed by a team of registered engineers and incorporates R 704 requirements.	Sufficient	
		Specialist recommendations:				
		Geohydrology –				
15. Transport of construction material, mobile plant and equipment to the site	Direct Impact: Constructing access roads through drainage lines may cause sedimentation and siltation of watercourses if not managed properly. Indirect Impact: Storm water runoff of dirt roads may cause sedimentation and siltation of nearby watercourses.	(1) Development of an environmental monitoring programme in order to monitor the groundwater quality and groundwater level changes up- and downstream of the proposed open cast mine workings.	Partially compliant	A monitoring programme is available in the specialist studies but not implemented.	Sufficient	
		(2) Collected monitoring data (quarterly) may be used for future model updates (e.g. every second year).	Not applicable	No monitoring done	Sufficient	
		(3) A number of geosites (i.e. boreholes, springs and surface water drainages) and newly proposed boreholes were identified (refer to the Geohydrological report in Appendix M) to be included into a monthly/quarterly monitoring programme.	Partially compliant	A groundwater monitoring programme is available in the specialist reports. No monitoring however is being done and only the baseline qualities are available.	Sufficient	
		(4) The parameters to be analysed should comprise the following: Physical-chemical parameters (pH, EC, TDS); Major anions (F, Cl, NO ₃ , SO ₄ , HCO ₃ , NH ₄ , PO ₄ ,); Major cations (K, Na, Mg, Ca, NH ₄ ,); and Other elements/metals (Fe, Mn, Zn, Pb, Co, Cr, Cr (VI),).	Not applicable	Monitoring not done	Sufficient	
		Hydrology –				
		(1) A number of monitoring sample points have been identified in the Hydrological report (Appendix L). Additional sampling points have been recommended and should be included in the final water monitoring plan.	Partially compliant	The monitoring programme is still largely as per the specialist reports.	Sufficient	
		(2) As part of the monitoring program going forward, samples should be taken monthly for at least the first year of operation. This can be revised to quarterly monitoring if no concerns are highlighted with the approval of DWAS.	Not compliant	No monthly monitoring	Sufficient	
		(3) The monitoring should include the standard analysis of major cations/anions as well as ICP scan for metals.	Not applicable	No monitoring is done	Sufficient	
		(4) A conceptual storm water management plan (Appendix L) has been developed based on the requirements of GN R. 704 of the National Water Act of 1998.	Not applicable	Noted	Sufficient	
		(5) Implementation of the guidance provided by the South African National Roads Agency Limited (SANRAL) drainage manual. This document provides guidance on maximum permissible velocities for grass covers to avoid erosion and should be consulted during the detailed design phase.	Not compliant	No storm water measures implemented around the mining area with large scale erosion observed. Some stormwater controls are implemented around the offices and ore stockpile areas.	Sufficient	
		Compliance with standards:				
		(1) Develop a storm water management plan.	Partially compliant	A SWMP is available but not implemented.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(2) Develop and implement a water management plan and specifically include water monitoring and pollution prevention strategies.	Partially compliant	Various water management requirements are stipulated in the EMP and specialist reports that are available but is not consolidated into a water management plan.	Sufficient	
Alteration of drainage patterns						
1. Access and hauling along roads i.e. during the construction of roads	Indirect Impact: Alteration of the drainage patterns may lead to the degradation of downstream or surrounding Wetlands which in its turn may affect the aquatic micro and macro ecology. Direct Impact: The construction of access roads through drainage lines may lead to the siltation of streams as well as lead to erosion along the riverbanks that will affect the surface water quality negatively.	Implementation of EMS:				
		(1) Develop a water monitoring management plan.	Partially compliant	A monitoring plan is available from the EIA specialist report but is not implemented or revised.	Sufficient	
		(2) Record and report all incidents related to affecting water quality.	Not compliant	No incidents were reported, and various incidents were observed on site that should have been reported, especially concerning erosion and release of wash water from workshop.	Sufficient	
		(3) Development of Mine Rehabilitation, decommissioning and mine closure liability Plan in compliance with GN R. 1147 of NEMA.	Compliant	The plans are available and being reviewed	Sufficient	
		(4) Ensuring corrective and preventative actions are taken to address nonconformities.	Not compliant	Some general non-conformities were addressed in terms of dust, but no non-conformities were noted or raised for water impacts and none were addressed. Various non-conformities were noted.	Sufficient	
		(5) Communicating findings of concern to I&AP.	Partially compliant	No findings were raised yet as there were no audits and no water issues are discussed during community meetings. This audit however will go through a PP process.	Sufficient	
		(6) Development and implementation of a storm water management plan.	Partially compliant	A SWMP are available but not implemented	Sufficient	
		(7) Regular inspection of erosion prone areas for signs of erosion.	Partially compliant	Regular observations done during site visits.	Sufficient	
		(8) A soil conservation and stockpiling plan to be developed and implemented.	Not compliant	No such plan has been provided.	Sufficient	
		On-site mitigation measures:				
		(1) Plan the final site layout in a manner as to reduce alteration of drainage patterns.	Compliant	The roads used were largely existing roads and where possible the designs ensured that as little as possible new roads were built.	Sufficient	
2. Site clearing and topsoil stripping for lay down area and all related	Indirect Impact: Alteration of the drainage patterns may lead to the degradation of downstream or surrounding Wetlands which in its turn may	(2) In the event that drainage patterns will be altered, the natural flow to be diverted.	Partially compliant	Where possible, the crossings aim to keep the flow in the same direction and line, with only the short disturbance f the road width.	Sufficient	
		(3) Any diversions to be in such a manner as to avoid erosion formation or pollution through siltation and sedimentation.	Not compliant	Erosion observed in and around these crossings.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
mining infrastructure	affect the aquatic micro and macro ecology. Direct Impact: Site clearing and topsoil stripping through drainage lines may lead to the siltation of streams as well as lead to erosion along the riverbanks that will affect the surface water quality negatively.	(4) Ensure water quality complies with the requirements stipulated by the Water Use Licence conditions.	Not applicable	No WUL	Sufficient	
		(5) Channels and drainage systems required to divert the flow of drainage lines to be designed by a civil engineer, taking into consideration the peak volumes and flow.	Compliant	The SWMP has been designed by a team of registered engineers and has been done using the calculated flow volumes and peak flow volumes.	Sufficient	
		(6) Ensure rehabilitation measures are according to rehabilitation plan and that measures are taken to prevent the formation of erosion dongas or rills.	Not compliant	Rehabilitation has not started, and some erosion gullies have been observed below certain crossings.	Sufficient	
		Legal requirements:				
		(1) A Water Use Licence to be obtained for all river crossings or development of infrastructure within or within close proximity to a watercourse as defined by the National Water Act, act no of 1996.	Not compliant	No WUL	Sufficient	
		(2) Requirements stipulated by GN R. 704 to be considered in the final site layout plan by the appointed engineers.	Compliant	The SWMP has been designed by a team of registered engineers and incorporates R 704 requirements.	Sufficient	
6. Storm water runoff management features	Indirect Impact: Alteration of the drainage patterns may lead to the degradation of downstream or surrounding Wetlands which in its turn may affect the aquatic micro and macro ecology. Direct Impact: Site clearing and topsoil stripping through drainage lines may lead to the siltation of streams as well as lead to erosion along the riverbanks that will affect the surface water quality negatively.	Specialist recommendations:				
		Geohydrology –				
		(1) Development of an environmental monitoring programme in order to monitor the groundwater quality and groundwater level changes up- and downstream of the proposed open cast mine workings. (2) Collected monitoring data (quarterly) may be used for future model updates (e.g. every second year).	Partially compliant	A groundwater monitoring programme is available in the specialist reports. No monitoring however is being done and only the baseline qualities are available.	Sufficient	
		(3) A number of geosites (i.e. boreholes, springs and surface water drainages) and newly proposed boreholes were identified (refer to the Geohydrological report in Appendix M) to be included into a monthly/quarterly monitoring programme.	Not compliant	These have not been included into the programme	Sufficient	
		(4) The parameters to be analysed should comprise the following: Physical-chemical parameters (pH, EC, TDS);Major anions (F, Cl, NO3, SO4, HCO3, NH4, PO4,);Major cations (K, Na, Mg, Ca, NH4,); and Other elements/metals (Fe, Mn, Zn, Pb, Co, Cr, Cr (VI),).	Not applicable	No monitoring done	Sufficient	
		(5) Emphasis should be placed on monitoring of groundwater levels prior mining and during the operation phase as well as to establish the origin of the elevated nitrate concentrations in the project area.	Partially compliant	Pre-mining water levels are available as part of the baseline studies. No operational monitoring done currently.	Sufficient	
		(6) Recording of pit dewatering rates. Initial monthly (and later quarterly) sampling and analysis (major and trace elements) of pumped water.	Not applicable	The operation has advised that no water seeps into the pits and no dewatering is being done.	Sufficient	
		Hydrology –				

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(1) A number of monitoring sample points have been identified in the Hydrological report (Appendix L). Additional sampling points have been recommended and should be included in the final water monitoring plan.	Partially compliant	The monitoring programme is still largely as per the specialist reports.	Sufficient	
		(2) As part of the monitoring program going forward, samples should be taken monthly for at least the first year of operation. This can be revised to quarterly monitoring if no concerns are highlighted with the approval of DWAS.	Not compliant	No monthly monitoring	Sufficient	
		(3) The monitoring should include the standard analysis of major cations/anions as well as ICP scan for metals.	Not applicable	No monitoring is done	Sufficient	
		(4) A conceptual storm water management plan (Appendix L) has been developed based on the requirements of GN R. 704 of the National Water Act of 1998.	Not applicable	Noted	Sufficient	
		(5) Implementation of the guidance provided by the South African National Roads Agency Limited (SANRAL) drainage manual. This document provides guidance on maximum permissible velocities for grass covers to avoid erosion and should be consulted during the detailed design phase.	Not compliant	No storm water measures implemented around the mining area with large scale erosion observed. Some stormwater controls are implemented around the offices and ore stockpile areas.	Sufficient	
		Compliance with standards:				
		(1) Develop and implement a storm water management plan.	Partially compliant	A SWMP is available but not implemented.	Sufficient	
		(2) Develop and implement a water management plan specifically including a strategy for the management of alterations to drainage patterns.	Not compliant	No strategy, plan or implementation of such a plan for the alteration to drainage patterns.	Sufficient	
Tributaries (Upstream)						
1. Access and hauling along roads i.e. during the construction of roads	Indirect Impact: Alteration of the upstream drainage lines may lead to the degradation of downstream or surrounding Wetlands which in its turn may affect the aquatic micro and macro ecology. Direct Impact: The destruction of tributaries may lead to a limited volume of water available to the downstream users. The reduction in water in the catchment may cause the degradation of surface water quality.	Implementation of EMS:				
		(1) Develop a water monitoring management plan.	Partially compliant	A monitoring plan is available from the EIA specialist report but is not implemented or revised.	Sufficient	
		(2) Record and report all incidents related to affecting water quality.	Not compliant	No incidents were reported, and various incidents were observed on site that should have been reported, especially concerning erosion and release of wash water from workshop.	Sufficient	
		(3) Development of Mine Rehabilitation, decommissioning and mine closure liability Plan in compliance with GN R. 1147 of NEMA.	Compliant	The plans are available and being reviewed	Sufficient	
		(4) Ensuring corrective and preventative actions are taken to address nonconformities.	Not compliant	Some general non-conformities were addressed in terms of dust, but no non-conformities were noted or raised for water impacts and none were addressed. Various non-conformities were noted.	Sufficient	
		(5) Communicating findings of concern to I&AP.	Partially compliant	No findings were raised yet as there were no audits and no water issues are discussed during community meetings. This audit however will go	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
				through a PP process.		
		(6) Development and implementation of a storm water management plan.	Partially compliant	A SWMP are available but not implemented	Sufficient	
		(7) Regular inspection of erosion prone areas for signs of erosion.	Partially compliant	Regular observations done during site visits.	Sufficient	
		(8) A soil conservation and stockpiling plan to be developed and implemented.	Not compliant	No such plan has been provided.	Sufficient	
		On-site mitigation measures:				
		(1) Plan the final site layout in a manner as to reduce alteration of drainage patterns.	Compliant	The roads used were largely existing roads and where possible the designs ensured that as little as possible new roads were built.	Sufficient	
		(2) In the event that drainage patterns will be altered, the natural flow to be diverted.	Partially compliant	Where possible, the crossings aim to keep the flow in the same direction and line, with only the short disturbance f the road width.	Sufficient	
		(3) Any diversions to be in such a manner as to avoid erosion formation or pollution through siltation and sedimentation.	Not compliant	Erosion observed in and around these crossings.	Sufficient	
		(4) Ensure water quality complies with the requirements stipulated by the Water Use Licence conditions.	Not applicable	No WUL	Sufficient	
		(5) Channels and drainage systems required to divert the flow of drainage lines to be designed by a civil engineer, taking into consideration the peak volumes and flow.	Compliant	The SWMP has been designed by a team of registered engineers and has been done using the calculated flow volumes and peak flow volumes.	Sufficient	
		(6) Ensure rehabilitation measures are according to rehabilitation plan and that measures are taken to prevent the formation of erosion dongas or rills.	Not compliant	Rehabilitation has not started, and some erosion gullies have been observed below certain crossings.	Sufficient	
		Legal requirements:				
		(1) A Water Use Licence to be obtained for all river crossings or development of infrastructure within or within close proximity to a watercourse as defined by the National Water Act, act no of 1996.	Not compliant	No WUL	Sufficient	
		(2) Requirements stipulated by GN R. 704 to be considered in the final site layout plan by the appointed engineers.	Compliant	The SWMP has been designed by a team of registered engineers and incorporates R 704 requirements.	Sufficient	
		Specialist recommendations:				
		Geohydrology –				
		(1) Development of an environmental monitoring programme in order to monitor the groundwater quality and groundwater level changes up- and downstream of the proposed open cast mine workings. (2) Collected monitoring data (quarterly) may be used for future model updates (e.g. every second year).	Partially compliant	A groundwater monitoring programme is available in the specialist reports. No monitoring however is being done and only the baseline qualities are available.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(3) A number of geosites (i.e. boreholes, springs and surface water drainages) and newly proposed boreholes were identified (refer to the Geohydrological report in Appendix M) to be included into a monthly/quarterly monitoring programme.	Not compliant	These have not been included into the programme	Sufficient	
		(4) The parameters to be analysed should comprise the following: Physical-chemical parameters (pH, EC, TDS);Major anions (F, Cl, NO3, SO4, HCO3, NH4, PO4,);Major cations (K, Na, Mg, Ca, NH4,); and Other elements/metals (Fe, Mn, Zn, Pb, Co, Cr, Cr (VI),).	Not applicable	No monitoring done	Sufficient	
		(5) Emphasis should be placed on monitoring of groundwater levels prior mining and during the operation phase as well as to establish the origin of the elevated nitrate concentrations in the project area.	Partially compliant	Pre-mining water levels are available as part of the baseline studies. No operational monitoring done currently.	Sufficient	
		(6) Recording of pit dewatering rates. Initial monthly (and later quarterly) sampling and analysis (major and trace elements) of pumped water.	Not applicable	The operation has advised that no water seeps into the pits and no dewatering is being done.	Sufficient	
		Hydrology –				
		(1) A number of monitoring sample points have been identified in the Hydrological report (Appendix L). Additional sampling points have been recommended and should be included in the final water monitoring plan.	Partially compliant	The monitoring programme is still largely as per the specialist reports.	Sufficient	
		(2) As part of the monitoring program going forward, samples should be taken monthly for at least the first year of operation. This can be revised to quarterly monitoring if no concerns are highlighted with the approval of DWAS.	Not compliant	No monthly monitoring	Sufficient	
		(3) The monitoring should include the standard analysis of major cations/anions as well as ICP scan for metals.	Not applicable	No monitoring is done	Sufficient	
		(4) A conceptual storm water management plan (Appendix L) has been developed based on the requirements of GN R. 704 of the National Water Act of 1998.	Not applicable	Noted	Sufficient	
		(5) Implementation of the guidance provided by the South African National Roads Agency Limited (SANRAL) drainage manual. This document provides guidance on maximum permissible velocities for grass covers to avoid erosion and should be consulted during the detailed design phase.	Not compliant	No storm water measures implemented around the mining area with large scale erosion observed. Some stormwater controls are implemented around the offices and ore stockpile areas.	Sufficient	
		Compliance with standards:				
		(1) Develop and implement a storm water management plan.	Partially compliant	A SWMP is available but not implemented.	Sufficient	
		(2) Develop and implement a water management plan specifically including a strategy for the management of alterations to drainage patterns.	Not compliant	No strategy, plan or implementation of such a plan for the alteration to drainage patterns.	Sufficient	
Contamination fo surface water						
8. Pollution	Direct Impact: In the event that	Implementation of EMS:				

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
Control Dams (PCD's) i.e. Construction and operation	PCD's are not constructed in a way to avoid seepage to the surrounding environment or if not maintained, it poses a risk of contaminating water resources within close proximity to the facility.	(1) Development and implementation of a water monitoring program.	Partially compliant	A monitoring plan is available from the EIA specialist report but is not implemented or revised.	Sufficient	
		(2) Development and implementation of an Integrated Water and Waste Management Plan (IWWMP)	Not compliant	IWWMP not provided and not implemented.	Sufficient	
		(3) Development and implementation of a storm water management plan.	Partially compliant	A SWMP has been developed but not implemented.	Sufficient	
		(4) Regular inspections of all areas posing a risk of contaminating water resources.	Partially compliant	No inspection records provided. Areas that work with hazchems, such as the workshops, have been observed during the audit and overall housekeeping and spillage control was good. Areas informally inspected regularly.	Sufficient	
		(5) Reporting and recording all related incidents according to a developed procedure.	Not compliant	No incidents were reported, and various incidents were observed on site that should have been reported, especially concerning erosion and release of wash water from workshop.	Sufficient	
		(6) Develop and implement an emergency preparedness plan.	Partially compliant	An emergency preparedness plan is available and implemented but do not effectively cover all hazchem emergencies.	Sufficient	
9.Stores, workshops & wash bays	Direct Impact: Improper management of effluent from store, workshops, and wash bays poses a high risk to contaminating water resources. Indirect Impact: Over an extended period of time the exposure to contamination will cause the degradation of fauna and flora habitats as well as affect the surface and sub-surface water quality.	(7) Ensuring corrective and preventative actions are taken to address nonconformities.	Not compliant	Some general non-conformities were addressed in terms of dust, but no non-conformities were noted or raised for water impacts and none were addressed. Various non-conformities were noted.	Sufficient	
		(8) Communicating findings of concern to I&AP.	Compliant	This audit's findings will be communicated to the I & AP's through a PP process.	Sufficient	
		<u>On-site mitigation measures:</u>				
		(1) All sources of process water must be identified and quantified for the life cycle of the authorised activities.	Not compliant	All sources of process water have not been identified and quantified (such as in a water balance).	Sufficient	
		(2) A wastewater management system must be installed complying with regal requirements.	Partially compliant	A French drain system is available for the "grey water". Sumps and collection channels are available at the Hazchem storage facility but are not functional. The wash water from the workshop is not controlled.	Sufficient	
		(3) A water use licence for wastewater storage facilities to be obtained.	Not applicable	No need to licence the current wastewater storage facilities.	Sufficient	
		(4) All wastewater management facilities to be designed by a qualified engineer.	Compliant	The current wastewater facilities do not necessarily require a design by a qualified engineer. The storm water dams and PCD's have been designed by a qualified engineer.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(5) Wash bays, service areas, and fuel storage areas may not be located within the 1:100-year flood line or horizontal distance of 100 m (whichever is greater) of a watercourse or drainage line.	Compliant	These facilities were not located within the 1:100-year flood line.	Sufficient	
10. Ablutions & change house with sewage treatment plant	Direct Impact: Improper management of effluent from ablution facilities, change houses, and sewage treatment plant poses a high risk to contaminating water resources. Indirect Impact: Over an extended period of time the exposure to contamination will cause the degradation of fauna and flora habitats as well as affect the surface and sub-surface water quality.	(6) No environmentally harmful detergents may be used.	Compliant	No environmentally harmful detergents are used.	Sufficient	
		(7) Workshops, refuelling depots and washing areas shall be bunded.	Partially compliant	The Hazchem area is bunded, the workshop is concreted and sloped, the fuel tanks are bunded. The wash water from workshop is however not contained and there was a fuel tank on a stand that was not bunded.	Sufficient	
		(8) All bunded areas to be constructed in a way as to avoid seepage to the surrounding environment as well as be able to contain its content to a capacity of 110%.	Compliant	The bunded areas are concrete lined and have 110% capacity.	Sufficient	
		(9) Water from wash bays, service areas and fuel storage areas must be discharged into oil separators and sumps.	Not compliant	Wash water are not directed to a oil separator.	Sufficient	
		(10) Oils collected in this manner should be retained in a safe holding tank and removed from site by specialist oil recycling company or disposal at approved waste disposal sites.	Compliant	Used oil is stored in the Hazchem area and removed/collected by EWOR (Pty) Ltd. for recycling.	Sufficient	
		(11) No drainage from fuel storage areas to be permitted.	Compliant	Fuel storage bunded with no drainage from the bund area.	Sufficient	
		(12) Never hose oil or fuel spills into storm water drain or sewer, or into the surrounding natural environment.	Partially compliant	The area around the workshop and refuelling site was clean and neat with no visible spillages or wash water or hosed contamination. The wash water from the workshop goes into a sump but then overflow into the storm water drain.	Sufficient	
		(13) Any contaminated storm water and other run-off from dirty areas to be disposed off in the suitably designed PCD's.	Not compliant	No PCD's are available.	Sufficient	
		(14) Any spill which may contaminate water must be treated according to the approved spill management procedure.	Partially compliant	Some spills observed in the bunded areas were treated with absorbent indicating that the spill clean-ups are taking place. These absorbents were not all removed during the audit.	Sufficient	
11. Fuel operating power generators	Direct Impact: The construction of improper generator facilities poses a risk of the surrounding environment to be exposed to continuous leaking of hydrocarbons leading possibly contaminating both surface and sub-surface water sources as well as the soils surrounding the facility.	(15) Contain oil or fuel spills in water using an approved oil absorbent fibre.	Compliant	Absorbents were available and used.	Sufficient	
		(16) Grey water not deemed suitable for dust suppression must be disposed of with other wastewater in the designated and suitably designed PCD.	Compliant	No PCD available. Grey water is disposed into the French drains (septic tank).	Sufficient	
		(17) Wastewater as well as spilled fuel collected within bunded areas and refuelling areas shall be disposed of or treated as hazardous waste.	Compliant	The spills observed in the bunded areas were treated with absorbent and removed to the hazardous waste bin.	Sufficient	
		(18) Avoid unnecessary alteration of drainage lines.	Compliant	No unnecessary alterations were done. The alterations that occurred is in the mining area, which has no alternative seen that the mining has to follow the reef.	Sufficient	
		(19) Avoid locating lay down areas, wash bays, workshops etc. within the 1:50 year flood line or within horizontal distance of 100	Compliant	These areas are not situated in the 1:50 year flood line.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		m (whichever is greater) of a water course.				
13. Fuel storage	Direct Impact: The construction of improper storage facilities poses a risk of the surrounding environment to be exposed to continuous leaking of hydrocarbons leading possibly contaminating both surface and sub-surface water sources as well as the soils surrounding the facility.	(20) Contain contaminated runoff from dirty areas (i.e. lay down areas, RoM and product stockpile areas, workshops, fuelling bays etc.) in suitable designed PCD's.	Not compliant	No PCD's are available.	Sufficient	
		(21) Contaminated runoff to be treated and re-used for processing water or dust suppression in dirty areas only when complying with legal requirements or water quality standards specified in the Water Use Licence.	Not compliant	Contaminated runoff is not treated or captured seen that no PCD's are available. No WUL is also available.	Sufficient	
		(22) Do not locate any ablution facilities, chemical toilets, sanitary convenience, septic tanks, or French drains within the 1:100-year flood line, or within a horizontal distance of 100 m (whichever is greater) of any watercourses.	Compliant	The French drain and office area are not situated in the 100m buffer or flood line.	Sufficient	
13. Fuel storage	Direct Impact: The construction of improper storage facilities poses a risk of the surrounding environment to be exposed to continuous leaking of hydrocarbons leading possibly contaminating both surface and sub-surface water sources as well as the soils surrounding the facility.	(23) Do not allow the use of any drainage line or wetland for swimming, bathing, or cleaning of clothing, tools or equipment.	Compliant	No such activities are done in the drainage lines	Sufficient	
		(24) Prevent the discharge of water containing polluting matter or visible suspended materials directly into drainage lines or streams.	Not compliant	Erosion is observed all around site, which releases suspended solids into the drainage lines.	Sufficient	
		(25) Deflect any unpolluted water/runoff away from any dirty area.	Partially compliant	Clean water diversions are implemented around the offices, workshop areas but no diversion is available around the mining area.	Sufficient	
		(26) Ensure that no storm water is allowed to enter any drainage installation for the reception, conveyance, storage, and or treatment of sewage.	Not compliant	Dirty storm water enters the drainage line from the mining area.	Sufficient	
		(27) Before any water is permitted to enter natural drainage lines, the quality of the water must comply with the standards contained within the Water Use Licensing conditions authorised by the DWAS.	Not applicable	No WUL is available.	Sufficient	
		(28) Ensure water passing through vehicle wash bays and workshops pass through oil separators before passing into conservancy tank.	Not compliant	Wash water from the workshops do not pass through any oil separators.	Sufficient	
		(29) Avoid unnecessary cutting roads through river, stream banks as this may lead to erosion causing siltation of streams and downstream dams.	Compliant	The roads that crosses drainage lines and streams are only the necessary roads where no alternatives are available.	Sufficient	
		Legal requirements:				
		(1) Obtain a Water Use Licence from the DWAS.	Not compliant	No WUL	Sufficient	
		Specialist recommendations:				
		Geohydrology –				
		(1) Development of an environmental monitoring programme in order to monitor the groundwater quality and groundwater level changes up- and downstream of the proposed open cast mine workings. (2) Collected monitoring data (quarterly) may be used for future model updates (e.g. every second year).	Partially compliant	A groundwater monitoring programme is available in the specialist reports. No monitoring however is being done and only the baseline qualities are available.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
	(3) A number of geosites (i.e. boreholes, springs and surface water drainages) and newly proposed boreholes were identified (refer to the Geohydrological report in Appendix M) to be included into a monthly/quarterly monitoring programme.		Partially compliant	A groundwater monitoring programme is available in the specialist reports. No monitoring however is being done and only the baseline qualities are available.	Sufficient	
	(4) The parameters to be analysed should comprise the following: Physical-chemical parameters (pH, EC, TDS);Major anions (F, Cl, NO ₃ , SO ₄ , HCO ₃ , NH ₄ , PO ₄);Major cations (K, Na, Mg, Ca, NH ₄); and Other elements/metals (Fe, Mn, Zn, Pb, Co, Cr, Cr (VI)).		Not applicable	Monitoring not done	Sufficient	
	(5) Emphasis should be placed on monitoring of groundwater levels prior mining and during the operation phase as well as to establish the origin of the elevated nitrate concentrations in the project area.		Partially compliant	Pre-mining water levels are available as part of the baseline studies. No operational monitoring done currently.	Sufficient	
	(6) Recording of pit dewatering rates. Initial monthly (and later quarterly) sampling and analysis (major and trace elements) of pumped water.		Not applicable	The operation has advised that no water seeps into the pits and no dewatering is being done.	Sufficient	
Hydrology –						
	(1) A number of monitoring sample points have been identified in the Hydrological report (Appendix L). Additional sampling points have been recommended and should be included in the final water monitoring plan.		Not compliant	No IWWMP available or implemented	Sufficient	
	(2) As part of the monitoring program going forward, samples should be taken monthly for at least the first year of operation. This can be revised to quarterly monitoring if no concerns are highlighted with the approval of DWAS.		Partially compliant	A groundwater monitoring programme is available in the specialist reports. No monitoring however is being done and only the baseline qualities are available.	Sufficient	
	(3) The monitoring should include the standard analysis of major cations/anions as well as ICP scan for metals.		Not applicable	No WUL available	Sufficient	
	(4) A conceptual storm water management plan (Appendix L) has been developed based on the requirements of GN R. 704 of the National Water Act of 1998.		Not compliant	Not included into the emergency procedure.	Sufficient	
	(5) Implementation of the guidance provided by the South African National Roads Agency Limited (SANRAL) drainage manual. This document provides guidance on maximum permissible velocities for grass covers to avoid erosion and should be consulted during the detailed design phase.		Not compliant	No storm water measures implemented around the mining area with large scale erosion observed. Some stormwater controls are implemented around the offices and ore stockpile areas.	Sufficient	
Compliance with standards:						
	(1) Develop and implement an Integrated Wastewater Management Plan (IWWMP).		Not compliant	No IWWMP available or implemented	Sufficient	
	(2) Develop and implement a water monitoring schedule according to the water management plan.		Partially compliant	A groundwater monitoring programme is available in the specialist reports. No monitoring however is being done and only the baseline qualities are available.	Sufficient	
	(3) Ensure compliance with the WUL conditions.		Not applicable	No WUL available	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(4) Develop an emergency preparedness plan addressing the prevention and management of incidents related to water contamination.	Not compliant	Not included into the emergency procedure.	Sufficient	
Construction						
Destruction of wetlands						
18.Topsoil and subsoil stripping & stockpiling for mining operation area	Direct Impact: Site clearing and topsoil stripping in Wetlands will cause the loss of micro and macro aquatic species.	Implementation of EMS:				
		(1) Develop a water monitoring management plan.	Partially compliant	A monitoring plan is available from the EIA specialist report but is not implemented or revised.	Sufficient	
		(2) Record and report all incidents related to affecting water quality.	Not compliant	No incidents were reported, and various incidents were observed on site that should have been reported, especially concerning erosion and release of wash water from workshop.	Sufficient	
		(3) Development of Mine Rehabilitation, decommissioning and mine closure liability Plan in compliance with GN R. 1147 of NEMA.	Compliant	The plans are available and being reviewed	Sufficient	
		(4) Ensuring corrective and preventative actions are taken to address nonconformities.	Not compliant	Some general non-conformities were addressed in terms of dust, but no non-conformities were noted or raised for water impacts and none were addressed. Various non-conformities were noted.	Sufficient	
		(5) Communicating findings of concern to I&AP.	Partially compliant	No findings were raised yet as there were no audits and no water issues are discussed during community meetings. This audit however will go through a PP process.	Sufficient	
		(6) Development and implementation of a storm water management plan.	Partially compliant	A SWMP are available but not implemented	Sufficient	
		(7) Regular inspection of erosion prone areas for signs of erosion.	Partially compliant	Regular observations done during site visits.	Sufficient	
		(8) Create awareness of water conservation and protection of wetlands.	Not compliant	No such plan has been provided.	Sufficient	
		On-site mitigation measures:				
		(1) Plan the final site layout in a manner as to reduce the destruction of wetlands, if possible, avoid working within a wetland. A wetland delineation will be required before the commencement of any activities within a wetland.	Not applicable	No wetlands near operational activities	Sufficient	
		(2) In the event that a wetland will be altered, mitigation measures to reduce the impact on the wetland must be strictly monitored.	Not applicable	No wetlands near operational activities	Sufficient	
		(3) Ensure water quality complies with the requirements stipulated by the Water Use Licence conditions.	Not applicable	No WUL	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
	(4) Channels and drainage systems required to divert the flow of drainage lines to be designed by a civil engineer, taking into consideration the peak volumes and flow.		Compliant	The SWMP designs have been designed by a registered civil engineer.	Sufficient	
	(5) Ensure rehabilitation measures are according to rehabilitation plan and that measures are taken to prevent the formation of erosion dongas or rills.		Partially compliant	Some backfill has started at the open pits according to the rehab plan. Other areas remain that can be rehabilitated concurrently that remains and will be included into the current update of the rehab and closure plan.	Sufficient	
	(6) Species of ecological importance to be searched and rescued and reinstated during rehabilitation.		Not compliant	No search and rescue undertaken prior to construction	Sufficient	
	Legal requirements:					
	(1) A Water Use Licence to be obtained for all river crossings or development of infrastructure within or within close proximity to a watercourse as defined by the National Water Act, act no of 1996.		Not compliant	No WUL	Sufficient	
	(2) Requirements stipulated by GN R. 704 to be considered in the final site layout plan by the appointed engineers.		Compliant	The SWMP has been designed by a team of registered engineers and incorporates R 704 requirements.	Sufficient	
	Specialist recommendations:					
	Geohydrology –					
	(1) Development of an environmental monitoring programme in order to monitor the groundwater quality and groundwater level changes up- and downstream of the proposed open cast mine workings. (2) Collected monitoring data (quarterly) may be used for future model updates (e.g. every second year).		Partially compliant	A groundwater monitoring programme is available in the specialist reports. No monitoring however is being done and only the baseline qualities are available.	Sufficient	
	(3) A number of geosites (i.e. boreholes, springs and surface water drainages) and newly proposed boreholes were identified (refer to the Geohydrological report in Appendix M) to be included into a monthly/quarterly monitoring programme.		Partially compliant	A groundwater monitoring programme is available in the specialist reports. No monitoring however is being done and only the baseline qualities are available.	Sufficient	
	(4) The parameters to be analysed should comprise the following: Physical-chemical parameters (pH, EC, TDS);Major anions (F, Cl, NO3, SO4, HCO3, NH4, PO4,);Major cations (K, Na, Mg, Ca, NH4,); and Other elements/metals (Fe, Mn, Zn, Pb, Co, Cr, Cr (VI),).		Not applicable	Monitoring not done	Sufficient	
	(5) Emphasis should be placed on monitoring of groundwater levels prior mining and during the operation phase as well as to establish the origin of the elevated nitrate concentrations in the project area.		Partially compliant	Pre-mining water levels are available as part of the baseline studies. No operational monitoring done currently.	Sufficient	
	(6) Recording of pit dewatering rates. Initial monthly (and later quarterly) sampling and analysis (major and trace elements) of pumped water.		Not applicable	The operation has advised that no water seeps into the pits and no dewatering is being done.	Sufficient	
	Hydrology –					

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(1) A number of monitoring sample points have been identified in the Hydrological report (Appendix L). Additional sampling points have been recommended and should be included in the final water monitoring plan.	Not compliant	No IWWMP available or implemented	Sufficient	
		(2) As part of the monitoring program going forward, samples should be taken monthly for at least the first year of operation. This can be revised to quarterly monitoring if no concerns are highlighted with the approval of DWAS.	Partially compliant	A groundwater monitoring programme is available in the specialist reports. No monitoring however is being done and only the baseline qualities are available.	Sufficient	
		(3) The monitoring should include the standard analysis of major cations/anions as well as ICP scan for metals.	Not applicable	No WUL available	Sufficient	
		(4) A conceptual storm water management plan (Appendix L) has been developed based on the requirements of GN R. 704 of the National Water Act of 1998.	Not compliant	Not included into the emergency procedure.	Sufficient	
		(5) Implementation of the guidance provided by the South African National Roads Agency Limited (SANRAL) drainage manual. This document provides guidance on maximum permissible velocities for grass covers to avoid erosion and should be consulted during the detailed design phase.	Not compliant	No storm water measures implemented around the mining area with large scale erosion observed. Some stormwater controls are implemented around the offices and ore stockpile areas.	Sufficient	
		Compliance with standards:				
		(1) Develop and implement a water management plan and specifically include the conservation measures to be implemented in wetland areas.	Partially compliant	Water management measures are available in the SWMP and specialist reports but are nt consolidated into a water management plan. No wetland areas are expected to be impacted.	Sufficient	
		(2) Ensure compliance with the issued WUL requirements.	Not applicable	No WUL	Sufficient	
Sedimentation and siltation						
18.Topsoil and subsoil stripping & stockpiling for mining operation area	Direct Impact: Stripping topsoil and subsoil or stockpiling material through or in close proximity to drainage lines may cause sedimentation and siltation of watercourses if not managed properly. Indirect Impact: Storm water runoff of dirt roads and un-vegetated areas may cause sedimentation and siltation of nearby watercourses.	Implementation of EMS:				
		(1) Development and implementation of water quality monitoring plan.	Not compliant	No monitoring is being done on surface water	Sufficient	
19.Opencast mining excavations	Direct Impact: Stockpiling excavated material through or in close proximity to drainage lines may cause sedimentation	(2) Development and implementation of an incident reporting procedure.	Not compliant	Incidents observed that were not reported.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
	and siltation of watercourses if not managed properly. Indirect Impact: Storm water runoff of dirt roads and un-vegetated areas may cause sedimentation and siltation of nearby watercourses.	(3) Ensuring corrective and preventative actions are taken to address nonconformities.	Not compliant	The incidents of erosion around site and wash water runoff from the workshop have no corrective or preventative action implemented.	Sufficient	
21. RoM & product stockpiling	Direct Impact: Stockpiling RoM and product material through or in close proximity to drainage lines may cause sedimentation and siltation of watercourses if not managed properly. Indirect Impact: Storm water runoff of dirt roads and un-vegetated areas may cause sedimentation and siltation of nearby watercourses.	(4) Communicating findings of concern to I&AP.	Compliant	Findings from this audit will be communicated to the I&AP's.	Sufficient	
		(5) Development and implementation of a storm water management plan.	Partially compliant	A SWMP is developed but not implemented.	Sufficient	
		(6) Regular inspection of erosion prone areas for signs of erosion.	Not compliant	Erosion is not checked or attended to.	Sufficient	
22. Residue stockpiles	Direct Impact: Stockpiling residue material through or in close proximity to drainage lines may cause sedimentation and siltation of watercourses if not managed properly. Indirect Impact: Storm water runoff of dirt roads and un-vegetated areas may cause sedimentation and siltation of nearby watercourses.	(7) A soil conservation and stockpiling plan to be developed and implemented.	Not compliant	No soil conservation or stockpile management plan / procedure provided.	Sufficient	
		<u>On-site mitigation measures:</u>				
		(1) Avoid stockpiling material within drainage lines or in the 1:10 year flood line.	Compliant	Topsoil is not stockpiled within drainage lines or the 1:100-year flood lines.	Sufficient	
23. Screening Operations	Direct Impact: Stockpiling screened material through or in close proximity to drainage lines may cause sedimentation and siltation of watercourses if not managed properly. Indirect Impact: Storm water runoff of dirt roads and un-vegetated areas may cause sedimentation and siltation of nearby watercourses.	(2) Ensure erosion control measures or sediment control measures on stockpiles or in stockpile areas.	Not compliant	Little to no erosion control measures observed on stockpiles.	Sufficient	
		(3) Prevent the discharge of water containing polluting matter or visible suspended materials directly into drainage lines or streams.	Not compliant	Runoff containing silt are discharged from the mining area.	Sufficient	
		(4) Deflect any unpolluted water/runoff away from any dirty areas i.e. stockpile areas, mining areas, workshops, lay down areas etc.	Not compliant	Little to no clean water diversions are implemented around the mining area or stockpiles.	Sufficient	
		(5) Water from excavations or mining areas either through seepage or collection to be pumped and discharge into a pollution control dam.	Not applicable	No water collected from the pit (dry pit). No PCD is available.	Sufficient	
24. Discard disposal (backfilling of mining area)	Direct Impact: Backfilling material through or in close proximity to drainage lines may cause sedimentation and siltation of watercourses if not	(6) Before any water is permitted to enter natural drainage lines, the quality of water must comply with the standards contained in the Water Use Licence conditions.	Not applicable	No WUL	Sufficient	
		(7) River crossings shall be designed by a registered civil engineer.	Compliant	River crossings have been designed by a civil engineer.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
	managed properly. Indirect Impact: Storm water runoff of dirt roads and un-vegetated areas may cause sedimentation and siltation of nearby watercourses.	(8) Measures to avoid or prevent erosion formation must be incorporated into the designs of the infrastructure associated with the river crossings.	Compliant	Erosion prevention has been incorporated into the river crossing's designs.	Sufficient	
		(9) During construction through drainage lines, the majority of the flow must be allowed to pass down the stream. In stream diversions should be used rather than the construction of new channels.	Partially compliant	In stream diversions are largely used but inefficiently, causing erosion	Sufficient	
27. River crossings	Direct Impact: Excavating, stockpiling and transport of material through or in close proximity to drainage lines may cause sedimentation and siltation of watercourses if not managed properly. Indirect Impact: Storm water runoff of dirt roads and un-vegetated areas may cause sedimentation and siltation of nearby watercourses.	Legal requirements:				
		(1) A Water Use Licence to be obtained for all river crossings or development of infrastructure within or within close proximity to a watercourse as defined by the National Water Act, act no of 1996.	Not compliant	No WUL available	Sufficient	
		(2) Requirements stipulated by GN R. 704 to be considered in the final site layout plan by the appointed engineers.	Compliant	The SWMP has been designed by a team of registered engineers and incorporates R 704 requirements.	Sufficient	
		Specialist recommendations:				
30. Vehicular activity on haul roads; and operation of mining equipment	Direct Impact: Constructing access roads through drainage lines may cause sedimentation and siltation of watercourses if not managed properly. Indirect Impact: Storm water runoff of dirt roads may cause sedimentation and siltation of nearby watercourses.	Geohydrology –				
		(1) Development of an environmental monitoring programme in order to monitor the groundwater quality and groundwater level changes up- and downstream of the proposed open cast mine workings.	Partially compliant	A monitoring programme is available in the specialist studies but not implemented.	Sufficient	
		(2) Collected monitoring data (quarterly) may be used for future model updates (e.g. every second year).	Not applicable	No monitoring done	Sufficient	
30. Vehicular activity on haul roads; and operation of mining equipment	Direct Impact: Constructing access roads through drainage lines may cause sedimentation and siltation of watercourses if not managed properly. Indirect Impact: Storm water runoff of dirt roads may cause sedimentation and siltation of nearby watercourses.	(3) A number of geosites (i.e. boreholes, springs and surface water drainages) and newly proposed boreholes were identified (refer to the Geohydrological report in Appendix M) to be included into a monthly/quarterly monitoring programme.	Partially compliant	A groundwater monitoring programme is available in the specialist reports. No monitoring however is being done and only the baseline qualities are available.	Sufficient	
		(4) The parameters to be analysed should comprise the following: Physical-chemical parameters (pH, EC, TDS);Major anions (F, Cl, NO ₃ , SO ₄ , HCO ₃ , NH ₄ , PO ₄);Major cations (K, Na, Mg, Ca, NH ₄); and Other elements/metals (Fe, Mn, Zn, Pb, Co, Cr, Cr (VI)).	Not applicable	Monitoring not done	Sufficient	
		Hydrology –				
32. Water Management	Direct Impact: Runoff from lay down areas, construction areas, mining areas, stockpile areas, roads etc. potentially contains sediment and silt that poses a risk of affecting surrounding water courses and drainage	(1) A number of monitoring sample points have been identified in the Hydrological report (Appendix L). Additional sampling points have been recommended and should be included in the final water monitoring plan.	Partially compliant	The monitoring programme is still largely as per the specialist reports.	Sufficient	
		(2) As part of the monitoring program going forward, samples should be taken monthly for at least the first year of operation. This can be revised to quarterly monitoring if no concerns are	Not compliant	No monthly monitoring	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
	lines.	highlighted with the approval of DWAS.				
		(3) The monitoring should include the standard analysis of major cations/anions as well as ICP scan for metals.	Not applicable	No monitoring is done	Sufficient	
33. Rehabilitation of mining areas	Direct Impact: Runoff from exposed un-vegetated areas poses a risk in contaminating nearby streams, rivers, and drainage lines.	(4) A conceptual storm water management plan (Appendix L) has been developed based on the requirements of GN R. 704 of the National Water Act of 1998.	Not applicable	Noted	Sufficient	
		(5) Implementation of the guidance provided by the South African National Roads Agency Limited (SANRAL) drainage manual. This document provides guidance on maximum permissible velocities for grass covers to avoid erosion and should be consulted during the detailed design phase.	Not compliant	No storm water measures implemented around the mining area with large scale erosion observed. Some stormwater controls are implemented around the offices and ore stockpile areas.	Sufficient	
33. Rehabilitation of mining areas	Direct Impact: Runoff from exposed un-vegetated areas poses a risk in contaminating nearby streams, rivers, and drainage lines.	Compliance with standards:				
		(1) Develop a storm water management plan.	Partially compliant	A SWMP is available but not implemented.	Sufficient	
		(2) Develop and implement a water management plan and specifically include water monitoring and pollution prevention strategies.	Partially compliant	Various water management requirements are stipulated in the EMP and specialist reports that are available but is not consolidated into a water management plan.	Sufficient	
Alteration of drainage patterns						
18. Topsoil and subsoil stripping & stockpiling for mining operation area	Indirect Impact: Alteration of the drainage patterns may lead to the degradation of downstream or surrounding Wetlands which in its turn may affect the aquatic micro and macro ecology. Direct Impact: Site clearing and topsoil stripping through drainage lines may lead to the siltation of streams as well as lead to erosion along the river banks that will affect the surface water quality negatively.	Implementation of EMS:				
		(1) Develop a water monitoring management plan.	Partially compliant	A monitoring plan is available from the EIA specialist report but is not implemented or revised.	Sufficient	
		(2) Record and report all incidents related to affecting water quality.	Not compliant	No incidents were reported, and various incidents were observed on site that should have been reported, especially concerning erosion and release of wash water from workshop.	Sufficient	
		(3) Development of Mine Rehabilitation, decommissioning and mine closure liability Plan in compliance with GN R. 1147 of NEMA.	Compliant	The plans are available and being reviewed	Sufficient	
		(4) Ensuring corrective and preventative actions are taken to address nonconformities.	Not compliant	Some general non-conformities were addressed in terms of dust, but no non-conformities were noted or raised for water impacts and none were addressed. Various non-conformities were noted.	Sufficient	
		(5) Communicating findings of concern to I&AP.	Partially compliant	No findings were raised yet as there were no audits and no water issues are discussed during community meetings. This audit however will go through a PP process.	Sufficient	
		(6) Development and implementation of a storm water management plan.	Partially compliant	A SWMP are available but not implemented	Sufficient	
		(7) Regular inspection of erosion prone areas for signs of erosion.	Partially	Regular observations done during site visits.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
			compliant			
19. Opencast mining excavations	Indirect Impact: Alteration of the drainage patterns may lead to the degradation of downstream or surrounding Wetlands which in its turn may affect the aquatic micro and macro ecology. Direct Impact: Site clearing and topsoil stripping through drainage lines may lead to the siltation of streams as well as lead to erosion along the riverbanks that will affect the surface water quality negatively.	(8) A soil conservation and stockpiling plan to be developed and implemented.	Not compliant	No such plan has been provided.	Sufficient	
		<u>On-site mitigation measures:</u>				
		(1) Plan the final site layout in a manner as to reduce alteration of drainage patterns.	Compliant	The roads used were largely existing roads and where possible the designs ensured that as little as possible new roads were built.	Sufficient	
		(2) In the event that drainage patterns will be altered, the natural flow to be diverted.	Partially compliant	Where possible, the crossings aim to keep the flow in the same direction and line, with only the short disturbance of the road width.	Sufficient	
		(3) Any diversions to be in such a manner as to avoid erosion formation or pollution through siltation and sedimentation.	Not compliant	Erosion observed in and around these crossings.	Sufficient	
		(4) Ensure water quality complies with the requirements stipulated by the Water Use Licence conditions.	Not applicable	No WUL	Sufficient	
		(5) Channels and drainage systems required to divert the flow of drainage lines to be designed by a civil engineer, taking into consideration the peak volumes and flow.	Compliant	The SWMP has been designed by a team of registered engineers and has been done using the calculated flow volumes and peak flow volumes.	Sufficient	
22. Residue stockpiles	Indirect Impact: Alteration of the drainage patterns may lead to the degradation of downstream or surrounding Wetlands which in its turn may affect the aquatic micro and macro ecology. Direct Impact: Site clearing and topsoil stripping through drainage lines may lead to the siltation of streams as well as lead to erosion along the riverbanks that will affect the surface water quality negatively.	(6) Ensure rehabilitation measures are according to rehabilitation plan and that measures are taken to prevent the formation of erosion dongas or rills.	Not compliant	Rehabilitation has not started, and some erosion gullies have been observed below certain crossings.	Sufficient	
		<u>Legal requirements:</u>				
		(1) A Water Use Licence to be obtained for all river crossings or development of infrastructure within or within close proximity to a watercourse as defined by the National Water Act, act no of 1996.	Not compliant	No WUL	Sufficient	
		(2) Requirements stipulated by GN R. 704 to be considered in the final site layout plan by the appointed engineers.	Compliant	The SWMP has been designed by a team of registered engineers and incorporates R 704 requirements.	Sufficient	
		<u>Specialist recommendations:</u>				
		<u>Geohydrology –</u>				
27. River crossings	Indirect Impact: Alteration of the drainage patterns may lead to the degradation of downstream or surrounding	(1) Development of an environmental monitoring programme in order to monitor the groundwater quality and groundwater level changes up- and downstream of the proposed open cast mine workings. (2) Collected monitoring data (quarterly) may be used for future model updates (e.g. every second year).	Partially compliant	A groundwater monitoring programme is available in the specialist reports. No monitoring however is being done and only the baseline qualities are available.	Sufficient	
		(3) A number of geosites (i.e. boreholes, springs and surface water drainages) and newly proposed boreholes were identified (refer to the Geohydrological report in Appendix M) to be included into a monthly/quarterly monitoring programme.	Not compliant	These have not been included into the programme	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
	Wetlands which in its turn may affect the aquatic micro and macro ecology. Direct Impact: Site clearing and topsoil stripping through drainage lines may lead to the siltation of streams as well as lead to erosion along the riverbanks that will affect the surface water quality negatively.	(4) The parameters to be analysed should comprise the following: Physical-chemical parameters (pH, EC, TDS);Major anions (F, Cl, NO ₃ , SO ₄ , HCO ₃ , NH ₄ , PO ₄);Major cations (K, Na, Mg, Ca, NH ₄); and Other elements/metals (Fe, Mn, Zn, Pb, Co, Cr, Cr (VI)).	Not applicable	No monitoring done	Sufficient	
		(5) Emphasis should be placed on monitoring of groundwater levels prior mining and during the operation phase as well as to establish the origin of the elevated nitrate concentrations in the project area.	Partially compliant	Pre-mining water levels are available as part of the baseline studies. No operational monitoring done currently.	Sufficient	
		(6) Recording of pit dewatering rates. Initial monthly (and later quarterly) sampling and analysis (major and trace elements) of pumped water.	Not applicable	The operation has advised that no water seeps into the pits and no dewatering is being done.	Sufficient	
		Hydrology –				
32. Water Management	Indirect Impact: Alteration of the drainage patterns may lead to the degradation of downstream or surrounding Wetlands which in its turn may affect the aquatic micro and macro ecology. Direct Impact: Site clearing and topsoil stripping through drainage lines may lead to the siltation of streams as well as lead to erosion along the riverbanks that will affect the surface water quality negatively.	(1) A number of monitoring sample points have been identified in the Hydrological report (Appendix L). Additional sampling points have been recommended and should be included in the final water monitoring plan.	Partially compliant	The monitoring programme is still largely as per the specialist reports.	Sufficient	
		(2) As part of the monitoring program going forward, samples should be taken monthly for at least the first year of operation. This can be revised to quarterly monitoring if no concerns are highlighted with the approval of DWAS.	Not compliant	No monthly monitoring	Sufficient	
		(3) The monitoring should include the standard analysis of major cations/anions as well as ICP scan for metals.	Not applicable	No monitoring is done	Sufficient	
		(4) A conceptual storm water management plan (Appendix L) has been developed based on the requirements of GN R. 704 of the National Water Act of 1998.	Not applicable	Noted	Sufficient	
		(5) Implementation of the guidance provided by the South African National Roads Agency Limited (SANRAL) drainage manual. This document provides guidance on maximum permissible velocities for grass covers to avoid erosion and should be consulted during the detailed design phase	Not compliant	No storm water measures implemented around the mining area with large scale erosion observed. Some stormwater controls are implemented around the offices and ore stockpile areas.	Sufficient	
		Compliance with standards:				
		(1) Develop and implement a storm water management plan.	Partially compliant	A SWMP is available but not implemented.	Sufficient	
		(2) Develop and implement a water management plan specifically including a strategy for the management of alterations to drainage patterns.	Not compliant	No strategy, plan or implementation of such a plan for the alteration to drainage patterns.	Sufficient	
Tributaries (Upstream)						
18.Topsoil and subsoil stripping & stockpiling for	Indirect Impact: Alteration of the upstream drainage lines may lead to the degradation of downstream or surrounding	Implementation of EMS:				
		(1) Develop a water monitoring management plan.	Partially compliant	A monitoring plan is available from the EIA specialist report but is not implemented or revised.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
mining operation area	Wetlands which in its turn may affect the aquatic micro and macro ecology. Direct Impact: The destruction of tributaries may lead to a limited volume of water available to the downstream users. The reduction in water in the catchment may cause the degradation of surface water quality.	(2) Record and report all incidents related to affecting water quality.	Not compliant	No incidents were reported and various incidents were observed on site that should have been reported, especially concerning erosion and release of wash water from workshop.	Sufficient	
		(3) Development of Mine Rehabilitation, decommissioning and mine closure liability Plan in compliance with GN R. 1147 of NEMA, addressing the rehabilitation measures related to reinstatement of drainage lines.	Compliant	The plans are available and being reviewed	Sufficient	
		(4) Ensuring corrective and preventative actions are taken to address nonconformities.	Not compliant	Some general non-conformities were addressed in terms of dust, but no non-conformities were noted or raised for water impacts and none were addressed. Various non-conformities were noted.	Sufficient	
		(5) Communicating findings of concern to I&AP.	Partially compliant	No findings were raised yet as there were no audits and no water issues are discussed during community meetings. This audit however will go through a PP process.	Sufficient	
		(6) Development and implementation of a storm water management plan.	Partially compliant	A SWMP are available but not implemented	Sufficient	
		(7) Regular inspection of erosion prone areas for signs of erosion.	Partially compliant	Regular observations done during site visits.	Sufficient	
19. Opencast mining excavations	Indirect Impact: Alteration of the upstream drainage lines may lead to the degradation of downstream or surrounding Wetlands which in its turn may affect the aquatic micro and macro ecology. Direct Impact: The destruction of tributaries may lead to a limited volume of water available to the downstream users. The reduction in water in the catchment may cause the degradation of surface water quality.	(8) A soil conservation and stockpiling plan to be developed and implemented.	Not compliant	No such plan has been provided.	Sufficient	
		On-site mitigation measures:				
		(1) Plan the final site layout in a manner as to reduce the destruction of upstream tributaries.	Compliant	The roads used were largely existing roads and where possible the designs ensured that as little as possible new roads were built.	Sufficient	
		(2) In the event that drainage patterns will be altered, the natural flow to be diverted as to prevent reduction of water in the catchment.	Partially compliant	Where possible, the crossings aim to keep the flow in the same direction and line, with only the short disturbance of the road width.	Sufficient	
		(3) Any diversions to be in such a manner as to avoid erosion formation or pollution through siltation and sedimentation.	Not compliant	Erosion observed in and around these crossings.	Sufficient	
		(4) Ensure water quality complies with the requirements stipulated by the Water Use Licence conditions.	Not applicable	No WUL	Sufficient	
32. Water Management	Indirect Impact: Alteration of the upstream drainage lines may lead to the degradation of downstream or surrounding Wetlands which in its turn may affect the aquatic micro and macro ecology. Direct Impact: The destruction	(5) Channels and drainage systems required to divert the flow of drainage lines to be designed by a civil engineer, taking into consideration the peak volumes and flow.	Compliant	The SWMP has been designed by a team of registered engineers and has been done using the calculated flow volumes and peak flow volumes.	Sufficient	
		(6) Ensure rehabilitation measures are according to rehabilitation plan and that measures are taken to prevent the formation of erosion dongas or rills.	Not compliant	Rehabilitation has not started, and some erosion gullies have been observed below certain crossings.	Sufficient	
		Legal requirements:				
		(1) A Water Use Licence to be obtained for all river crossings or development of infrastructure within or within close proximity to a watercourse as defined by the National Water Act, act no of 1996.	Not compliant	No WUL	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
	of tributaries may lead to a limited volume of water available to the downstream users. The reduction in water in the catchment may cause the degradation of surface water quality.	(2) Requirements stipulated by GN R. 704 to be considered in the final site layout plan by the appointed engineers. Specialist recommendations: Geohydrology – (1) Development of an environmental monitoring programme in order to monitor the groundwater quality and groundwater level changes up- and downstream of the proposed open cast mine workings. (2) Collected monitoring data (quarterly) may be used for future model updates (e.g. every second year).	Compliant	The SWMP has been designed by a team of registered engineers and incorporates R 704 requirements.	Sufficient	
		(3) A number of geosites (i.e. boreholes, springs and surface water drainages) and newly proposed boreholes were identified (refer to the Geohydrological report in Appendix M) to be included into a monthly/quarterly monitoring programme.	Not compliant	These have not been included into the programme	Sufficient	
		(4) The parameters to be analysed should comprise the following: Physical-chemical parameters (pH, EC, TDS);Major anions (F, Cl, NO3, SO4, HCO3, NH4, PO4,);Major cations (K, Na, Mg, Ca, NH4,); and Other elements/metals (Fe, Mn, Zn, Pb, Co, Cr, Cr (VI),).	Not applicable	No monitoring done	Sufficient	
		(5) Emphasis should be placed on monitoring of groundwater levels prior mining and during the operation phase as well as to establish the origin of the elevated nitrate concentrations in the project area.	Partially compliant	Pre-mining water levels are available as part of the baseline studies. No operational monitoring done currently.	Sufficient	
		(6) Recording of pit dewatering rates. Initial monthly (and later quarterly) sampling and analysis (major and trace elements) of pumped water.	Not applicable	The operation has advised that no water seeps into the pits and no dewatering is being done.	Sufficient	
		Hydrology – (1) A number of monitoring sample points have been identified in the Hydrological report (Appendix L). Additional sampling points have been recommended and should be included in the final water monitoring plan.	Partially compliant	The monitoring programme is still largely as per the specialist reports.	Sufficient	
		(2) As part of the monitoring program going forward, samples should be taken monthly for at least the first year of operation. This can be revised to quarterly monitoring if no concerns are highlighted with the approval of DWAS.	Not compliant	No monthly monitoring	Sufficient	
		(3) The monitoring should include the standard analysis of major cations/anions as well as ICP scan for metals.	Not applicable	No monitoring is done	Sufficient	
		(4) A conceptual storm water management plan (Appendix L) has been developed based on the requirements of GN R. 704 of the National Water Act of 1998.	Not applicable	Noted	Sufficient	
		(5) Implementation of the guidance provided by the South African National Roads Agency Limited (SANRAL) drainage manual. This document provides guidance on maximum permissible velocities for grass covers to avoid erosion and should be consulted during the detailed design phase.	Not compliant	No storm water measures implemented around the mining area with large scale erosion observed. Some stormwater controls are implemented around the offices and ore stockpile areas.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		Compliance with standards:				
		(1) Develop and implement a storm water management plan.	Partially compliant	A SWMP is available but not implemented.	Sufficient	
		(2) Develop and implement a water management plan specifically including a strategy for the management of alterations to drainage patterns.	Not compliant	No strategy, plan or implementation of such a plan for the alteration to drainage patterns.	Sufficient	
Contamination of surface water						
19. Opencast mining excavations	Direct Impact: Throughout the operational phase of the mining operations, potential pollutants are used such as high levels of nitrates. Improper management of potential pollutants may lead to the degradation of water quality (both surface and sub-surface). Polluted water resources may affect the aquatic environment in a detrimental manner.	Implementation of EMS:				
		(1) Development and implementation of a water monitoring program.	Partially compliant	A monitoring plan is available from the EIA specialist report but is not implemented or revised.	Sufficient	
		(2) Development and implementation of an Integrated Water and Waste Management Plan (IWWMP)	Not compliant	IWWMP not provided and not implemented.	Sufficient	
		(3) Development and implementation of a storm water management plan.	Partially compliant	A SWMP has been developed but not implemented.	Sufficient	
		(4) Regular inspections of all areas posing a risk of contaminating water resources.	Partially compliant	No inspection records provided. Areas that work with hazchems, such as the workshops, have been observed during the audit and overall housekeeping and spillage control was good. Areas informally inspected regularly.	Sufficient	
		(5) Reporting and recording all related incidents according to a developed procedure.	Not compliant	No incidents were reported, and various incidents were observed on site that should have been reported, especially concerning erosion and release of wash water from workshop.	Sufficient	
		(6) Develop and implement an emergency preparedness plan.	Partially compliant	An emergency preparedness plan is available and implemented but do not effectively cover all hazchem emergencies.	Sufficient	
		(7) Ensuring corrective and preventative actions are taken to address nonconformities.	Not compliant	Some general non-conformities were addressed in terms of dust, but no non-conformities were noted or raised for water impacts and none were addressed. Various non-conformities were noted.	Sufficient	
25. Waste generation, storage and disposal	Direct Impact: These storage of large amounts of waste over an extended time in an area not lined or bunded poses a risk of forming potentially hazardous leachates. Indirect Impact: The hazardous leachate from the waste storage facilities poses a risk of contaminating both surface and sub-surface water resources. This may lead to the	(8) Communicating findings of concern to I&AP.	Compliant	This audit's findings will be communicated to the I & AP's through a PP process.	Sufficient	
		On-site mitigation measures:				
		(1) All sources of process water must be identified and quantified for the life cycle of the authorised activities.	Not compliant	All sources of process water have not been identified and quantified (such as in a water balance).	Sufficient	
		(2) A wastewater management system must be installed complying with regal requirements.	Partially compliant	A French drain system is available for the "grey water". Sumps and collection channels are available at the Hazchem storage facility but are not functional. The wash water from the workshop is not controlled.	Sufficient	
		(3) A water use licence for wastewater storage facilities to be	Not	No need to licence the current wastewater	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
	degradation of conditions for the aquatic ecology to thrive.	obtained.	applicable	storage facilities.		
		(4) All wastewater management facilities to be designed by a qualified engineer.	Compliant	The current wastewater facilities do not necessarily require a design by a qualified engineer. The storm water dams and PCD's have been designed by a qualified engineer.	Sufficient	
		(5) Wash bays, service areas, and fuel storage areas may not be located within the 1:100-year flood line or horizontal distance of 100 m (whichever is greater) of a watercourse or drainage line.	Compliant	These facilities were not located within the 1:100-year flood line.	Sufficient	
25. Waste generation, storage and disposal	<p>Direct Impact: These storage of large amounts of waste over an extended time in a area not lined or bunded poses a risk of forming potentially hazardous leachates.</p> <p>Indirect Impact: The hazardous leachate from the waste storage facilities poses a risk of contaminating both surface and sub-surface water resources. This may lead to the degradation of conditions for the aquatic ecology to thrive.</p>	(6) No environmentally harmful detergents may be used.	Compliant	No environmentally harmful detergents are used.	Sufficient	
		(7) Workshops, refuelling depots and washing areas shall be bunded.	Partially compliant	The Hazchem area is bunded, the workshop is concreted and sloped, the fuel tanks are bunded. The wash water from workshop is however not contained and there was a fuel tank on a stand that was not bunded.	Sufficient	
		(8) All bunded areas to be constructed in a way as to avoid seepage to the surrounding environment as well as be able to contain its content to a capacity of 110%.	Compliant	The bunded areas are concrete lined and have 110% capacity.	Sufficient	
		(9) Water from wash bays, service areas and fuel storage areas must be discharged into oil separators and sumps.	Not compliant	Wash water are not directed to a oil separator.	Sufficient	
		(10) Oils collected in this manner should be retained in a safe holding tank and removed from site by specialist oil recycling company or disposal at approved waste disposal sites.	Compliant	Used oil is stored in the Hazchem area and removed/collected by EWOR (Pty) Ltd. for recycling.	Sufficient	
		(11) No drainage from fuel storage areas to be permitted.	Compliant	Fuel storage bunded with no drainage from the bund area.	Sufficient	
		(12) Never hose oil or fuel spills into storm water drain or sewer, or into the surrounding natural environment.	Partially compliant	The area around the workshop and refuelling site was clean and neat with no visible spillages or wash water or hosed contamination. The wash water from the workshop goes into a sump but then overflow into the storm water drain.	Sufficient	
26. Chemical Toilets	<p>Direct Impact: Improper management of effluent from chemical toilets poses a high risk to contaminating water resources.</p> <p>Indirect Impact: Over an extended period of time the exposure to contamination will cause the degradation of fauna and flora habitats as well as affect the surface and sub-surface water quality.</p>	(13) Any contaminated storm water and other run-off from dirty areas to be disposed off in the suitably designed PCD's.	Not compliant	No PCD's are available.	Sufficient	
		(14) Any spill which may contaminate water must be treated according to the approved spill management procedure.	Partially compliant	Some spills observed in the bunded areas were treated with absorbent indicating that the spill clean-ups are taking place. These absorbents were not all removed during the audit.	Sufficient	
		(15) Contain oil or fuel spills in water using an approved oil absorbent fibre.	Compliant	Absorbents were available and used.	Sufficient	
		(16) Grey water not deemed suitable for dust suppression must be disposed of with other wastewater in the designated and suitably designed PCD.	Compliant	No PCD available. Grey water is disposed into the French drains (septic tank).	Sufficient	
		(17) Wastewater as well as spilled fuel collected within bunded areas and refuelling areas shall be disposed of or treated as hazardous waste.	Compliant	The spills observed in the bunded areas were treated with absorbent and removed to the hazardous waste bin.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
27. River crossings	Direct Impact: Storm water run-off from river crossing structures containing pollutants poses a risk in contaminating the surrounding water resources. Indirect Impact: Pollutants poses a risk in altering the conditions of the aquatic ecology to thrive.	(18) Avoid unnecessary alteration of drainage lines.	Compliant	No unnecessary alterations were done. The alterations that occurred is in the mining area, which has no alternative seen that the mining has to follow the reef.	Sufficient	
		(19) Avoid locating lay down areas, wash bays, workshops etc. within the 1:50 year flood line or within horizontal distance of 100 m (whichever is greater) of a water course.	Compliant	These areas are not situated in the 1:50 year flood line.	Sufficient	
		(20) Contain contaminated runoff from dirty areas (i.e. lay down areas, RoM and product stockpile areas, workshops, fuelling bays etc.) in suitable designed PCD's.	Not compliant	No PCD's are available.	Sufficient	
		(21) Contaminated runoff to be treated and re-used for processing water or dust suppression in dirty areas only when complying with legal requirements or water quality standards specified in the Water Use Licence.	Not compliant	Contaminated runoff is not treated or captured seen that no PCD's are available. No WUL is also available.	Sufficient	
28. Water supply (potable & process)	Direct Impact: Leaks and breaks of water supply infrastructure poses a risk of contaminating water resources. Indirect Impact: Pollutants poses a risk in altering the conditions of the aquatic ecology to thrive.	(22) Do not locate any ablation facilities, chemical toilets, sanitary convenience, septic tanks, or French drains within the 1:100-year flood line, or within a horizontal distance of 100 m (whichever is greater) of any watercourses.	Compliant	The French drain and office area is not situated in the 100m buffer or flood line.	Sufficient	
		(23) Do not allow the use of any drainage line or wetland for swimming, bathing, or cleaning of clothing, tools or equipment.	Compliant	No such activities are done in the drainage lines	Sufficient	
		(24) Prevent the discharge of water containing polluting matter or visible suspended materials directly into drainage lines or streams.	Not compliant	Erosion is observed all around site, which releases suspended solids into the drainage lines.	Sufficient	
29. Storage of fuel and lubricants in temporary facilities	Direct Impact: The use of improper storage facilities poses a risk of the surrounding environment to be exposed to continuous leaking of hydrocarbons leading possibly contaminating both surface and sub-surface water sources as well as the soils surrounding the facility.	(25) Deflect any unpolluted water/runoff away from any dirty area.	Partially compliant	Clean water diversions are implemented around the offices, workshop areas but no diversion is available around the mining area.	Sufficient	
		(26) Ensure that no storm water is allowed to enter any drainage installation for the reception, conveyance, storage, and or treatment of sewage.	Not compliant	Dirty storm water enters the drainage line from the mining area.	Sufficient	
		(27) Before any water is permitted to enter natural drainage lines, the quality of the water must comply with the standards contained within the Water Use Licensing conditions authorised by the DWAS.	Not applicable	No WUL is available.	Sufficient	
		(28) Ensure water passing through vehicle wash bays and workshops pass through oil separators before passing into conservancy tank.	Not compliant	Wash water from the workshops do not pass through any oil separators.	Sufficient	
32. Water Management	Direct Impact: The poor management of onsite water i.e. Storm water, process water, effluent, potable water etc. may lead to the contamination of water resources.	(29) Avoid unnecessary cutting roads through river, stream banks as this may lead to erosion causing siltation of streams and downstream dams.	Compliant	The roads that crosses drainage lines and streams are only the necessary roads where no alternatives are available.	Sufficient	
		Legal requirements:				
		(1) Obtain a Water Use Licence from the DWAS.	Not compliant	No WUL	Sufficient	
		Specialist recommendations:				
		Geohydrology –				

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(1) Development of an environmental monitoring programme in order to monitor the groundwater quality and groundwater level changes up- and downstream of the proposed open cast mine workings. (2) Collected monitoring data (quarterly) may be used for future model updates (e.g. every second year).	Partially compliant	A groundwater monitoring programme is available in the specialist reports. No monitoring however is being done and only the baseline qualities are available.	Sufficient	
		(3) A number of geosites (i.e. boreholes, springs and surface water drainages) and newly proposed boreholes were identified (refer to the Geohydrological report in Appendix M) to be included into a monthly/quarterly monitoring programme.	Partially compliant	A groundwater monitoring programme is available in the specialist reports. No monitoring however is being done and only the baseline qualities are available.	Sufficient	
		(4) The parameters to be analysed should comprise the following: Physical-chemical parameters (pH, EC, TDS);Major anions (F, Cl, NO3, SO4, HCO3, NH4, PO4,);Major cations (K, Na, Mg, Ca, NH4,); and Other elements/metals (Fe, Mn, Zn, Pb, Co, Cr, Cr (VI),).	Not applicable	Monitoring not done	Sufficient	
		(5) Emphasis should be placed on monitoring of groundwater levels prior mining and during the operation phase as well as to establish the origin of the elevated nitrate concentrations in the project area.	Partially compliant	Pre-mining water levels are available as part of the baseline studies. No operational monitoring done currently.	Sufficient	
		(6) Recording of pit dewatering rates. Initial monthly (and later quarterly) sampling and analysis (major and trace elements) of pumped water.	Not applicable	The operation has advised that no water seeps into the pits and no dewatering is being done.	Sufficient	
		Hydrology –				
		(1) A number of monitoring sample points have been identified in the Hydrological report (Appendix L). Additional sampling points have been recommended and should be included in the final water monitoring plan.	Not compliant	No IWWMP available or implemented	Sufficient	
		(2) As part of the monitoring program going forward, samples should be taken monthly for at least the first year of operation. This can be revised to quarterly monitoring if no concerns are highlighted with the approval of DWAS.	Partially compliant	A groundwater monitoring programme is available in the specialist reports. No monitoring however is being done and only the baseline qualities are available.	Sufficient	
		(3) The monitoring should include the standard analysis of major cations/anions as well as ICP scan for metals.	Not applicable	No WUL available	Sufficient	
		(4) A conceptual storm water management plan (Appendix L) has been developed based on the requirements of GN R. 704 of the National Water Act of 1998.	Not compliant	Not included into the emergency procedure.	Sufficient	
		(5) Implementation of the guidance provided by the South African National Roads Agency Limited (SANRAL) drainage manual. This document provides guidance on maximum permissible velocities for grass covers to avoid erosion and should be consulted during the detailed design phase.	Not compliant	No storm water measures implemented around the mining area with large scale erosion observed. Some stormwater controls are implemented around the offices and ore stockpile areas.	Sufficient	
		Compliance with standards:				
		(1) Develop and implement an Integrated Wastewater Management Plan (IWWMP).	Not compliant	No IWWMP available or implemented	Sufficient	
		(2) Develop and implement a water monitoring schedule according to the water management plan.	Partially compliant	A groundwater monitoring programme is available in the specialist reports. No monitoring	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
				however is being done and only the baseline qualities are available.		
		(3) Ensure compliance with the WUL conditions.	Not applicable	No WUL available	Sufficient	
		(4) Develop an emergency preparedness plan addressing the prevention and management of incidents related to water contamination	Not compliant	Not included into the emergency procedure.	Sufficient	
Soils						
Construction						
Hydrocarbon contamination						
1. Access and hauling along roads i.e. during the construction of roads	Direct Impact: Throughout the construction phase construction equipment are used. This poses a risk of hydrocarbon spills if equipment are not maintained. Depending on the size of the spill the level of contamination may vary from insignificant to significant and may affect the surrounding water quality (both surface and sub-surface) as well as the soil quality.	Implementation of EMS:				
2. Site clearing and topsoil stripping for lay down area and all related mining infrastructure		(1) Develop and implement a Hazardous substances management plan addressing handling, storage, and transport of hazardous substances.	Partially compliant	Hazchem storage area is available and largely compliant, hazchem control where largely compliant although there were some issues observed. This shows that some process is followed, and interviews indicated that employees knew what to do. No hazchem procedure or proof of training were provided.	Sufficient	
3. Weigh bridge		(2) Develop and implement an emergency response procedure addressing the procedure in case of a chemical spill. This procedure should ensure the fastest possible reaction to spills or accidents as well as addressing remediation procedures.	Partially compliant	An emergency procedure is available but do not sufficiently addresses chemical spills.	Sufficient	
		(3) Development and implementation of an incident reporting procedure.	Partially compliant	Incidents are reported informally, but no incident registers, procedures or records were provided.	Sufficient	
6. Storm water runoff management features	Direct Impact: Storm water from dirty areas such as the mining area, lay down areas, workshops, stores, wash bays etc. poses a risk to hydrocarbon containing effluent to contaminate water resources. Depending on the level of contamination the risk may vary from insignificant to significant and may affect the surrounding	(4) Ensuring corrective and preventative actions are taken to address nonconformities.	Partially compliant	Overall housekeeping was good, and it was observed that absorbents were used to treat chemical spills in the hazchem store. The absorbents were not yet cleaned and a spillage from a hazardous waste bin was not yet attended to. This indicates that some corrective actions are taken but are not entirely sufficient.	Sufficient	
		(5) Communicating findings of concern to I&AP.	Compliant	Findings from this audit will be communicated to the I&AP's.	Sufficient	
		On-site mitigation measures:				

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
	water quality (both surface and sub-surface) as well as the soil quality.	(1) Fuel to be stored in above ground storage tanks or sealed containers.	Compliant	Fuel are stored in above ground storage tanks	Sufficient	
		(2) Hazardous substances to be stored within a bund area with a sump drainage.	Compliant	A hazchem store is available and used to store chemicals.	Sufficient	
		(3) Bunded areas to be designed to contain at least 110% of the storing capacity.	Compliant	The fuel and hazchem store have a 110% capacity.	Sufficient	
		(4) All spills (minor and major) must be cleaned and remediated to the satisfaction of the appointed environmental representative or the Department within 24 hours.	Partially compliant	Some spillages were observed treated with absorbent, which is then collected and placed into the hazardous waste bin for removal. Some spillages observed were not attended to within 24 hours (immediately).	Sufficient	
9.Stores, workshops & wash bays	Direct Impact: Throughout the construction & operation phase equipment and plant are used. This poses a risk of hydrocarbon spills if equipment/plant are not maintained. Depending on the size of the spill the level of contamination may vary from insignificant to significant and may affect the surrounding water quality (both surface and sub-surface) as well as the soil quality. The improper management of oil separators/sumps may also lead to the contamination of the surrounding environment.	(5) Any spillages on site to be excavated to the visible depth of impact and disposed of for removal to a registered hazardous waste disposal site. Alternative in-situ remediation techniques may be used.	Partially compliant	Any spillages are removed by collecting the contaminated soil to the depth of contamination (as is visually observed). Hazardous waste disposal could not be confirmed as there were no hazardous waste manifests. Only one oil spill was observed.	Sufficient	
		(6) On site spill kits or absorbent materials must be readily available. These kits must include materials to absorb, breakdown, and where possible encapsulate minor material spillages.	Compliant	Spill kits were observed on site.	Sufficient	
		(7) Where possible and practical all maintenance of vehicles and equipment shall take place in the workshop areas. Should emergency repairs be necessary, drip trays or tarpaulins must be utilised to ensure the collection of any hydrocarbons.	Compliant	During the audit, maintenance was taking place in the workshop. Some maintenance is taking place in the pit for less movable plant.	Sufficient	
		(8) All vehicles, plant, and equipment must be inspected on a daily basis. Records to be made available for these inspections.	Compliant	Pre-use inspections are done on equipment.	Sufficient	
		(9) Drip trays or any form of oil absorbent material must be placed underneath vehicles and equipment (where possible leaks may occur) when not in use.	Compliant	Drip trays are effectively used to capture used oil. Any spillages are treated with absorbent and removed to hazardous waste bins.	Sufficient	
		(10) All vehicles, plant, and equipment must be well maintained to minimise the risk of fuel and oil leakages.	Compliant	Regular maintenance is done. No leaking machines were observed during the audit.	Sufficient	
11. Fuel operating power generators	Direct Impact: The construction of improper generator facilities poses a risk of the surrounding environment to be exposed to continuous leaking of hydrocarbons leading possibly contaminating both surface and sub-surface water sources as well as the soils surrounding the facility.	(11) Leaking equipment shall be removed and repaired immediately from site to facility designated for repairs.	Compliant	Regular maintenance is done. No leaking machines were observed during the audit.	Sufficient	
		Legal requirements:				
		(1) Section 30 of the National Environmental Management Act (NEMA), Act 107 of 1998 describes measures to be taken to control emergency incidents. These requirements should be included in the development of the Emergency Response procedure.	Partially compliant	Not all s.30 requirements included into the emergency procedures, only some requirements in terms of fire and explosions.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
13. Fuel storage	Direct Impact: The construction of improper storage facilities poses a risk of the surrounding environment to be exposed to continuous leaking of hydrocarbons leading possibly contaminating both surface and sub-surface water sources as well as the soils surrounding the facility.	(2) Section 20 of the National Water Act 36 of 1998 describes the procedure for the control of incidents involving Hazardous substances. These requirements should also be included in the Emergency response procedure.	Partially compliant	Not all s.20 requirements included into the emergency procedures, only some requirements in terms of fire and explosions.	Sufficient	
		(3) GN R. 1237 published under the Mine Health and Safety Act of 1996 describes the requirements for the storage of hazardous substances. These requirements should be incorporated into the Hazardous substance's management plan.	Partially compliant	Some of these measures are provided in the emergency procedure but not all.	Sufficient	
		(4) Section 21 of the Mine Health and safety Act of 1996 describes the requirements for the acquisition of Hazardous chemicals. These requirements should be considered as part of the mine acquisition process.	Not applicable	These considerations do not form part of the procurement process.	Sufficient	
15. Transport of construction material, mobile plant and equipment to the site	Direct Impact: Throughout the construction phase construction equipment are used. This poses a risk of hydrocarbon spills if equipment is not maintained. Depending on the size of the spill the level of contamination may vary from insignificant to significant and may affect the surrounding water quality (both surface and sub-surface) as well as the soil quality.	(5) Regulation 277, 273, and 279 of GN R. 225 of the National Road traffic Act of 1996 describes the requirements of transporting hazardous waste. These requirements should be incorporated in both the Hazardous substances management plan and the Waste Management plan.	Not compliant	No hazardous substances management plan or Waste management plan.	Sufficient	
		(6) Regulation 277 and 273 of GN R. 225 of the National Road traffic Act of 1996 describes the Loading and offloading of dangerous goods. These requirements should be addressed in the Hazardous substances' management plan.	Not compliant	No hazardous substances management plan or Waste management plan.	Sufficient	
		(7) All requirements described in the Hazardous substance Act of 1973 should be included in the Hazardous substances management plan.	Not compliant	No hazardous substances management plan or Waste management plan.	Sufficient	
		(8) The storage of hazardous substances must be in compliance with regulation 4 of GN R. 704 of the National Environmental Management Act.	Compliant	Hazchem storage largely complies with the NEMA requirements.	Sufficient	
		Specialist recommendations:				
		Geohydrology –				
16. Use of existing drilled / new boreholes	Direct Impact: The lack of inspections or regular maintenance of facilities such as water pumps poses a risk to contaminating the surface and sub-surface water resource.	(1) Development of an environmental monitoring programme in order to monitor the groundwater quality and groundwater level changes up- and downstream of the proposed open cast mine workings.	Compliant	A monitoring programme is available on the groundwater specialist study in Appendix M of the EIA.	Sufficient	
		(2) Collected monitoring data (quarterly) may be used for future model updates (e.g. every second year).	Not applicable	No data collected except baseline data	Sufficient	
		(3) A number of geosites (i.e. boreholes, springs and surface water drainages) and newly proposed boreholes were identified (refer to the Geohydrological report in Appendix M) to be included into a monthly/quarterly monitoring programme.	Partially compliant	A groundwater monitoring programme is available in the specialist reports. No monitoring however is being done and only the baseline qualities are available.	Sufficient	
		(4) The parameters to be analysed should comprise the following: Physical-chemical parameters (pH, EC, TDS); Major anions (F, Cl, NO ₃ , SO ₄ , HCO ₃ , NH ₄ , PO ₄ ,); Major cations (K, Na, Mg, Ca, NH ₄ ,); and Other elements/metals (Fe, Mn, Zn, Pb, Co, Cr, Cr (VI),).	Not applicable	Monitoring not done	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		Hydrology –				
		(1) A number of monitoring sample points have been identified in the Hydrological report (Appendix L). Additional sampling points have been recommended and should be included in the final water monitoring plan.	Not compliant	No monitoring programme implemented	Sufficient	
		(2) As part of the monitoring program going forward, samples should be taken monthly for at least the first year of operation. This can be revised to quarterly monitoring if no concerns are highlighted with the approval of DWAS.	Not compliant	No monitoring programme implemented	Sufficient	
		(3) The monitoring should include the standard analysis of major cations/anions as well as ICP scan for metals	Not applicable	No monitoring programme implemented	Sufficient	
		Compliance with standards:				
		1) Development of water management plan addressing monitoring and management requirements.	Not compliant	No water management plan available.	Sufficient	
		(2) Development of a storm water management plan addressing the separation of "dirty" and clean “areas"	Compliant	A detailed storm water management plan complete with detailed engineering designs are available.	Sufficient	
		(3) Development of emergency response plan with specific reference to spill prevention and remediation.	Partially compliant	An emergency procedure is available but do not sufficiently addresses chemical spills.	Sufficient	
		(4) Development and implementation of vehicle/plant/equipment maintenance plan with specific reference to daily inspections of plant/vehicles/equipment for leaks or breakages.	Compliant	Pre-use inspections are done on equipment and regular maintenance is undertaken.	Sufficient	
		(5) Development and implementation of a Hazardous substances management plan	Partially compliant	Hazardous substances controls are implemented and overall compliance in terms of hazchem controls were good. A hazardous substances management plan/procedure were not provided.	Sufficient	
Soil degradation						
1. Access and hauling along roads i.e. during the construction of roads	Direct Impact: As part of the construction activity related to roads, valuable topsoil's will be removed. Improper management of topsoil or fertile soil may cause the loss of flora micro-ecosystems and cause the degradation of soil quality.	Implementation of EMS:				
		(1) Develop and implement a soil conservation and stockpile management plan.	Not compliant	No soil conservation or stockpile management plan / procedure provided.	Sufficient	
		(2) Frequent Inspections of areas prone to degradation.	Not compliant	Proof of inspections on erosion prone areas were not provided and numerous cases of erosion observed on site, on both cleared areas and topsoil stockpiles.	Sufficient	
		(3) Reporting and recording incidents related to degradation of soil resources.	Not compliant	No incidents were reported related to degradation of soil resources while numerous incidents were observed at the time of the audit.	Sufficient	
		(4) Ensuring corrective and preventative actions are taken to address nonconformities.	Not compliant	Numerous incidents of erosion and soil loss observed during the time of the audit with little to no corrective or preventative actions.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(5) Communicating findings of concern to I&AP.	Compliant	This audit will be taken through a PP process and findings will be communicated.	Sufficient	
2. Site clearing and topsoil stripping for lay down area and all related mining infrastructure	Direct Impact: If not managed properly, fertile soil will be lost during site clearance and topsoil stripping. Loss of fertile soil will cause the degradation of habitat for flora micro- and macro organisms.	(6) Development of Mine Rehabilitation, decommissioning and mine closure liability Plan in compliance with GN R. 1147 of NEMA.	Compliant	A rehabilitation, decommissioning and mine closure plan is available and currently being reviewed.	Sufficient	
		On-site mitigation measures:				
		(1) All areas to be stripped firstly of topsoil and fertile soils and stockpiled in a designated area.	Not compliant	Various areas have been stripped without removing or stockpiling the topsoil. The new landing strip of 3-4ha has no topsoil removed or stored.	Sufficient	
		(2) Do not mix sub-soil with topsoil and fertile soils.	Not compliant	The topsoil that have been collected and stockpiled are stockpiled as one, with no separation between sub-soil and topsoil.	Sufficient	
9.Stores, workshops & wash bays	Direct Impact: The continuous spills of hydrocarbons and hazardous substances poses an environmental risk to the surrounding soil quality. The degradation of the soil quality will cause the loss of habitat or healthy environment for micro ecosystems.	(3) Topsoil and fertile soil to be protected from contamination (i.e. hydrocarbons or infertile material).	Compliant	Topsoil are protected from contamination.	Sufficient	
		(4) Topsoil and fertile soil stockpiles to be protected from weathering conditions such as covering the stockpiles with indigenous, non-invasive vegetation.	Not compliant	The topsoil stockpiles observed do not have vegetation cover and have erosion.	Sufficient	
		(5) Avoid stockpiling topsoil and fertile soil stockpiles within drainage lines or within the 1:10 year flood lines.	Compliant	Topsoil is not stockpiled within drainage lines or the 1:100-year flood lines.	Sufficient	
10. Ablutions & change house with sewage treatment plant	Direct Impact: Continuous leaking or lack of maintenance poses a risk to contaminating the surrounding soils and degrading the soil quality. This will affect the micro-ecosystems in a negative manner.	(6) Implement storm water control measures on topsoil and fertile soil stockpiles.	Not compliant	No erosion control measures to prevent soil loss due to storm water.	Sufficient	
		(7) Exposed areas to be re-vegetated with indigenous or non-invasive species or protected from erosion.	Not compliant	The topsoil stockpiles observed do not have vegetation cover and have erosion.	Sufficient	
		(8) Rehabilitation of areas after the completion of works to take place as soon as possible.	Not compliant	Some areas were observed that can be rehabilitated but have not.	Sufficient	
		(9) Avoid overexposing un-vegetated areas as far as possible.	Not compliant	Various unvegetated areas are over-exposed.	Sufficient	
		Legal requirements:				
		(1) Section 28 of NEMA relates to the duty of care and remediation of environmental damage.	Not compliant	With the clearance of an area of 3-4ha without any licencing or control measures, such as topsoil stripping, walkthrough, storm water controls, etc., BCR did not sufficiently implement duty of care to preserve soil and topsoil.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
11. Fuel operating power generators	Direct Impact: Continuous exposure to hydrocarbon leaks poses a risk to the degradation of the surrounding soil resources.	(2) The Conservation of Agriculture Resources Act (Act no. 107 of 1998) requires the protection of land against soil erosion and the prevention of water logging and salinization of soils by means of suitable soil conservation works to be constructed and maintained. These requirements should form part of the Soil Conservation and Stockpile management plan.	Not compliant	No soil conservation or stockpile management plan / procedure provided. Various erosion observed.	Sufficient	
13. Fuel storage	Direct Impact: Continuous exposure to hydrocarbon leaks poses a risk to the degradation of the surrounding soil resources.	Specialist recommendations:				
		(1) Strip all usable soil, irrespective of soil depth.	Not compliant	Only a small amount of soil has been stripped and the majority of topsoil has not been stripped.	Sufficient	
		(2) Implement live placement of soil where possible, improve organic status of soils, maintain fertility levels and curb topsoil loss.	Partially compliant	Available topsoils not sufficiently protected.	Sufficient	
13. Fuel storage	Direct Impact: Continuous exposure to hydrocarbon leaks poses a risk to the degradation of the surrounding soil resources.	(3) Implement surface digital terrain mapping to ensure surface water control measures are implemented to ensure free draining system with minimal soil erosion.	Compliant	Digital terrain modelling is currently being undertaken as part of the update and review of the rehabilitation and closure plans.	Sufficient	
		(4) Loss of agricultural land due to establishment of infrastructure is a long-term loss and no mitigation measures exist. Mitigation is restricted to limitation of extent of impact to the immediate area of impact and minimisation of off-site impacts.	Not compliant	The footprint of the activities have exceeded the authorised footprint with the clearance of the landing strip area that totals 3-4ha.	Sufficient	
		(5) Loss of agricultural land due to opencast mining is a temporary loss which can be mitigated by appropriate backfilling and replacement of stockpiled topsoil. If done correctly, most of the original agricultural potential will be restored.	Not applicable	The current mining area is restricted to phase 1 which is on a hillside and koppie. This area had no agricultural potential except grazing. The grazing potential was medium-low. The current rehabilitation and closure plans are to return the site to a pre-mining end land use.	Sufficient	
		(6) An Environmental Coordinator must manage environmental impacts in coordination with construction and operation schedule.	Not compliant	No appointed Environmental Coordinator	Sufficient	
		(7) In the event that contractors are to be appointed these contractors to sign and undertake environmental compliance.	Partially compliant	The mining contractor is responsible for most of the environmental compliance observed on site.	Sufficient	
		(8) Keep disturbed areas and stockpiles to minimum to prevent soil loss.	Partially compliant	Most areas that have been cleared remained as is at the time of the audit except the large landing strip that was built and not included into the authorised footprints.	Sufficient	
		(9) Identify suitable areas to stockpile stripped soil.	Compliant	Although only some of the topsoil of the areas that were cleared has been collected and stockpile, the stockpiles were situated where planned.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(10) Prevent surface runoff and seepage on site from contaminating stockpiled soils and stripped areas.	Partially compliant	Most surface runoff is not contaminated but does contain silt from erosion. The wash water from the workshop however enters surface areas and potentially soils.	Sufficient	
		(11) Minimise soil erosion through wind and water	Not compliant	Rampant erosion was observed on various stockpiles and around site.	Sufficient	
		(12) Remediate and rehabilitate disturbed areas in accordance with development plan	Partially compliant	The rehabilitation plan is being updated and reviewed and new milestones will be set. Some areas are available for rehabilitation currently and should proceed but hasn't.	Sufficient	
		Compliance with standards:				
		(1) Development of a soil conservation management plan.	Not compliant	No soil conservation plan is available.	Sufficient	
		(2) Development of a storm water management plan.	Compliant	A SWMP is available	Sufficient	
		(3) Development and implementation of vehicle/plant/equipment maintenance plan with specific reference to daily inspections of plant/vehicles/equipment for leaks or breakages.	Compliant	Pre-use checklists are done, and maintenance are routinely undertaken.	Sufficient	
Erosion						
1. Access and hauling along roads i.e. during the construction of roads	Indirect Impact: Improper management of storm water may lead to erosion along the access routes. This may lead to the loss of fertile soil and in its turn effect the micro-ecosystems of the surrounding environment.	Implementation of EMS:				
		(1) Development and implementation of a storm water management plan.	Partially compliant	A SWMP is available but not implemented.	Sufficient	
		(2) Regular inspection of erosion prone areas for signs of erosion.	Not compliant	Erosion is not checked or attended to.	Sufficient	
		(3) A soil conservation and stockpiling plan to be developed and implemented.	Not compliant	No soil conservation or stockpile management plan / procedure provided.	Sufficient	
		(4) Monthly monitoring of water quality (as per recommendation of specialist study).	Not compliant	No monitoring undertaken	Sufficient	
2. Site clearing and topsoil stripping for lay down area and all related mining infrastructure	Direct Impact: Un-vegetated areas exposed to weathering for an extended period of time will lead to erosion. Erosion prone areas has a high risk of losing fertile soil caused by flash floods. The loss of fertile soil will result in the loss of important micro ecosystems.	(5) Reporting and recording incidents related to erosion.	Not compliant	No incidents were reported related to degradation of soil resources while numerous incidents were observed at the time of the audit.	Sufficient	
		(6) Ensuring corrective and preventative actions are taken to address nonconformities.	Not compliant	Numerous incidents of erosion and soil loss observed during the time of the audit with little to no corrective or preventative actions.	Sufficient	
		(7) Communicating findings of concern to I&AP.	Compliant	This audit will be taken through a PP process and findings will be communicated.	Sufficient	
		On-site mitigation measures:				
		(1) Soil conservation measures to be implemented on stockpiles to prevent erosion. This could include the use of erosion control fabric or non-invasive grass seeding.	Not compliant	Little to no erosion measures have been observed implemented on topsoil stockpiles.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(2) All areas susceptible to erosion must be identified and protection measures be implemented.	Not compliant	Various areas with high levels of erosion observed. On these areas, no efforts were observed to correct or prevent erosion.	Sufficient	
		(3) Retain natural trees, shrubbery and grass species where possible.	Not compliant	There are a few areas on site that has trees that was left undamaged, but this is very limited, and most areas are open ground and unprotected (in terms of runoff).	Sufficient	
6. Storm water runoff management features	Direct Impact: Improper management of storm water runoff poses a high risk to erosion. Un-vegetated or degraded areas exposed to weathering for an extended period of time are a contributing factor. Erosion prone areas has a high risk of losing fertile soil caused by flash floods. The loss of fertile soil will result in the loss of important micro ecosystems.	(4) In areas within close proximity to wetlands, rivers and streams, sedimentation control measures to be implemented, specifically when excavations or disturbances takes place within riverbanks, or the riverbed.	Not compliant	Various crossings of drainage lines occurred at the mining area and the new landing strip, as well as some of the laydown areas, and little to no sedimentation control was and is undertaken.	Sufficient	
		(5) Formation of erosion channels ("dongas") to be prevented by applying soil erosion control and bank stabilisation procedures as specified by a qualified environmental specialist.	Not compliant	Erosion channels observed on sidewalls and open areas. No preventative measures implemented.	Sufficient	
		(6) Erosion formation beyond rills must be avoided.	Not applicable		Sufficient	
		(7) Erosion damages to be repaired as soon as possible and no later than the target set by the Management team.	Not compliant	Various areas with high levels of erosion observed. On these areas, no efforts were observed to correct or prevent erosion.	Sufficient	
		(8) Slopes steeper than 1(V):4(H) or slopes where soils are by nature dispersive or erodible must be stabilised.	Not compliant	Various slopes greater than 1:4 observed (mostly at angle of repose of 37°) without any stabilisation. Various erosion channels are visible on these slopes.	Sufficient	
15. Transport of construction material, mobile plant and equipment to the site	Indirect Impact: Improper management of storm water may lead to erosion along the access routes. This may lead to the loss of fertile soil and in its turn effect the micro-ecosystems of the surrounding environment.	(9) Where berms are installed on severe slopes the outflow shall be suitably stone pitched to prevent erosion from starting on berms.	Not compliant	No dispersion measures implemented on outflows.	Sufficient	
		(10) Access routes should not traverse slopes with gradients in excess of 8%.	Compliant	Access routes are largely at low slopes except where it is unavoidable.	Sufficient	
		(11) Wherever possible, access routes should avoid crossing drainage lines and riparian zones.	Not applicable	Most access routes do not have alternative routes and are using routes that was there before mining started. Avoidance is thus not possible or feasible.	Sufficient	
		(12) Drainage lines should not be altered and should be level with the surrounding land once subsistence has occurred.	Not compliant	Drainage lines crossed do not have planned outflows or diversions. Most crossings have been left to naturally find the shortest route.	Sufficient	
		(13) Run-off from roads must be managed in a way to avoid erosion and prevent pollution.	Not compliant	Runoff from roads are mostly channelled but overall has limited no control, with deep erosion channels forming in the channels and at the outflows.	Sufficient	
		Legal requirements:				

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(1) Section 28 of NEMA relates to the duty of care and remediation of environmental damage.	Not compliant	Numerous evidences exist to suggest that BCR did not apply a duty of care approach to erosion control.	Sufficient	
		(2) The Conservation of Agriculture Resources Act (Act no. 107 of 1998) requires the protection of land against soil erosion and the prevention of water logging and silinization of soils by means of suitable soil conservation works to be constructed and maintained. These requirements should form part of the Soil Conservation and Stockpile management plan.	Not compliant	Numerous evidences exist to suggest that BCR did not apply a duty of care approach to erosion control.	Sufficient	
		Specialist recommendations:				
		Hydrology –				
		(1) A conceptual storm water management plan (Appendix L) has been developed based on the requirements of GN R. 704 of the National Water Act of 1998.	Not applicable	Noted	Sufficient	
		(2) Implementation of the guidance provided by the South African National Roads Agency Limited (SANRAL) drainage manual. This document provides guidance on maximum permissible velocities for grass covers to avoid erosion and should be consulted during the detailed design phase.	Not compliant	This guidance document has been included into the storm water designs but not in the implementation of the roads' construction.	Sufficient	
		Soil –				
		(1) Disturbance areas to be stripped progressively as required reducing erosion and sediment generation, to reduce the extent of topsoil and utilise stripped topsoil as soon as possible for rehabilitation.	Not compliant	Very limited stripping has been done.	Sufficient	
		(2) The surface of the completed stockpile must be left in a rough condition to promote water infiltration and minimise erosion prior to vegetation establishment;	Compliant	Most surfaces are rough, and infiltration does happen to minimize erosion.	Sufficient	
		(3) Topsoil stockpiles to have an embankment grade of approximately 1m vertical:4m horizontal (to limit the potential for erosion of the outer pile face);	Not compliant	The topsoil stockpiles observed are largely in the form of berms and erosion are visible on the berm's slopes. The slopes are at angle of repose, not 1:4.	Sufficient	
		(4) Implement surface digital terrain mapping to ensure surface water control measures are implemented to ensure free draining system with minimal soil erosion.	Compliant	Digital terrain modelling is currently being undertaken as part of the update and review of the rehabilitation and closure plans.	Sufficient	
		(5) Minimise soil erosion through wind and water	Not compliant	Rampant erosion was observed on various stockpiles and around site.	Sufficient	
		Biodiversity – Also see Vegetation and Habitat loss				
		(1) Limit the complete removal of vegetation.	Not compliant	Complete vegetation removal has been done at the landings strip as well, which increases the areas completely stripped of vegetation.	Sufficient	
		(2) Limit work outside the proposed footprint.	Not compliant		Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(3) Reinforce portions of existing access routes that are prone to erosion or seasonal inundation, create structures or low banks to drain the access road rapidly during rainfall events, yet preventing erosion of the track and surrounding areas. Ensure that water flows are never concentrated in any way as soils are highly erodible.	Not compliant	Little to no erosion measures have been observed implemented on the access routes.	Sufficient	
		(4) Ensure that runoff from compacted or sealed surfaces is slowed down and dispersed sufficiently to prevent accelerated erosion from being initiated (erosion management plan required).	Not compliant	Little to no runoff control has been observed on open erosion prone areas.	Sufficient	
		Compliance with standards:				
		(1) Development and implementation of a storm water management plan.	Partially compliant	A SWMP is available but not implemented.	Sufficient	
		(2) Development of a soil conservation management plan.	Not compliant	No soil conservation plan is available.	Sufficient	
		(3) Development of Mine Rehabilitation, decommissioning and mine closure liability Plan in compliance with GN R. 1147 of NEMA.	Compliant	A rehabilitation, decommissioning and mine closure plan is available and currently being reviewed.	Sufficient	
Operation						
Soil degradation						
18.Topsoil and subsoil stripping & stockpiling for mining operation area	Direct Impact: If not managed properly, fertile soil will be lost during site clearance, topsoil striping and stockpiling. Loss of fertile soil will cause the degradation of habitat for flora micro- and macro organisms.	Implementation of EMS:				
		(1) Develop and implement a soil conservation and stockpile management plan.	Not compliant	No soil conservation or stockpile management plan / procedure provided.	Sufficient	
		(2) Frequent Inspections of areas prone to degradation.	Not compliant	Proof of inspections on erosion prone areas were not provided and numerous cases of erosion observed on site, on both cleared areas and topsoil stockpiles.	Sufficient	
19.Opencast mining excavations	Direct Impact: If not managed properly, fertile soil will be lost during site clearance, topsoil striping and stockpiling. Loss of fertile soil will cause the degradation of habitat for flora micro- and macro organisms.	(3) Reporting and recording incidents related to degradation of soil resources.	Not compliant	No incidents were reported related to degradation of soil resources while numerous incidents were observed at the time of the audit.	Sufficient	
		(4) Ensuring corrective and preventative actions are taken to address nonconformities.	Not compliant	Numerous incidents of erosion and soil loss observed during the time of the audit with little to no corrective or preventative actions.	Sufficient	
		(5) Communicating findings of concern to I&AP.	Compliant	This audit will be taken through a PP process and findings will be communicated.	Sufficient	
20.Drilling & Blasting	Direct Impact: Improper management of blasting activities poses the risk of contaminating soil resources with pollutants such as a high	(6) Development of Mine Rehabilitation, decommissioning and mine closure liability Plan in compliance with GN R. 1147 of NEMA.	Compliant	A rehabilitation, decommissioning and mine closure plan is available and currently being reviewed.	Sufficient	
		On-site mitigation measures:				

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
	content of Nitrates. The presence of pollutant in the soils results in the degradation of the quality.	(1) All areas to be stripped firstly of topsoil and fertile soils and stockpiled in a designated area.	Not compliant	Various areas have been stripped without removing or stockpiling the topsoil. The new landing strip of 3-4ha has no topsoil removed or stored.	Sufficient	
21. RoM & product stockpiling	Indirect Impact: The degradation of soil quality poses the risk of degrading the conditions for flora and fauna micro ecosystems.	(2) Do not mix sub-soil with topsoil and fertile soils.	Not compliant	The topsoil that have been collected and stockpiled are stockpiled as one, with no separation between sub-soil and topsoil.	Sufficient	
21. RoM & product stockpiling	Direct Impact: If not managed properly, fertile soil will be lost during site clearance, topsoil striping and stockpiling. Loss of fertile soil will cause the degradation of habitat for flora micro- and macro organisms.	(3) Topsoil and fertile soil to be protected from contamination (i.e. hydrocarbons or infertile material).	Compliant	Topsoils are protected from contamination.	Sufficient	
		(4) Topsoil and fertile soil stockpiles to be protected from weathering conditions such as covering the stockpiles with indigenous, non-invasive vegetation.	Not compliant	The topsoil stockpiles observed do not have vegetation cover and have erosion.	Sufficient	
22. Residue stockpiles	Direct Impact: If not managed properly, fertile soil will be lost during site clearance, topsoil striping and stockpiling. Loss of fertile soil will cause the degradation of habitat for flora micro- and macro organisms.	(5) Avoid stockpiling topsoil and fertile soil stockpiles within drainage lines or within the 1:10 year flood lines.	Compliant	Topsoils is not stockpiled within drainage lines or the 1:100-year floodlines.	Sufficient	
		(6) Implement storm water control measures on topsoil and fertile soil stockpiles.	Not compliant	No erosion control measures to prevent soil loss due to storm water.	Sufficient	
		(7) Exposed areas to be re-vegetated with indigenous or non-invasive species or protected from erosion.	Not compliant	The topsoil stockpiles observed do not have vegetation cover and have erosion.	Sufficient	
		(8) Rehabilitation of areas after the completion of works to take place as soon as possible.	Not compliant	Some areas were observed that can be rehabilitated but have not.	Sufficient	
23. Screening Operations	Direct Impact: Improper management of stockpile area i.e. mixing of topsoil and fertile soils with subsoil or RoM product poses a risk of degrading of soil quality.	(9) Avoid overexposing un-vegetated areas as far as possible.	Not compliant	Various unvegetated areas are over-exposed.	Sufficient	
	Indirect Impact: The degradation of soil quality poses the risk of degrading the conditions for flora microorganism to thrive.	Legal requirements:				
		(1) Section 28 of NEMA relates to the duty of care and remediation of environmental damage.	Not compliant	With the clearance of an area of 3-4ha without any licencing or control measures, such as topsoil stripping, walkthrough, storm water controls, etc., BCR did not sufficiently implement duty of care to preserve soil and topsoil.	Sufficient	
24. Discard disposal (backfilling of mining area)	Direct Impact: Backfilling of soil layers will impact on the land capability by restoring the land capability to some extent because vegetation will be supported and therefore returned to the planned post mining land capability such as arable and or grazing. However, if not done incorrectly, the conditions for fauna and flora to	(2) The Conservation of Agriculture Resources Act (Act no. 107 of 1998) requires the protection of land against soil erosion and the prevention of water logging and salinization of soils by means of suitable soil conservation works to be constructed and maintained. These requirements should form part of the Soil Conservation and Stockpile management plan.	Not compliant	No soil conservation or stockpile management plan / procedure provided. Various erosion observed.	Sufficient	
		Specialist recommendations:				
		(1) Strip all usable soil, irrespective of soil depth.	Not compliant	Only a small amount of soil has been stripped and the majority of topsoil has not been stripped.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
	reinstate the area will be negatively affected.					
25. Waste generation, storage and disposal	Direct Impact: These storage of large amounts of waste over an extended time in a area not lined or bunded poses a risk of forming potentially hazardous leachates. Indirect Impact: The hazardous leachate potentially poses a risk in contaminating the soil causing the degradation of conditions for flora microorganisms to thrive.	(2) Implement live placement of soil where possible, improve organic status of soils, maintain fertility levels and curb topsoil loss.	Partially compliant	Available topsoils not sufficiently protected.	Sufficient	
		(3) Implement surface digital terrain mapping to ensure surface water control measures are implemented to ensure free draining system with minimal soil erosion.	Compliant	Digital terrain modelling is currently being undertaken as part of the update and review of the rehabilitation and closure plans.	Sufficient	
		(4) Loss of agricultural land due to establishment of infrastructure is a long-term loss and no mitigation measures exist. Mitigation is restricted to limitation of extent of impact to the immediate area of impact and minimisation of off-site impacts.	Not compliant	The footprint of the activities has exceeded the authorised footprint with the clearance of the landing strip area that totals 3-4ha.	Sufficient	
26. Chemical Toilets	Direct Impact: Continuous leaking, spills or lack of maintenance poses a risk to contaminating the surrounding soils and degrading the soil quality. This will affect the micro-ecosystems in a negative manner.	(5) Loss of agricultural land due to opencast mining is a temporary loss which can be mitigated by appropriate backfilling and re-placement of stockpiled topsoil. If done correctly, most of the original agricultural potential will be restored.	Not applicable	The current mining area is restricted to phase 1 which is on a hillside and koppie. This area had no agricultural potential except grazing. The grazing potential was medium-low. The current rehabilitation and closure plans are to return the site to a pre-mining end land use.	Sufficient	
		(6) An Environmental Coordinator must manage environmental impacts in coordination with construction and operation schedule.	Not compliant	No appointed Environmental Coordinator	Sufficient	
29. Storage of fuel and lubricants in temporary facilities	Direct Impact: Continuous exposure to hydrocarbon leaks poses a risk to the degradation of the surrounding soil resources.	(7) In the event that contractors are to be appointed these contractors to sign and undertake environmental compliance.	Partially compliant	The mining contractor is responsible for most of the environmental compliance observed on site.	Sufficient	
		(8) Keep disturbed areas and stockpiles to minimum to prevent soil loss.	Partially compliant	Most areas that have been cleared remained as is at the time of the audit except the large landing strip that was built and not included into the authorised footprints.	Sufficient	
		(9) Identify suitable areas to stockpile stripped soil.	Compliant	Although only some of the topsoil of the areas that were cleared has been collected and stockpile, the stockpiles were situated where planned.	Sufficient	
33. Rehabilitation of mining areas	Direct Impact: Poor management of topsoil and subsoil poses a risk to degradation of soil resources.	(10) Prevent surface runoff and seepage on site from contaminating stockpiled soils and stripped areas.	Partially compliant	Most surface runoff is not contaminated but does contain silt from erosion. The wash water from the workshop however enters surface areas and potentially soils.	Sufficient	
		(11) Minimise soil erosion through wind and water	Not compliant	Rampant erosion was observed on various stockpiles and around site.	Sufficient	
		(12) Remediate and rehabilitate disturbed areas in accordance with development plan	Partially compliant	The rehabilitation plan is being updated and reviewed and new milestones will be set. Some areas are available for rehabilitation currently and should proceed but hasn't.	Sufficient	
		Compliance with standards:				

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(1) Development of a soil conservation management plan.	Not compliant	No soil conservation plan is available.	Sufficient	
		(2) Development of a storm water management plan.	Compliant	A SWMP is available	Sufficient	
		(3) Development and implementation of vehicle/plant/equipment maintenance plan with specific reference to daily inspections of plant/vehicles/equipment for leaks or breakages.	Compliant	Pre-use checklists are done, and maintenance are routinely undertaken.	Sufficient	
Hydrocarbon contamination						
18.Topsoil and subsoil stripping & stockpiling for mining operation area	Direct Impact: Throughout the operational phase construction equipment are used. This poses a risk of hydrocarbon spills if equipment is not maintained. Depending on the size of the spill the level of contamination may vary from insignificant to significant and may affect the surrounding water quality (both surface and sub-surface) as well as the soil quality.	Implementation of EMS:				
		(1) Develop and implement a Hazardous substances management plan addressing handling, storage, and transport of hazardous substances.	Partially compliant	Hazchem storage area is available and largely compliant, hazchem control where largely compliant although there were some issues observed. This shows that some process is followed, and interviews indicated that employees knew what to do. No hazchem procedure or proof of training were provided.	Sufficient	
		(2) Develop and implement an emergency response procedure addressing the procedure in case of a chemical spill. This procedure should ensure the fastest possible reaction to spills or accidents as well as addressing remediation procedures.	Partially compliant	An emergency procedure is available but do not sufficiently addresses chemical spills.	Sufficient	
		(3) Development and implementation of an incident reporting procedure.	Partially compliant	Incidents are reported informally, but no incident registers, procedures or records were provided.	Sufficient	
19.Opencast mining excavations	Direct Impact: Throughout the operational phase construction equipment are used. This poses a risk of hydrocarbon spills if equipment is not maintained. Depending on the size of the spill the level of contamination may vary from insignificant to significant and may affect the surrounding water quality (both surface and sub-surface) as well as the soil quality.	(4) Ensuring corrective and preventative actions are taken to address nonconformities.	Partially compliant	Overall housekeeping was good, and it was observed that absorbents were used to treat chemical spills in the hazchem store. The absorbents were not yet cleaned and a spillage from a hazardous waste bin was not yet attended to. This indicates that some corrective actions are taken but are not entirely sufficient.	Sufficient	
		(5) Communicating findings of concern to I&AP.	Compliant	Findings from this audit will be communicated to the I&AP's.	Sufficient	
		On-site mitigation measures:				
		(1) Fuel to be stored in above ground storage tanks or sealed containers.	Compliant	Fuel are stored in above ground storage tanks	Sufficient	
		(2) Hazardous substances to be stored within a bund area with a sump drainage.	Compliant	A hazchem store is available and used to store chemicals.	Sufficient	
20.Drilling & Blasting	Direct Impact: The use of drill Riggs poses a high risk of hydrocarbon spills. Depending on the size of the spill the level of contamination may vary from insignificant to significant and may affect the surrounding	(3) Bunded areas to be designed to contain at least 110% of the storing capacity.	Compliant	The fuel and hazchem store have a 110% capacity.	Sufficient	
		(4) All spills (minor and major) must be cleaned and remediated to the satisfaction of the appointed environmental representative or the Department within 24 hours.	Partially compliant	Some spillages were observed treated with absorbent, which is then collected and placed into the hazardous waste bin for removal. Some spillages observed were not attended to within 24 hours (immediately).	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
	water quality (both surface and sub-surface) as well as the soil quality.	(5) Any spillages on site to be excavated to the visible depth of impact and disposed of for removal to a registered hazardous waste disposal site. Alternative in-situ remediation techniques may be used.	Partially compliant	Any spillages are removed by collecting the contaminated soil to the depth of contamination (as is visually observed). Hazardous waste disposal could not be confirmed as there were no hazardous waste manifests. Only one oil spill was observed.	Sufficient	
		(6) On site spill kits or absorbent materials must be readily available. These kits must include materials to absorb, breakdown, and where possible encapsulate minor material spillages.	Compliant	Spill kits were observed on site.	Sufficient	
		(7) Where possible and practical all maintenance of vehicles and equipment shall take place in the workshop areas. Should emergency repairs be necessary, drip trays or tarpaulins must be utilised to ensure the collection of any hydrocarbons.	Compliant	During the audit, maintenance was taking place in the workshop. Some maintenance is taking place in the pit for less movable plant.	Sufficient	
21. RoM & product stockpiling	Direct Impact: Throughout the operational phase equipment and plant are used to transport and stockpile RoM and product. This poses a risk of hydrocarbon spills if equipment is not maintained. Depending on the size of the spill the level of contamination may vary from insignificant to significant and may affect the surrounding water quality (both surface and sub-surface) as well as the soil quality.	(8) All vehicles, plant, and equipment must be inspected on a daily basis. Records to be made available for these inspections.	Compliant	Pre-use inspections are done on equipment.	Sufficient	
		(9) Drip trays or any form of oil absorbent material must be placed underneath vehicles and equipment (where possible leaks may occur) when not in use.	Compliant	Drip trays are effectively used to capture used oil. Any spillages are treated with absorbent and removed to hazardous waste bins.	Sufficient	
		(10) All vehicles, plant, and equipment must be well maintained to minimise the risk of fuel and oil leakages.	Compliant	Regular maintenance is done. No leaking machines were observed during the audit.	Sufficient	
23. Screening Operations	Direct Impact: Hydrocarbon spills can occur where heavy machinery such as the screening plant and hauling vehicles are parked because they contain large volumes of lubricating oils, hydraulic oils, and diesel to run. This poses a risk of hydrocarbon spills if equipment is not maintained. Depending on the size of the spill the level of contamination may vary from insignificant to significant and may affect the surrounding water quality (both surface and sub-surface) as well as the soil quality.	(11) Leaking equipment shall be removed and repaired immediately from site to facility designated for repairs.	Compliant	Regular maintenance is done. No leaking machines were observed during the audit.	Sufficient	
		Legal requirements:				
		(1) Section 30 of the National Environmental Management Act (NEMA), Act 107 of 1998 describes measures to be taken to control emergency incidents. These requirements should be included in the development of the Emergency Response procedure.	Partially compliant	Not all s.30 requirements included into the emergency procedures, only some requirements in terms of fire and explosions.	Sufficient	
		(2) Section 20 of the National Water Act 36 of 1998 describes the procedure for the control of incidents involving Hazardous substances. These requirements should also be included in the Emergency response procedure.	Partially compliant	Not all s.20 requirements included into the emergency procedures, only some requirements in terms of fire and explosions.	Sufficient	
		(3) GN R. 1237 published under the Mine Health and Safety Act of 1996 describes the requirements for the storage of hazardous substances. These requirements should be incorporated into the Hazardous substances' management plan.	Partially compliant	Some of these measures are provided in the emergency procedure but not all.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
24. Discard disposal (backfilling of mining area)	Direct Impact: During backfilling activities equipment and plant are used. This poses a risk of hydrocarbon spills if equipment is not maintained. Depending on the size of the spill the level of contamination may vary from insignificant to significant and may affect the surrounding water quality (both surface and sub-surface) as well as the soil quality. Indirect Impact: The degradation of water quality and soil quality poses a risk of negatively affecting the conditions for micro and macro organisms to thrive.	(4) Section 21 of the Mine Health and safety Act of 1996 describes the requirements for the acquisition of Hazardous chemicals. These requirements should be considered as part of the mine acquisition process.	Not applicable	These considerations do not form part of the procurement process.	Sufficient	
		(5) Regulation 277, 273, and 279 of GN R. 225 of the National Road traffic Act of 1996 describes the requirements of transporting hazardous waste. These requirements should be incorporated in both the Hazardous substances management plan and the Waste Management plan.	Not compliant	No hazardous substances management plan or Waste management plan.	Sufficient	
		(6) Regulation 277 and 273 of GN R. 225 of the National Road traffic Act of 1996 describes the Loading and offloading of dangerous goods. These requirements should be addressed in the Hazardous substances' management plan.	Not compliant	No hazardous substances management plan or Waste management plan.	Sufficient	
		(7) All requirements described in the Hazardous substance Act of 1973 should be included in the Hazardous substances management plan.	Not compliant	No hazardous substances management plan or Waste management plan.	Sufficient	
27. River crossings	Direct Impact: Throughout the construction and operational phase construction equipment are used. This poses a risk of hydrocarbon spills if equipment is not maintained. Depending on the size of the spill the level of contamination may vary from insignificant to significant and may affect the surrounding water quality (both surface and sub-surface) as well as the soil quality.	(8) The storage of hazardous substances must be in compliance with regulation 4 of GN R. 704 of the National Environmental Management Act.	Compliant	Hazchem storage largely complies with the NEMA requirements.	Sufficient	
		Specialist recommendations:				
		Geohydrology –				
		(1) Development of an environmental monitoring programme in order to monitor the groundwater quality and groundwater level changes up- and downstream of the proposed open cast mine workings.	Compliant	A monitoring programme is available on the groundwater specialist study in Appendix M of the EIA.	Sufficient	
29. Storage of fuel and lubricants in temporary facilities	Direct Impact: The construction of improper storage facilities poses a risk of the surrounding environment to be exposed to continuous leaking of hydrocarbons leading possibly contaminating both surface and sub-surface water sources as well as the soils surrounding the facility.	(2) Collected monitoring data (quarterly) may be used for future model updates (e.g. every second year).	Not applicable	No data collected except baseline data	Sufficient	
		(3) A number of geosites (i.e. boreholes, springs and surface water drainages) and newly proposed boreholes were identified (refer to the Geohydrological report in Appendix M) to be included into a monthly/quarterly monitoring programme.	Partially compliant	A groundwater monitoring programme is available in the specialist reports. No monitoring however is being done and only the baseline qualities are available.	Sufficient	
		(4) The parameters to be analysed should comprise the following: Physical-chemical parameters (pH, EC, TDS); Major anions (F, Cl, NO ₃ , SO ₄ , HCO ₃ , NH ₄ , PO ₄); Major cations (K, Na, Mg, Ca, NH ₄); and Other elements/metals (Fe, Mn, Zn, Pb, Co, Cr, Cr (VI)).	Not applicable	Monitoring not done	Sufficient	
		Hydrology –				
30. Vehicular activity on haul roads; and operation	Direct Impact: The use of vehicles on haul roads throughout the operational phase poses a risk of	(1) A number of monitoring sample points have been identified in the Hydrological report (Appendix L). Additional sampling points have been recommended and should be included in the final water monitoring plan.	Not compliant	No monitoring programme implemented	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
of mining equipment	hydrocarbon spills if equipment are not maintained. Depending on the size of the spill the level of contamination may vary from insignificant to significant and may affect the surrounding water quality (both surface and sub-surface) as well as the soil quality.	(2) As part of the monitoring program going forward, samples should be taken monthly for at least the first year of operation. This can be revised to quarterly monitoring if no concerns are highlighted with the approval of DWAS.	Not compliant	No monitoring programme implemented	Sufficient	
		(3) The monitoring should include the standard analysis of major cations/anions as well as ICP scan for metals	Not applicable	No monitoring programme implemented	Sufficient	
		Compliance with standards:				
		1) Development of water management plan addressing monitoring and management requirements.	Not compliant	No water management plan available.	Sufficient	
		(2) Development of a storm water management plan addressing the separation of "dirty" and clean “areas"	Compliant	A detailed storm water management plan complete with detailed engineering designs are available.	Sufficient	
		(3) Development of emergency response plan with specific reference to spill prevention and remediation.	Partially compliant	An emergency procedure is available but do not sufficiently addresses chemical spills.	Sufficient	
		(4) Development and implementation of vehicle/plant/equipment maintenance plan with specific reference to daily inspections of plant/vehicles/equipment for leaks or breakages.	Compliant	Pre-use inspections are done on equipment and regular maintenance is undertaken.	Sufficient	
		(5) Development and implementation of a Hazardous substances management plan	Partially compliant	Hazardous substances controls are implemented and overall compliance in terms of hazchem controls were good. A hazardous substances management plan/procedure were not provided.	Sufficient	
Erosion						
18.Topsoil and subsoil stripping & stockpiling for mining operation area	Direct Impact: If not managed properly, fertile soil will be lost during site clearance, topsoil striping and stockpiling. Loss of fertile soil will cause the degradation of habitat for flora micro- and macro organisms	Implementation of EMS:				
		(1) Development and implementation of a storm water management plan.	Partially compliant	A SWMP is available but not implemented.	Sufficient	
		(2) Regular inspection of erosion prone areas for signs of erosion.	Not compliant	Erosion is not checked or attended to.	Sufficient	
		(3) A soil conservation and stockpiling plan to be developed and implemented.	Not compliant	No soil conservation or stockpile management plan / procedure provided.	Sufficient	
		(4) Monthly monitoring of water quality (as per recommendation of specialist study).	Not compliant	No monitoring undertaken	Sufficient	
		(5) Reporting and recording incidents related to erosion.	Not compliant	No incidents were reported related to degradation of soil resources while numerous incidents were observed at the time of the audit.	Sufficient	
19.Opencast mining excavations	Indirect Impact: Un-vegetated areas exposed to weathering for an extended period of time will lead to erosion. Erosion prone areas have a high risk of losing fertile soil caused by flash	(6) Ensuring corrective and preventative actions are taken to address nonconformities.	Not compliant	Numerous incidents of erosion and soil loss observed during the time of the audit with little to no corrective or preventative actions.	Sufficient	
		(7) Communicating findings of concern to I&AP.	Compliant	This audit will be taken through a PP process and findings will be communicated.	Sufficient	
		On-site mitigation measures:				

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
	floods. The loss of fertile soil will result in the loss of important micro ecosystems.	(1) Soil conservation measures to be implemented on stockpiles to prevent erosion. This could include the use of erosion control fabric or non-invasive grass seeding.	Not compliant	Little to no erosion measures have been observed implemented on topsoil stockpiles.	Sufficient	
		(2) All areas susceptible to erosion must be identified and protection measures be implemented.	Not compliant	Various areas with high levels of erosion observed. On these areas, no efforts were observed to correct or prevent erosion.	Sufficient	
21. RoM & product stockpiling	Indirect Impact: Un-vegetated areas exposed to weathering for an extended period of time will lead to erosion. Erosion prone areas have a high risk of losing fertile soil caused by flash floods. The loss of fertile soil will result in the loss of important micro ecosystems.	(3) Retain natural trees, shrubbery and grass species where possible.	Not compliant	There are a few areas on site that has trees that was left undamaged, but this is very limited, and most areas are open ground and unprotected (in terms of runoff).	Sufficient	
		(4) In areas within close proximity to wetlands, rivers and streams, sedimentation control measures to be implemented, specifically when excavations or disturbances takes place within riverbanks, or the riverbed.	Not compliant	Various crossings of drainage lines occurred at the mining area and the new landing strip, as well as some of the laydown areas, and little to no sedimentation control was and is undertaken.	Sufficient	
		(5) Formation of erosion channels ("dongas") to be prevented by applying soil erosion control and bank stabilisation procedures as specified by a qualified environmental specialist.	Not compliant	Erosion channels observed on sidewalls and open areas. No preventative measures implemented.	Sufficient	
		(6) Erosion formation beyond rills must be avoided.	Not applicable		Sufficient	
24. Discard disposal (backfilling of mining area)	Indirect Impact: Un-vegetated areas exposed to weathering for an extended period of time will lead to erosion. Erosion prone areas have a high risk of losing fertile soil caused by flash floods. The loss of fertile soil will result in the loss of important micro ecosystems.	(7) Erosion damages to be repaired as soon as possible and no later than the target set by the Management team.	Not compliant	Various areas with high levels of erosion observed. On these areas, no efforts were observed to correct or prevent erosion.	Sufficient	
		(8) Slopes steeper than 1(V):4(H) or slopes where soils are by nature dispersive or erodible must be stabilised.	Not compliant	Various slopes greater than 1:4 observed (mostly at angle of repose of 37°) without any stabilisation. Various erosion channels are visible on these slopes.	Sufficient	
		(9) Where berms are installed on severe slopes the outflow shall be suitably stone pitched to prevent erosion from starting on berms.	Not compliant	No dispersion measures implemented on outflows.	Sufficient	
		(10) Access routes should not traverse slopes with gradients in excess of 8%.	Compliant	Access routes are largely at low slopes except where it is unavoidable.	Sufficient	
27. River crossings	Indirect Impact: Improper installation of river crossing infrastructure poses the risk of contributing to the conditions causing erosion i.e. Un-vegetated and exposed river/watercourse banks. Indirect Impact: Erosion poses a risk of contributing to sedimentation and siltation of rivers/watercourses. Pollutants may affect the conditions for the aquatic ecology to thrive.	(11) Wherever possible, access routes should avoid crossing drainage lines and riparian zones.	Not applicable	Most access routes do not have alternative routes and are using routes that was there before mining started. Avoidance is thus not possible or feasible.	Sufficient	
		(12) Drainage lines should not be altered and should be level with the surrounding land once subsistence has occurred.	Not compliant	Drainage lines crossed do not have planned outflows or diversions. Most crossings have been left to naturally find the shortest route.	Sufficient	
		(13) Run-off from roads must be managed in a way to avoid erosion and prevent pollution.	Not compliant	Runoff from roads are mostly channelled but overall has limited no control, with deep erosion channels forming in the channels and at the outflows.	Sufficient	
		Legal requirements:				
		(1) Section 28 of NEMA relates to the duty of care and remediation of environmental damage.	Not compliant	Numerous evidences exist to suggest that BCR did not apply a duty of care approach to erosion	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
				control.		
		(2) The Conservation of Agriculture Resources Act (Act no. 107 of 1998) requires the protection of land against soil erosion and the prevention of water logging and salinization of soils by means of suitable soil conservation works to be constructed and maintained. These requirements should form part of the Soil Conservation and Stockpile management plan.	Not compliant	Numerous evidences exist to suggest that BCR did not apply a duty of care approach to erosion control.	Sufficient	
30. Vehicular activity on haul roads; and operation of mining equipment	Indirect Impact: Improper management of storm water may lead to erosion along the access routes. This may lead to the loss of fertile soil and in its turn affect the micro-ecosystems of the surrounding environment.	Specialist recommendations:				
		Hydrology –				
		(1) A conceptual storm water management plan (Appendix L) has been developed based on the requirements of GN R. 704 of the National Water Act of 1998.	Not applicable	Noted	Sufficient	
		(2) Implementation of the guidance provided by the South African National Roads Agency Limited (SANRAL) drainage manual. This document provides guidance on maximum permissible velocities for grass covers to avoid erosion and should be consulted during the detailed design phase.	Not compliant	This guidance document has been included into the storm water designs but not in the implementation of the roads' construction.	Sufficient	
32. Water Management	Indirect Impact: Poor management of storm water throughout the construction, operational, and decommissioning phase poses a high risk for erosion. This may lead to the loss of fertile soil and in its turn affect the micro-ecosystems of the surrounding environment.	Soil –				
		(1) Disturbance areas to be stripped progressively as required reducing erosion and sediment generation, to reduce the extent of topsoil and utilise stripped topsoil as soon as possible for rehabilitation.	Not compliant	Very limited stripping has been done.	Sufficient	
		(2) The surface of the completed stockpile must be left in a rough condition to promote water infiltration and minimise erosion prior to vegetation establishment;	Compliant	Most surfaces are rough, and infiltration does happen to minimize erosion.	Sufficient	
		(3) Topsoil stockpiles to have an embankment grade of approximately 1m vertical:4m horizontal (to limit the potential for erosion of the outer pile face);	Not compliant	The topsoil stockpiles observed are largely in the form of berms and erosion are visible on the berm's slopes. The slopes are at angle of repose, not 1:4.	Sufficient	
33. Rehabilitation of mining areas	Indirect Impact: Exposed un-vegetated rehabilitated areas pose a high risk of erosion. This may lead to the loss of fertile soil and in its turn affect the micro-ecosystems of the surrounding environment.	(4) Implement surface digital terrain mapping to ensure surface water control measures are implemented to ensure free draining system with minimal soil erosion.	Compliant	Digital terrain modelling is currently being undertaken as part of the update and review of the rehabilitation and closure plans.	Sufficient	
		(5) Minimise soil erosion through wind and water	Not compliant	Rampant erosion was observed on various stockpiles and around site.	Sufficient	
		Biodiversity – Also see Vegetation and Habitat loss				
		(1) Limit the complete removal of vegetation.	Not compliant	Complete vegetation removal has been done at the landings strip as well, which increases the areas completely stripped of vegetation.	Sufficient	
		(2) Limit work outside the proposed footprint.	Not compliant		Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(3) Reinforce portions of existing access routes that are prone to erosion or seasonal inundation, create structures or low banks to drain the access road rapidly during rainfall events, yet preventing erosion of the track and surrounding areas. Ensure that water flows are never concentrated in any way as soils are highly erodible.	Not compliant	Little to no erosion measures have been observed implemented on the access routes.	Sufficient	
		(4) Ensure that runoff from compacted or sealed surfaces is slowed down and dispersed sufficiently to prevent accelerated erosion from being initiated (erosion management plan required).	Not compliant	Little to no runoff control has been observed on open erosion prone areas.	Sufficient	
		Compliance to standards:				
		(1) Development and implementation of a storm water management plan.	Partially compliant	A SWMP is available but not implemented.	Sufficient	
		(2) Development of a soil conservation management plan.	Not compliant	No soil conservation plan is available.	Sufficient	
		(3) Development of Mine Rehabilitation, decommissioning and mine closure liability Plan in compliance with GN R. 1147 of NEMA	Compliant	A rehabilitation, decommissioning and mine closure plan is available and currently being reviewed.	Sufficient	
Topography and visual						
Construction						
Topography and visual						
2. Site clearing and topsoil stripping for lay down area and all related mining infrastructure	Direct Impact: Construction of mining facilities will alter the topography and visual environment.	Implementation of EMS:				
		(1) Record keeping of the topography and environmental state before the commencement of any activities.	Compliant	This has been done as part of the baseline assessments.	Sufficient	
		(2) Development of Mine Rehabilitation, decommissioning and mine closure liability Plan in compliance with GN R. 1147 of NEMA.	Compliant	This plan has been done in 2016 and is currently being reviewed and updated.	Sufficient	
		On-site mitigation measures:				
5. Mining offices (construction and operation) i.e. operation of training centres, offices and kitchen facilities		(1) Limit site clearance to approved areas.	Not compliant	A 3-4 ha landing strip was built that wasn't part of the approved activities or footprint.	Sufficient	
		(2) Re-vegetate, with indigenous and non-invasive species, all cleared or rehabilitated areas immediately.	Not compliant	Areas that can be rehabilitated has not been rehabilitated yet.	Sufficient	
		(3) During rehabilitation ensure that the topography is reinstated as close as possible to the state before commencement of any activities.	Not applicable	No rehab yet.	Sufficient	
		Legal requirements:				

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(1) GN R. 1147 of NEMA requires the following documents as part of the authorisation process:				
		(1.1) A annual rehabilitation plan;	Compliant	An annual rehab plan is available and is currently being reviewed.	Sufficient	
		(1.2) A final rehabilitation, decommissioning and mine closure plan; and	Compliant	A final rehabilitation, decommissioning and mine closure plan has been developed and is currently being reviewed	Sufficient	
		(1.3) An environmental risk assessment report.	Compliant	An environmental risk report has been done in 2016 and is currently being reviewed	Sufficient	
		Compliance with standards:				
		(1) Mine plan in accordance with the MPRDA Regulation 56 section (1) to (8).	Compliant	A Mine plan is available as per the MPRDA r.56(1)(8)	Sufficient	
		(2) Adherence to the finalised approved lay out plan.	Partially compliant	There was a landing strip built (3-4ha) that was not part of the approved layout.	Sufficient	
		(3) Development of Mine Rehabilitation, decommissioning and mine closure liability Plan in compliance with GN R. 1147 of NEMA.	Compliant	A rehabilitation and closure plan were developed in 2016 according to GN R. 1147 of NEMA.	Sufficient	
Light pollution						
12. Lighting	Direct Impact: The use of bright and excessive lighting during the proposed night shift period poses a risk of disrupting nocturnal fauna species.	Implementation of EMS:				
		(1) Monitor the effects of possible light pollution.	Not applicable	It is not currently known what monitoring is available to ascertain the effects of light pollution, but visual monitoring is done.	Sufficient	
		On-site mitigation measures:				
		(1) Promote the usage of light sources with a high luminous effectiveness.	Compliant	Light sources with a high luminous effectiveness are used.	Sufficient	
		(2) Promoting the usage of full cut-off lighting fixtures.	Compliant	Where possible, cut-off lighting is used.	Sufficient	
		(3) On-site lights to be spaced appropriately for maximum efficiency.	Compliant	Lights spaced for maximum efficiency	Sufficient	
		(4) Ensure that the number of luminaries being used as well as the wattage of each laminar match the needs of the particular application (based on local lighting design standards).	Compliant	All lighting matches its intended application.	Sufficient	
		(5) Ensure that during night times only essential lights are switched on.	Compliant	Only essential security lighting is used at night.	Sufficient	
		Specialist recommendations:				
		Bat survey -				
		(1) Erect security lights/spotlights only near infrastructure/where absolutely necessary.	Compliant	Spot lighting is near the offices and infrastructure areas that needs nigh time supervision for security purposes	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(2) Mitigate night-time noise to as low as possible, particularly during peak foraging times.	Compliant	Nightshifts are discouraged as far as possible with very limited night noise.	Sufficient	
		(3) Restrict blasting activities to daytime hours.	Compliant	Blasting only takes place during daytime.	Sufficient	
		Compliance with standards:				
		(1) Biennial investigation of the impact of Light pollution to nocturnal species.	Not compliant	No biennial investigation of light pollution impact.	Sufficient	
Operation						
Topography and visual						
18.Topsoil and subsoil stripping & stockpiling for mining operation area	Direct Impact: Topsoil and subsoil stripping will alter the topography and visual environment throughout the mining operation.	Implementation of EMS:				
		(1) Record keeping of the topography and environmental state before the commencement of any activities.	Compliant	This has been done as part of the baseline assessments.	Sufficient	
		(2) Development of Mine Rehabilitation, decommissioning and mine closure liability Plan in compliance with GN R. 1147 of NEMA.	Compliant	This plan has been done in 2016 and is currently being reviewed and updated.	Sufficient	
19.Opencast mining excavations	Direct Impact: Open cast mining will alter the topography and visual environment throughout the mining operation in a significant way.	On-site mitigation measures:				
		(1) Limit site clearance to approved areas.	Not compliant	A 3-4 ha landing strip was built that wasn't part of the approved activities or footprint.	Sufficient	
		(2) Re-vegetate, with indigenous and non-invasive species, all cleared or rehabilitated areas immediately.	Not compliant	Areas that can be rehabilitated has not been rehabilitated yet.	Sufficient	
		(3) During rehabilitation ensure that the topography is reinstated as close as possible to the state before commencement of any activities.	Not applicable	No rehab yet.	Sufficient	
21. RoM & product stockpiling	Direct Impact: Stockpiles of residue material over an extended time potentially alters the topography and visual environment.	Legal requirements:				
		(1) GN R. 1147 of NEMA requires the following documents as part of the authorisation process:				
22. Residue stockpiles		(1.1) A annual rehabilitation plan;	Compliant	An annual rehab plan is available and is currently being reviewed.	Sufficient	
		(1.2) A final rehabilitation, decommissioning and mine closure plan; and	Compliant	A final rehabilitation, decommissioning and mine closure plan has been deveoped and is currently being reviewed	Sufficient	
		(1.3) An environmental risk assessment report.	Compliant	An environmental risk report has been done in 2016 and is currently being reviewed	Sufficient	
		Compliance to standards:				
		(1) Mine plan in accordance with the MPRDA Regulation 56 section (1) to (8).	Compliant	A Mine plan is available as per the MPRDA r.56(1)(8)	Sufficient	
		(2) Adherence to the finalised approved lay out plan.	Partially compliant	There was a landing strip built (3-4ha) that was not part of the approved layout.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(3) Development of Mine Rehabilitation, decommissioning and mine closure liability Plan in compliance with GN R. 1147 of NEMA.	Compliant	A rehabilitation and closure plan was developed in 2016 according to GN R. 1147 of NEMA.	Sufficient	
Construction						
Destruction of graves						
2. Site clearing and topsoil stripping for lay down area and all related mining infrastructure	Direct Impact: Proposed activities in close proximity to identified graves poses the risk of destructing graves of great cultural and heritage importance. Indirect Impact: Loss of heritage and history for the future generation of the affected community.	Implementation of EMS:				
		(1) Develop and implement an awareness campaign on the protection of social heritage impacts.	Not compliant	No proof of awareness on heritage resource protection provided.	Sufficient	
		On-site mitigation measures:				
		(1) If human remains are uncovered during the course of authorised activities or archaeological work, the excavations affecting the burial must be stopped.	Not applicable	No burial remains encountered to date	Sufficient	
		(2) SAHRA should then be consulted and depending on the situation, the remains are either covered and left in situ, exposed (but not removed) and studies in situ, or fully excavated and studied with the consent and participation of the interested parties.	Not applicable	No burial remains encountered to date	Sufficient	
		(3) It is, therefore, advisable that if it is foreseen that any archaeological research will uncover human remains an agreement with the interested and affected parties and a permit for burials be obtained beforehand.	Not applicable	No burial remains encountered to date	Sufficient	
		(4) A suitable accredited archaeologist must be appointed on a watching brief to monitor the excavation of any grave sites.	Not applicable	No burial remains encountered to date	Sufficient	
		(5) At the onset of construction or mining operations, all graves that might be affected should be clearly demarcated and if possible, fenced off to protect them from any accidental damage, whether they are earmarked for relocation, or not.	Compliant	The graves that might have been encountered was fenced off.	Sufficient	
		(6) Should the decision be taken to propose the relocation of the affected graves, a suitably accredited and experienced service provider must be appointed to undertake relocation.	Not applicable	No relocation needed.	Sufficient	
		(7) Relocation of grave relocation is dependent on permission for the action by the close relatives and interested and affected parties from the community, and the requirement is that the developer must assist this community to fulfil their cultural and religious requirements during the process.	Not applicable	No relocation needed.	Sufficient	
		Legal requirements:				
		(1) Obtain a permit or authorisation to disturb, deface, destroy, or remove protected features and sites in terms of Section 27 (18) of the National Heritage Resources Act (NHRA), No. 25 of 1999 from the South African Heritage Resources Agency (SAHRA).	Not applicable	No permit needed.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		Specialist recommendations:				
		(1) Identified heritage resource sites must be avoided as far as possible (see Table 2 in the Heritage Impact Assessment (HIA) report attached as Appendix O).	Compliant	The sites identified in the HIA has been avoided. Where required, some areas have been fenced off to prevent damage.	Sufficient	
		(2) Should archaeological sites or graves be exposed during construction work, it must immediately be reported to a heritage practitioner so that an investigation and evaluation of the finds can be made.	Not applicable	No burial remains encountered to date	Sufficient	
		Homestead sites –				
		(3) A total of five old homestead sites were identified in the proposed mining area and it is anticipated that it would be impacted on by the mining activities.	Not applicable	The homesteads will be impacted by the Phase 2 mining, which has been scrapped and will not proceed. No impact is anticipated from the mining on the five homesteads.	Sufficient	
		(4) It is recommended that the sites are retained, and that it should be fenced off with danger tape for the duration of the mining, leaving a buffer zone of at least ten metres from the outer edge of the stone walling/physical features.	Not applicable	The homesteads will be impacted by the Phase 2 mining, which has been scrapped and will not proceed. No impact is anticipated from the mining on the five homesteads.	Sufficient	
		(5) If the sites cannot be retained, it should be documented (mapped and excavated) by an archaeologist after obtaining a permit from SAHRA.	Not applicable	The homesteads will be impacted by the Phase 2 mining, which has been scrapped and will not proceed. No impact is anticipated from the mining on the five homesteads.	Sufficient	
		(6) If mining takes place in these areas, the community should be consulted to determine if there are any more graves in the region, especially those of young children who, in many cases, are buried inside the old homestead.	Not applicable	Noted. For when mining on phase 2 are to proceed.	Sufficient	
		Informal burial sites –				
		(7) A total of nine informal burial sites were identified. All are located inside of or in close proximity to the mining area and it is anticipated that it would be impacted on by the mining activities.	Compliant	The graves encountered have been left unaltered. One of the grave sites are near the mining roads and have been fenced off to prevent any damage.	Sufficient	
		(8) If the burial places are retained, it should be fenced off with danger tape for the duration of the mining, leaving a buffer zone of at least ten metres from the outer edge of the graves.	Compliant	The grave site that is near mining and hauling activities have been fenced off.	Sufficient	
		(9) If the graves cannot be retained, it should be relocated, but only on condition of following the correct procedures (see Appendix 3 of the HIA attached as Appendix O).	Not applicable	No graves were required to be relocated.	Sufficient	
		Compliance with standards:				

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(1) Ensure compliance with the National Heritage Resources Act (NHRA), No. 25 of 1999.	Compliant	The graves and sites that are to be impacted have been fenced off and demarcated to prevent any damage. Other sites have been noted and will be protected when required.	Sufficient	
		(2) Ensure compliance with the Human Tissue Act, 1983 (Act no. 65 of 1983.	Not applicable	Not yet required as no encounters have been noted	Sufficient	
Heritage sites						
2. Site clearing and topsoil stripping for lay down area and all related mining infrastructure	Direct Impact: Proposed mining activities in close proximity to cultural significant heritage sites poses the risk of degrading or loss of these sites. Indirect Impact: Loss of heritage and history for the future generation of the affected community.	Implementation of EMS:				
		(1) Develop and implement an awareness campaign on the protection of social heritage impacts.	Not compliant	No proof of awareness on heritage resource protection provided.	Sufficient	
		On-site mitigation measures:				
		(1) If human remains are uncovered during the course of authorised activities or archaeological work, the excavations affecting the burial must be stopped.	Not applicable	No burial remains encountered to date	Sufficient	
		(2) SAHRA should then be consulted and depending on the situation, the remains are either covered and left in situ, exposed (but not removed) and studies in situ, or fully excavated and studied with the consent and participation of the interested parties.	Not applicable	No burial remains encountered to date	Sufficient	
		(3) It is, therefore, advisable that if it is foreseen that any archaeological research will uncover human remains an agreement with the interested and affected parties and a permit for burials be obtained beforehand.	Not applicable	No burial remains encountered to date	Sufficient	
		(4) A suitable accredited archaeologist must be appointed on a watching brief to monitor the excavation of any grave sites.	Not applicable	No burial remains encountered to date	Sufficient	
		(5) At the onset of construction or mining operations, all graves that might be affected should be clearly demarcated and if possible, fenced off to protect them from any accidental damage, whether they are earmarked for relocation, or not.	Compliant	The graves that might have been encountered was fenced off.	Sufficient	
		(6) Should the decision be taken to propose the relocation of the affected graves, a suitably accredited and experienced service provider must be appointed to undertake relocation.	Not applicable	No relocation needed.	Sufficient	
		(7) Relocation of grave relocation is dependent on permission for the action by the close relatives and interested and affected parties from the community, and the requirement is that the developer must assist this community to fulfil their cultural and religious requirements during the process.	Not applicable	No relocation needed.	Sufficient	
		Legal requirements:				
		(1) Obtain a permit or authorisation to disturb, deface, destroy, or remove protected features and sites in terms of Section 27 (18) of the National Heritage Resources Act (NHRA), No. 25 of 1999 from the South African Heritage Resources Agency (SAHRA).	Not applicable	No permit required.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		Specialist recommendations:				
	(1) Identified heritage resource sites must be avoided as far as possible (see Table 2 in the Heritage Impact Assessment (HIA) report attached as Appendix O).		Compliant	No heritage sites have been damaged	Sufficient	
	(2) Should archaeological sites or graves be exposed during construction work, it must immediately be reported to a heritage practitioner so that an investigation and evaluation of the finds can be made.		Not applicable	No graves encountered	Sufficient	
	Homestead sites –					
	(3) A total of five old homestead sites were identified in the proposed mining area and it is anticipated that it would be impacted on by the mining activities.		Not applicable	The homesteads will be impacted by the Phase 2 mining, which has been scrapped and will not proceed. No impact is anticipated from the mining on the five homesteads.	Sufficient	
	(4) It is recommended that the sites are retained, and that it should be fenced off with danger tape for the duration of the mining, leaving a buffer zone of at least ten metres from the outer edge of the stone walling/physical features.		Not applicable	The homesteads will be impacted by the Phase 2 mining, which has been scrapped and will not proceed. No impact is anticipated from the mining on the five homesteads.	Sufficient	
	(5) If the sites cannot be retained, it should be documented (mapped and excavated) by an archaeologist after obtaining a permit from SAHRA.		Not applicable	The homesteads will be impacted by the Phase 2 mining, which has been scrapped and will not proceed. No impact is anticipated from the mining on the five homesteads.	Sufficient	
	(6) If mining takes place in these areas, the community should be consulted to determine if there are any more graves in the region, especially those of young children who, in many cases, are buried inside the old homestead.		Not applicable	Noted. For when mining on phase 2 are to proceed.	Sufficient	
	Informal burial sites –					
	(7) A total of nine informal burial sites were identified. All are located inside of or in close proximity to the mining area and it is anticipated that it would be impacted on by the mining activities.		Compliant	The graves encountered have been left unaltered. One of the grave sites are near the mining roads and have been fenced off to prevent any damage.	Sufficient	
	(8) If the burial places are retained, it should be fenced off with danger tape for the duration of the mining, leaving a buffer zone of at least ten metres from the outer edge of the graves.		Compliant	The grave site that is near mining and hauling activities have been fenced off.	Sufficient	
	(9) If the graves cannot be retained, it should be relocated, but only on condition of following the correct procedures (see Appendix 3 of the HIA attached as Appendix O).		Not applicable	No graves were required to be relocated.	Sufficient	
	Compliance with standards:					
	(1) Ensure compliance with the National Heritage Resources Act (NHRA), No. 25 of 1999.		Compliant	The graves and sites that are to be impacted have been fenced off and demarcated to prevent any damage. Other sites have been noted and will be protected when required.	Sufficient	
	(2) Ensure compliance with the Human Tissue Act, 1983 (Act no. 65 of 1983).		Not applicable	Not yet required as no encounters have been noted	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
Operation						
Destruction of graves						
18.Topsoil and subsoil stripping & stockpiling for mining operation area	Direct Impact: Proposed activities in close proximity to identified graves poses the risk of destructing graves of great cultural and heritage importance. Indirect Impact: Loss of heritage and history for the future generation of the affected community.	Implementation of EMS:				
		(1) Develop and implement an awareness campaign on the protection of social heritage impacts.	Not compliant	No proof of awareness on heritage resource protection provided.	Sufficient	
		On-site mitigation measures:				
		(1) If human remains are uncovered during the course of authorised activities or archaeological work, the excavations affecting the burial must be stopped.	Not applicable	No burial remains encountered to date	Sufficient	
		(2) SAHRA should then be consulted and depending on the situation, the remains are either covered and left in situ, exposed (but not removed) and studies in situ, or fully excavated and studied with the consent and participation of the interested parties.	Not applicable	No burial remains encountered to date	Sufficient	
		(3) It is, therefore, advisable that if it is foreseen that any archaeological research will uncover human remains an agreement with the interested and affected parties and a permit for burials be obtained beforehand.	Not applicable	No burial remains encountered to date	Sufficient	
		(4) A suitable accredited archaeologist must be appointed on a watching brief to monitor the excavation of any grave sites.	Not applicable	No burial remains encountered to date	Sufficient	
		(5) At the onset of construction or mining operations, all graves that might be affected should be clearly demarcated and if possible, fenced off to protect them from any accidental damage, whether they are earmarked for relocation, or not.	Compliant	The graves that might have been encountered was fenced off.	Sufficient	
		(6) Should the decision be taken to propose the relocation of the affected graves, a suitably accredited and experienced service provider must be appointed to undertake relocation.	Not applicable	No relocation needed.	Sufficient	
		(7) Relocation of grave relocation is dependent on permission for the action by the close relatives and interested and affected parties from the community, and the requirement is that the developer must assist this community to fulfil their cultural and religious requirements during the process.	Not applicable	No relocation needed.	Sufficient	
		Legal requirements:				
		(1) Obtain a permit or authorisation to disturb, deface, destroy, or remove protected features and sites in terms of Section 27 (18) of the National Heritage Resources Act (NHRA), No. 25 of 1999 from the South African Heritage Resources Agency (SAHRA).	Not applicable	No permit needed.	Sufficient	
		Specialist recommendations:				
		(1) Identified heritage resource sites must be avoided as far as possible (see Table 2 in the Heritage Impact Assessment (HIA) report attached as Appendix O).	Compliant	The sites identified in the HIA has been avoided. Where required, some areas have been fenced off to prevent damage.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(2) Should archaeological sites or graves be exposed during construction work, it must immediately be reported to a heritage practitioner so that an investigation and evaluation of the finds can be made.	Not applicable	No burial remains encountered to date	Sufficient	
		Homestead sites –				
		(3) A total of five old homestead sites were identified in the proposed mining area and it is anticipated that it would be impacted on by the mining activities.	Not applicable	The homesteads will be impacted by the Phase 2 mining, which has been scrapped and will not proceed. No impact is anticipated from the mining on the five homesteads.	Sufficient	
		(4) It is recommended that the sites are retained, and that it should be fenced off with danger tape for the duration of the mining, leaving a buffer zone of at least ten metres from the outer edge of the stone walling/physical features.	Not applicable	The homesteads will be impacted by the Phase 2 mining, which has been scrapped and will not proceed. No impact is anticipated from the mining on the five homesteads.	Sufficient	
		(5) If the sites cannot be retained, it should be documented (mapped and excavated) by an archaeologist after obtaining a permit from SAHRA.	Not applicable	The homesteads will be impacted by the Phase 2 mining, which has been scrapped and will not proceed. No impact is anticipated from the mining on the five homesteads.	Sufficient	
		(6) If mining takes place in these areas, the community should be consulted to determine if there are any more graves in the region, especially those of young children who, in many cases, are buried inside the old homestead.	Not applicable	Noted. For when mining on phase 2 are to proceed.	Sufficient	
		Informal burial sites –				
		(7) A total of nine informal burial sites were identified. All are located inside of or in close proximity to the mining area and it is anticipated that it would be impacted on by the mining activities.	Compliant	The graves encountered have been left unaltered. One of the grave sites are near the mining roads and have been fenced off to prevent any damage.	Sufficient	
		(8) If the burial places are retained, it should be fenced off with danger tape for the duration of the mining, leaving a buffer zone of at least ten metres from the outer edge of the graves.	Compliant	The grave site that is near mining and hauling activities have been fenced off.	Sufficient	
		(9) If the graves cannot be retained, it should be relocated, but only on condition of following the correct procedures (see Appendix 3 of the HIA attached as Appendix O).	Not applicable	No graves were required to be relocated.	Sufficient	
		Compliance with standards:				
		(1) Ensure compliance with the National Heritage Resources Act (NHRA), No. 25 of 1999.	Compliant	The graves and sites that are to be impacted have been fenced off and demarcated to prevent any damage. Other sites have been noted and will be protected when required.	Sufficient	
		(2) Ensure compliance with the Human Tissue Act, 1983 (Act no. 65 of 1983)	Not applicable	Not yet required as no encounters have been noted	Sufficient	
Heritage sites						
18.Topsoil and subsoil stripping & stockpiling	Direct Impact: Proposed mining activities in close proximity to cultural significant heritage sites pose the risk of degrading or loss	Implementation of EMS:				
		(1) Develop and implement an awareness campaign on the protection of social heritage impacts.	Not compliant	No proof of awareness on heritage resource protection provided.	Sufficient	
		On-site mitigation measures:				

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
for mining operation area	of these sites. Indirect Impact: Loss of heritage and history for the future generation of the affected community	(1) The position of known sites, as identified by the heritage impact assessment, must be clearly identified and marked and considered in the final site lay out.	Compliant	The grave site that is near the active mining area and haul roads have been fenced off and demarcated. All other sites are not near the activity areas but is plotted on the HIA layout map.	Sufficient	
		(2) Such areas shall be market as no-go areas.	Compliant	The sites near the mining area has been fenced off as no-go areas.	Sufficient	
		(3) Artefacts may not be removed under any circumstances.	Partially compliant	One artefact that was found on-site has been stored at the site offices.	Sufficient	
		(4) Do not disturb, deface, destroy or remove protected features and sites, whether fenced or not for the duration of the authorised activity, unless on the approval of the competent authority.	Compliant	No features or sites have been damaged.	Sufficient	
		(5) Permits shall be obtained from South African Heritage Resource Agency (SAHRA) should any authorised activities affect any world heritage sites or if any areas are to be destroyed or altered.	Not applicable	No permits required.	Sufficient	
		(6) Works must be stopped immediately should any elements of cultural or heritage significance be found.	Partially compliant	Works were stopped when pottery were found near a drilling site. No items were however found on the drilling site or in footprint of the drilling site.	Sufficient	
		(7) Do not resume works in the area in question without the required permits or authorisation from the competent authority.	Not applicable	No items found within drilling or in footprint of drilling sites.	Sufficient	
		(8) A qualified and registered archaeologist must be appointed and consulted at such finding to appropriately excavate any artefacts in agreement with the Limpopo Heritage Resource Agency (LPHRA) and the SAHRA.	Not compliant	No registered professional were contacted when pottery items were found.	Sufficient	
		Legal requirements:				
		(1) Obtain a permit or authorisation to disturb, deface, destroy, or remove protected features and sites from the South African Heritage Resource Agency (SAHRA) and Limpopo Heritage Resource Agency (LPHRA).	Not applicable	No permit needed.	Sufficient	
		Specialist recommendations:				
		(1) Identified heritage resource sites must be avoided as far as possible (see Table 2 in the Heritage Impact Assessment (HIA) report attached as Appendix O).	Compliant	The sites identified in the HIA has been avoided. Where required, some areas have been fenced off to prevent damage.	Sufficient	
		(2) Should archaeological sites or graves be exposed during construction work, it must immediately be reported to a heritage practitioner so that an investigation and evaluation of the finds can be made.	Not applicable	No burial remains encountered to date	Sufficient	
		Homestead sites –				
		(3) A total of five old homestead sites were identified in the proposed mining area and it is anticipated that it would be	Not applicable	The homesteads will be impacted by the Phase 2 mining, which has been scrapped and will not	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		impacted on by the mining activities.		proceed. No impact is anticipated from the mining on the five homesteads.		
		(4) It is recommended that the sites are retained, and that it should be fenced off with danger tape for the duration of the mining, leaving a buffer zone of at least ten metres from the outer edge of the stone walling/physical features.	Not applicable		Sufficient	
		(5) If the sites cannot be retained, it should be documented (mapped and excavated) by an archaeologists after obtaining a permit from SAHRA.	Not applicable		Sufficient	
		(6) If mining takes place in these areas, the community should be consulted to determine if there are any more graves in the region, especially those of young children who, in many cases, are buried inside the old homestead.	Not applicable	Noted. For when mining on phase 2 are to proceed.	Sufficient	
		Industrial/Infrastructural heritage –				
		(7) A single site defined as of industrial/infrastructural heritage was identified.	Not applicable	This site has not been encountered during the construction or operational phases to date.	Sufficient	
		(8) It is recommended that the irrigation system should be documented (photographed and mapped) in before mining activities takes place	Not applicable	This site has not been encountered during the construction or operational phases to date.	Sufficient	
	Compliance with standards:					
		(1) Ensure compliance with the National Heritage Resources Act (NHRA), No. 25 of 1999.	Partially compliant	The graves and sites that are to be impacted have been fenced off and demarcated to prevent any damage. Other sites have been noted and will be protected when required. A pottery item was found and a SAHRA or LIHRA official was not contacted.	Sufficient	
		(2) Ensure compliance with the Human Tissue Act, 1983 (Act no. 65 of 1983.	Not applicable	Not yet required as no encounters have been noted	Sufficient	
Socio-economic						
Construction						
14. Employment of workers and procurement of construction materials	Loss of labour					
	Direct Impact: Increased demand of labour force poses a risk of the local farmers losing farm labour due to competing financial income.	Implementation of EMS:				
		(1) Develop and implement a social labour plan.	Compliant	A SLP is available, updated and implemented.	Sufficient	
		On-site mitigation measures:				
		(1) During community engagement/information dissemination, emphasis must be placed on the fact that permanent employment is directly related to the feasibility of the mine operations.	Compliant	Economic opportunities, especially employment, are regularly discussed and emphasis is placed on the mines economic viability.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(2) Strict adherence to Labour legislation (in terms of the employment of minors etc.) must at all times be made.	Compliant	Labour legislation is adhered to. The DMR also regularly audits the site in terms of its employment practices.	Sufficient	
		Legal requirements:				
		(1) Adherence with the South African Employment act of 2002.	Compliant	Labour legislation is adhered to. The DMR also regularly audits the site in terms of its employment practices.	Sufficient	
		Compliance with standard:				
		(1) Develop and implement a Social Labour plan as defined by the MRPSA.	Compliant	A SLP is available, updated and implemented.	Sufficient	
		(2) Develop and implement a grievance lodging procedure.	Not applicable	Such a grievance procedure has not been verified during the audit	Sufficient	
	Pressure on resources					
	Direct Impact: Increased demand for labour force poses a risk of a population influx in the local district municipality. The increasing population will put pressure on the local municipality to provide services such as sewage, drinking water, waste management, electricity etc.	Implementation of EMS:				
		(1) Develop and implement a social labour plan.	Compliant	A SLP is available, updated and implemented.	Sufficient	
		On-site mitigation measures:				
		(1) The employment of local labour to be promoted.	Compliant	Local employment is used where possible.	Sufficient	
		(2) Ensure housing of employees on existing infrastructures.	Not applicable	Employees has existing housing and it is not viable for the mine to provide housing.	Sufficient	
		Specialist recommendations:				
		(1) Reduce overcrowding by collaborating with relevant departments on housing requirements i.e. total square meters v.s number of rooms, indoor cooking practices, etc.	Compliant	No overcrowding noted in the communities. Employment on the mine is very limited.	Sufficient	
		(2) Improve vaccination coverage by collaborating with the relevant departments on awareness creation around vaccination to communicable diseases for vulnerable sub-populations such as children and old people.	Not compliant	Clinic benefits are currently only provided to employees.	Sufficient	
		(3) Reduce the prevalence of communicable diseases by collaborating with relevant departments, schools for awareness creation and improved understanding of factors exacerbating communicable diseases, including coping strategies that result in behaviour change.	Not compliant	Clinic benefits are currently only provided to employees.	Sufficient	
		(4) Improve capacity of health services by:				
		(4.1) collaborating with clinics to identify opportunities for assisting with health services, specifically in terms of resources and maintenance issues;	Not compliant	Clinic benefits are currently only provided to employees.	Sufficient	
		(4.2) On-site health facility operational at the onset of construction;	Compliant	An on-site facility is available.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(4.3) Assisting with the development of health-effect prevention plan to increase community resilience by improving coping capability reducing exposure and reducing susceptibility of vulnerable sub-populations.	Not compliant	No such plan was provided.	Sufficient	
		Compliance with standard:				
		(1) Develop and implement a Social Labour plan as defined by the MRPDA.	Compliant	A SLP is available, updated and implemented.	Sufficient	
		(2) Develop and implement a grievance lodging procedure.	Not applicable	Such a grievance procedure has not been verified during the audit	Sufficient	
	Social pathogens					
	Direct Impact: Increased demand for labour force poses a risk of a population influx. The increased population influx may lead to conflicting social pathologies in the surrounding local community.	Implementation of EMS:				
		(1) Develop and implement a social labour plan.	Compliant	A SLP is available, updated and implemented.	Sufficient	
		(2) Develop a grievance reporting procedure.	Not applicable	Such a grievance procedure has not been verified during the audit	Sufficient	
		On-site mitigation measures:				
		(1) Implement HIV/AIDS and substance abuse awareness.	Compliant	AIDS/HIV awareness is done annually.	Sufficient	
		(2) Make HIV/AIDS/STD prevention programmes a condition of contract for suppliers/sub-contractors.	Not applicable	Such contracts are confidential, and it could not be audited. Awareness programmes are done.	Sufficient	
		(3) Control access at site to prevent the presence of sex workers	Compliant	Access to the site is restricted.	Sufficient	
		(4) Establish clear rules and regulations for access to the mine site.	Compliant	Access to the site is restricted.	Sufficient	
		(5) Work with local health service providers to provide services and health surveys also on substance abuse.	Not applicable	This could not be confirmed	Sufficient	
		(6) Establish liaison structures with local police and local community policing forums.	Compliant	A stakeholder engagement officer is on site and has the necessary liaison structures in place.	Sufficient	
		Specialist recommendations:				
		(1) Reduce substance abuse and bad moral choices by conducting substance-abuse prevention education programmes.	Not applicable	This could not be confirmed	Sufficient	
		(2) Establish appropriate recreation facilities, taking special cognisance of workers without families.	Partially compliant	A braai area is on site and regular 'braais' are done (weekly at the end of the week).	Sufficient	
		(3) Prevent transmission, reduce prevalence and mitigate the effects of STD's by developing an awareness and prevention campaign targeting the work force. Include requirements for case finding and treatment of curable STI's.	Compliant	Awareness is done on STD's	Sufficient	
		(4) Develop a peer educator's programme that includes the distribution of condoms and provision of Voluntary Counselling and testing.	Not applicable	This could not be confirmed	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(5) Increase awareness about lifestyle diseases by providing educational hand-outs for use in local clinics and schools.	Not applicable	This could not be confirmed	Sufficient	
		(6) Reduce the adverse impacts of non-communicable diseases in the workforce by providing programmes to support the psychosocial, emotional and mental health of the workforce. These programmes to include the screening for cancer, diabetes, and high blood pressure.	Not applicable	This could not be confirmed	Sufficient	
		(7) Develop an awareness programme on lifestyle behaviours including eating habits, exercise, and responsible social choices.	Not applicable	This could not be confirmed	Sufficient	
		Compliance with standard:				
		(1) Develop and implement a Social Labour plan as defined by the MRPDA.	Compliant	A SLP is available, updated and implemented.	Sufficient	
		(2) Develop and implement a grievance lodging procedure.	Not applicable	Such a grievance procedure has not been verified during the audit	Sufficient	
	Community conflict					
	Direct Impact: Increased demand for labour force poses a risk of a population influx. The increased population influx may lead to community conflicts in the surrounding local community.	Implementation of EMS:				
		(1) Develop and implement a social labour plan.	Compliant	A SLP is available, updated and implemented.	Sufficient	
		(2) Develop and implement a social development plan.	Compliant	An SDP is done as part of the SLP.	Sufficient	
		(3) Develop and implement a skills development program.	Not applicable	This could not be confirmed	Sufficient	
		On-site mitigation measures:				
		(1) Promote an open and honest relationship with the local community.	Compliant	A stakeholder engagement officer is on site and has the necessary liaison structures in place.	Sufficient	
		(2) Ensure the employment of local labour force and service providers or sub-contractors.	Compliant	Locals are employed where possible.	Sufficient	
		(3) Promote community involvement through supporting local development projects.	Compliant	Various development projects done at the Dithamaga community.	Sufficient	
		Specialist recommendations:				
		(1) Improve social cohesion in the community by collaborating with the authorities to establish a system to monitor violence and assess community cohesion related to project activities.	Not applicable	This could not be confirmed	Sufficient	
		(2) Conduct violence-prevention education programmes.	Not applicable	This could not be confirmed	Sufficient	
		Compliance with standard:				
		(1) Develop and implement a Social Labour plan as defined by the MRPDA.	Compliant	A SLP is available, updated and implemented.	Sufficient	
		(2) Develop and implement a grievance lodging procedure.	Not applicable	Such a grievance procedure has not been verified during the audit	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
	Safety of employees					
	Direct Impact: Increased demand for labour and employees from different cultures may pose the risk to the lack of knowledge and skills on health and safety in the workplace. Different human behaviours deal with different situations and if there is not a simplified system of managing health and safety risk, situations resulting loss or injury of human life may be a end result.	Implementation of EMS:				
		(1) Develop and implement a Health and Safety plan.	Compliant	A health and safety plan is available and implemented.	Sufficient	
		(2) All employees to be trained in health and safety in the workplace.	Compliant	Health and safety training done during induction and job specific training.	Sufficient	
		(3) Develop and implement an employee training program.	Compliant	Health and safety training done during induction and job specific training.	Sufficient	
		(4) Keep and maintain a record of all training of employees.	Compliant	Health and safety training done during induction and job specific training; records are kept by the SHE administrator.	Sufficient	
		On-site mitigation measures:				
		(1) Ensure compliance to the relevant Occupational Health and safety act and regulations.	Compliant	An on-site clinic is available and entry examinations are done, as well as annual examinations. Occupational hygiene is also checked and monitored by an appointed occupational hygienist.	Sufficient	
		(2) All employees or sub-contractors entering site must be inducted to ensure the awareness of the developed health and safety plan.	Compliant	Health and safety training done during induction and job specific training.	Sufficient	
		(3) A health and safety representatives to be appointed.	Compliant	SHE reps are appointed.	Sufficient	
		(4) Regular inspections and observations of on-site activities shall take place.	Compliant	Safety officers are on site and inspects the site regularly.	Sufficient	
		(5) All incidents to be reported, recorded, investigated, and mitigated.	Compliant	All safety incidents are recorded, reported and investigated.	Sufficient	
		(6) Where required, adequate safety requirements for all areas to be clearly indicated.	Compliant	Safety signage is displayed around site.	Sufficient	
		(7) Employees or sub-contractors must be informed as to what required PPE is applicable in working sections.	Compliant	PPE requirements are communicated and displayed on signage at various entry areas.	Sufficient	
		(8) All site personnel and cub-contractors to be fully equipped with appropriate PPE at all times.	Compliant	PPE provided.	Sufficient	
		(9) Safety signs to be provided in areas considered as high-risk zones.	Compliant	Safety signs are provided at the high-risk areas such as the mining area.	Sufficient	
		(10) Adequate first aid services must be provided.	Not applicable	This could not be confirmed	Sufficient	
		(11) Ongoing health and safety awareness campaigns must be promoted.	Compliant	Safety campaigns are conducted regularly	Sufficient	
		Legal requirements:				

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(1) Development of a Mine Health and Safety Management plan in accordance with the following legislation:	Compliant	The safety procedures on site are based on the MHSA and OHSA.	Sufficient	
		· Occupational Health and Safety Act of 2004; and				
		· Mine Health and safety Act of 1996.				
		<u>Specialist recommendations:</u>				
		(1) Increase awareness on safety by presenting Awareness training and education on safety risks potentially experienced by employees that are associated with overcrowding including, paraffin poisoning, fires, burns, road safety.	Partially compliant	Regular training done but it could not be provided that all these risks have been included.	Sufficient	
		(2) Involvement in awareness campaigns at schools about traffic safety, paraffin, pesticide and domestic fuel-use safety.	Not applicable	This could not be confirmed	Sufficient	
		(3) Reduce injuries on site by managing access control to site.	Compliant	Access to the site is restricted.	Sufficient	
		(4) All personnel or visitors to be trained on safety issues before entering site.	Partially compliant	Not all personnel are inducted.	Sufficient	
		(5) Reduce occupational sources of injuries and accidents by providing training and regular refresher courses for employees on safety issues.	Compliant	Inductions are done and refreshers are done annually.	Sufficient	
		(6) Adhere to the Occupational and Mine Health and safety acts.	Compliant	Adherence to the OHSA and MHSA were largely compliant.	Sufficient	
		(7) Form a Safety and health forum to discuss success and failure. These forums meetings to be held on a regular basis.	Not applicable	This could not be confirmed	Sufficient	
		<u>Compliance with standard:</u>				
		(1) Develop and implement a Health and Safety Management plan.	Compliant	A health and safety plan is available and implemented.	Sufficient	
	Job creation and skills training					
	Direct Impact: As positive, local employed labour force will form part of a skills and training development programme. The proposed mining operation will create a job opportunity for at least a total of 60 people.	<u>Implementation of EMS:</u>				
		(1) Develop and implement a social labour plan.	Compliant	A SLP is available, updated and implemented.	Sufficient	
		(2) Develop a grievance reporting procedure.	Not applicable	Such a grievance procedure has not been verified during the audit	Sufficient	
		<u>On-site mitigation measures:</u>				
		(1) Maximise and monitor local recruitment where required.	Compliant	Local employment is used where possible.	Sufficient	
		(2) Consult local labour recruitment offices.	Not applicable	No such offices exist in the community	Sufficient	
		(3) Prevent nepotism/corruption in local recruitment structures.	Not applicable	This could not be confirmed	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(4) Promote employment of women and youth.	Partially compliant	Where possible, women will employ such as in administration positions. Youth employment is encouraged where possible, such as in lower experience positions. More can however be done to improve women and youth employment.	Sufficient	
		(5) Train locally recruited construction workers for longer-term employment where possible.	Not applicable	This could not be confirmed	Sufficient	
		(6) Development of a register of local SMMEs.	Not applicable	This could not be confirmed	Sufficient	
		(7) Linkages with skills development/ SMME development institutions.	Not applicable	This could not be confirmed	Sufficient	
		(8) Explore opportunities for collaboration with other mining/electricity enterprises on LED/CSR projects.	Not applicable	This could not be confirmed	Sufficient	
		(9) Support economic diversification through development of alternative markets.	Not applicable	This could not be confirmed	Sufficient	
		(10) Collaborate with adjacent mining companies to develop and implement sustainable community projects.	Not applicable	This could not be confirmed	Sufficient	
		Specialist recommendations:				
		(1) Improving financial skills in employees and extended families, and community by conducting socio-economic education programmes and teaching financial skills	Not applicable	This could not be confirmed	Sufficient	
		Compliance with standard:				
		(1) Develop and implement a Social Labour plan as defined by the MRPDA.	Not applicable	This could not be confirmed	Sufficient	
		(2) Develop and implement a grievance lodging procedure.	Not applicable	This could not be confirmed	Sufficient	
	Population influx					
	Indirect Impact: Social projects forming part of the proposed mining project will create additional job opportunities for the local communities.	Implementation of EMS:				
		(1) Develop and implement a social labour plan.	Compliant	A SLP is available, updated and implemented.	Sufficient	
		(2) Develop a grievance reporting procedure.	Not applicable	Such a grievance procedure has not been verified during the audit	Sufficient	
		On-site mitigation measures:				
		(1) Maximise and monitor local recruitment where required.	Compliant	Local employment is used where possible.	Sufficient	
		(2) Consult local labour recruitment offices.	Not applicable	No such offices exist in the community	Sufficient	
		(3) Prevent nepotism/corruption in local recruitment structures.	Not applicable	This could not be confirmed	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(4) Promote employment of women and youth.	Partially compliant	Where possible, women will employ such as in administration positions. Youth employment is encouraged where possible, such as in lower experience positions. More can however be done to improve women and youth employment.	Sufficient	
		(5) Train locally recruited construction workers for longer-term employment where possible.	Not applicable	This could not be confirmed	Sufficient	
		(6) Development of a register of local SMMEs.	Not applicable	This could not be confirmed	Sufficient	
		(7) Linkages with skills development/ SMME development institutions.	Not applicable	This could not be confirmed	Sufficient	
		(8) Explore opportunities for collaboration with other mining/electricity enterprises on LED/CSR projects.	Not applicable	This could not be confirmed	Sufficient	
		(9) Support economic diversification through development of alternative markets.	Not applicable	This could not be confirmed	Sufficient	
		(10) Collaborate with adjacent mining companies to develop and implement sustainable community projects.	Not applicable	This could not be confirmed	Sufficient	
		Compliance with standard:				
		(1) Develop and implement a Social Labour plan as defined by the MRPDA.	Compliant	A SLP is available, updated and implemented.	Sufficient	
		(2) Develop and implement a grievance lodging procedure.	Not applicable	Such a grievance procedure has not been verified during the audit	Sufficient	
Operations						
14. Employment of workers and procurement of construction materials	Loss of labour					
	Direct Impact: Increased demand of labour force poses a risk of the local farmers losing farm labour due to competing financial income.	Implementation of EMS:				
		(1) Develop and implement a social labour plan.	Compliant	A SLP is available, updated and implemented.	Sufficient	
		On-site mitigation measures:				
		(1) During community engagement/information dissemination, emphasis must be placed on the fact that permanent employment is directly related to the feasibility of the mine operations.	Compliant	Economic opportunities, especially employment, are regularly discussed and emphasis is placed on the mine's economic viability.	Sufficient	
		(2) Strict adherence to Labour legislation (in terms of the employment of minors etc.) must at all times be made.	Compliant	Labour legislation is adhered to. The DMR also regularly audits the site in terms of its employment practices.	Sufficient	
		Legal requirements:				
		(1) Adherence with the South African Employment act of 2002.	Compliant	Labour legislation is adhered to. The DMR also regularly audits the site in terms of its employment practices.	Sufficient	
		Compliance with standard:				

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(1) Develop and implement a Social Labour plan as defined by the MRPDA.	Compliant	A SLP is available, updated and implemented.	Sufficient	
		(2) Develop and implement a grievance lodging procedure.	Not applicable	Such a grievance procedure has not been verified during the audit	Sufficient	
	Pressure on resources					
	Direct Impact: Increased demand for labour force poses a risk of a population influx in the local district municipality. The increasing population will put pressure on the local municipality to provide services such as sewage, drinking water, waste management, electricity etc.	Implementation of EMS:				
		(1) Develop and implement a social labour plan.	Compliant	A SLP is available, updated and implemented.	Sufficient	
		On-site mitigation measures:				
		(1) The employment of local labour to be promoted.	Compliant	Local employment is used where possible.	Sufficient	
		(2) Ensure housing of employees on existing infrastructures.	Not applicable	Employees has existing housing and it is not viable for the mine to provide housing.	Sufficient	
		Specialist recommendations:				
		(1) Reduce overcrowding by collaborating with relevant departments on housing requirements i.e. total square meters v.s number of rooms, indoor cooking practices, etc.	Compliant	No overcrowding noted in the communities. Employment on the mine is very limited.	Sufficient	
		(2) Improve vaccination coverage by collaborating with the relevant departments on awareness creation around vaccination to communicable diseases for vulnerable sub-populations such as children and old people.	Not compliant	Clinic benefits are currently only provided to employees.	Sufficient	
		(3) Reduce the prevalence of communicable diseases by collaborating with relevant departments, schools for awareness creation and improved understanding of factors exacerbating communicable diseases, including coping strategies that result in behaviour change.	Not compliant	Clinic benefits are currently only provided to employees.	Sufficient	
		(4) Improve capacity of health services by:				
		(4.1) collaborating with clinics to identify opportunities for assisting with health services, specifically in terms of resources and maintenance issues;	Not compliant	Clinic benefits are currently only provided to employees.	Sufficient	
		(4.2) On-site health facility operational at the onset of construction;	Compliant	An on-site facility is available.	Sufficient	
		(4.3) Assisting with the development of health-effect prevention plan to increase community resilience by improving coping capability reducing exposure and reducing susceptibility of vulnerable sub-populations.	Not compliant	No such plan was provided.	Sufficient	
		Compliance with standard:				
		(1) Develop and implement a Social Labour plan as defined by the MRPDA.	Compliant	A SLP is available, updated and implemented.	Sufficient	
		(2) Develop and implement a grievance lodging procedure.	Not applicable	Such a grievance procedure has not been verified during the audit	Sufficient	
	Social pathogens					

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
	Direct Impact: Increased demand for labour force poses a risk of a population influx. The increased population influx may lead to conflicting social pathologies in the surrounding local community.	Implementation of EMS:				
		(1) Develop and implement a social labour plan.	Compliant	A SLP is available, updated and implemented.	Sufficient	
		(2) Develop a grievance reporting procedure.	Not applicable	Such a grievance procedure has not been verified during the audit	Sufficient	
		On-site mitigation measures:				
		(1) Implement HIV/AIDS and substance abuse awareness.	Compliant	AIDS/HIV awareness is done annually.	Sufficient	
		(2) Make HIV/AIDS/STD prevention programmes a condition of contract for suppliers/sub-contractors.	Not applicable	Such contracts are confidential, and it could not be audited. Awareness programmes are done.	Sufficient	
		(3) Control access at site to prevent the presence of sex workers.	Compliant	Access to the site is restricted.	Sufficient	
		(4) Establish clear rules and regulations for access to the mine site.	Compliant	Access to the site is restricted.	Sufficient	
		(5) Work with local health service providers to provide services and health surveys also on substance abuse.	Not applicable	This could not be confirmed	Sufficient	
		(6) Establish liaison structures with local police and local community policing forums.	Compliant	A stakeholder engagement officer is on site and has the necessary liaison structures in place.	Sufficient	
		Specialist recommendations:				
		(1) Reduce substance abuse and bad moral choices by conducting substance-abuse prevention education programmes.	Not applicable	This could not be confirmed	Sufficient	
		(2) Establish appropriate recreation facilities, taking special cognisance of workers without families.	Partially compliant	A braai area is on site and regular 'braais' are done (weekly at the end of the week).	Sufficient	
		(3) Prevent transmission, reduce prevalence and mitigate the effects of STD's by developing an awareness and prevention campaign targeting the work force. Include requirements for case finding and treatment of curable STI's.	Compliant	Awareness is done on STD's	Sufficient	
		(4) Develop a peer educator's programme that includes the distribution of condoms and provision of Voluntary Counselling and testing.	Not applicable	This could not be confirmed	Sufficient	
		(5) Increase awareness about lifestyle diseases by providing educational hand-outs for use in local clinics and schools.	Not applicable	This could not be confirmed	Sufficient	
		(6) Reduce the adverse impacts of non-communicable diseases in the workforce by providing programmes to support the psychosocial, emotional and mental health of the workforce. These programmes to include the screening for cancer, diabetes, and high blood pressure.	Not applicable	This could not be confirmed	Sufficient	
		(7) Develop an awareness programme on lifestyle behaviours including eating habits, exercise, and responsible social choices.	Not applicable	This could not be confirmed	Sufficient	
		Compliance with standard:				
		(1) Develop and implement a Social Labour plan as defined by the MRPDA.	Compliant	A SLP is available, updated and implemented.	Sufficient	
		(2) Develop and implement a grievance lodging procedure.	Not applicable	Such a grievance procedure has not been verified during the audit	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
	Community conflict					
	Direct Impact: Increased demand for labour force poses a risk of a population influx. The increased population influx may lead to community conflicts in the surrounding local community.	Implementation of EMS:				
		(1) Develop and implement a social labour plan.	Compliant	A SLP is available, updated and implemented.	Sufficient	
		(2) Develop and implement a social development plan.	Compliant	A SDP is done as part of the SLP.	Sufficient	
		(3) Develop and implement a skills development program.	Not applicable	This could not be confirmed	Sufficient	
		On-site mitigation measures:				
		(1) Promote an open and honest relationship with the local community.	Compliant	A stakeholder engagement officer is on site and has the necessary liaison structures in place.	Sufficient	
		(2) Ensure the employment of local labour force and service providers or sub-contractors.	Compliant	Locals are employed where possible.	Sufficient	
		(3) Promote community involvement through supporting local development projects.	Compliant	Various development projects done at the Dithamaga community.	Sufficient	
		Specialist recommendations:				
		(1) Improve social cohesion in the community by collaborating with the authorities to establish a system to monitor violence and assess community cohesion related to project activities.	Not applicable	This could not be confirmed	Sufficient	
		(2) Conduct violence-prevention education programmes.	Not applicable	This could not be confirmed	Sufficient	
		Compliance with standard:				
		(1) Develop and implement a Social Labour plan as defined by the MRPDA.	Compliant	A SLP is available, updated and implemented.	Sufficient	
		(2) Develop and implement a grievance lodging procedure.	Not applicable	Such a grievance procedure has not been verified during the audit	Sufficient	
	Safety of employees					
	Direct Impact: Increased demand for labour and employees from different cultures may pose the risk to the lack of knowledge and skills on health and safety in the workplace. Different human behaviours deal with different situations and if there is not a simplified system of managing health and safety risk, situations resulting loss or injury of human life may be a end result.	Implementation of EMS:				
		(1) Develop and implement a Health and Safety plan.	Compliant	A health and safety plan are available and implemented.	Sufficient	
		(2) All employees to be trained in health and safety in the workplace.	Compliant	Health and safety training done during induction and job specific training.	Sufficient	
		(3) Develop and implement an employee training program.	Compliant	Health and safety training done during induction and job specific training.	Sufficient	
		(4) Keep and maintain a record of all training of employees.	Compliant	Health and safety training done during induction and job specific training; records are kept by the SHE administrator.	Sufficient	
		On-site mitigation measures:				
		(1) Ensure compliance to the relevant Occupational Health and safety act and regulations.	Compliant	An on-site clinic is available and entry examinations are done, as well as annual examinations. Occupational hygiene is also checked and monitored by an appointed	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
				occupational hygienist.		
		(2) All employees or sub-contractors entering site must be inducted to ensure the awareness of the developed health and safety plan.	Compliant	Health and safety training done during induction and job specific training.	Sufficient	
		(3) A health and safety representatives to be appointed.	Compliant	SHE reps are appointed.	Sufficient	
		(4) Regular inspections and observations of on-site activities shall take place.	Compliant	Safety officers are on site and inspects the site regularly.	Sufficient	
		(5) All incidents to be reported, recorded, investigated, and mitigated.	Compliant	All safety incidents are recorded, reported and investigated.	Sufficient	
		(6) Where required, adequate safety requirements for all areas to be clearly indicated.	Compliant	Safety signage is displayed around site.	Sufficient	
		(7) Employees or sub-contractors must be informed as to what required PPE is applicable in working sections.	Compliant	PPE requirements are communicated and displayed on signage at various entry areas.	Sufficient	
		(8) All site personnel and sub-contractors to be fully equipped with appropriate PPE at all times.	Compliant	PPE provided.	Sufficient	
		(9) Safety signs to be provided in areas considered as high-risk zones.	Compliant	Safety signs are provided at the high-risk areas such as the mining area.	Sufficient	
		(10) Adequate first aid services must be provided.	Not applicable	This could not be confirmed	Sufficient	
		(11) Ongoing health and safety awareness campaigns must be promoted.	Compliant	Safety campaigns are conducted regularly	Sufficient	
		Legal requirements:				
		(1) Development of a Mine Health and Safety Management plan in accordance with the following legislation:	Compliant	The safety procedures on site are based on the MHSA and OHSA.	Sufficient	
		· Occupational Health and Safety Act of 2004; and				
		· Mine Health and safety Act of 1996.				
		Specialist recommendations:				
		(1) Increase awareness on safety by presenting Awareness training and education on safety risks potentially experienced by employees that are associated with overcrowding including, paraffin poisoning, fires, burns, road safety.	Partially compliant	Regular training done but it could not be provided that all these risks have been included.	Sufficient	
		(2) Involvement in awareness campaigns at schools about traffic safety, paraffin, pesticide and domestic fuel-use safety.	Not applicable	This could not be confirmed	Sufficient	
		(3) Reduce injuries on site by managing access control to site.	Compliant	Access to the site is restricted.	Sufficient	
		(4) All personnel or visitors to be trained on safety issues before entering site.	Partially compliant	Not all personnel are inducted.	Sufficient	
		(5) Reduce occupational sources of injuries and accidents by providing training and regular refresher courses for employees on safety issues.	Compliant	Inductions are done and refreshers are done annually.	Sufficient	
		(6) Adhere to the Occupational and Mine Health and safety acts.	Compliant	Adherence to the OHSA and MHSA were largely compliant.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(7) Form a Safety and health forum to discuss success and failure. These forums meetings to be held on a regular basis.	Not applicable	This could not be confirmed	Sufficient	
		Compliance with standard:				
		(1) Develop and implement a Health and Safety Management plan.	Compliant	A health and safety plan are available and implemented.	Sufficient	
	Job creation and skills training					
	Direct Impact: As positive, local employed labour force will form part of a skills and training development programme. The proposed mining operation will create a job opportunity for at least a total of 60 people.	Implementation of EMS:				
		(1) Develop and implement a social labour plan.	Compliant	A SLP is available, updated and implemented.	Sufficient	
		(2) Develop a grievance reporting procedure.	Not applicable	Such a grievance procedure has not been verified during the audit	Sufficient	
		On-site mitigation measures:				
		(1) Maximise and monitor local recruitment where required.	Compliant	Local employment is used where possible.	Sufficient	
		(2) Consult local labour recruitment offices.	Not applicable	No such offices exist in the community	Sufficient	
		(3) Prevent nepotism/corruption in local recruitment structures.	Not applicable	This could not be confirmed	Sufficient	
		(4) Promote employment of women and youth.	Partially compliant	Where possible, women will be employed such as in administration positions. Youth employment is encouraged where possible, such as in lower experience positions. More can however be done to improve women and youth employment.	Sufficient	
		(5) Train locally recruited construction workers for longer-term employment where possible.	Not applicable	This could not be confirmed	Sufficient	
		(6) Development of a register of local SMMEs.	Not applicable	This could not be confirmed	Sufficient	
		(7) Linkages with skills development/ SMME development institutions.	Not applicable	This could not be confirmed	Sufficient	
		(8) Explore opportunities for collaboration with other mining/electricity enterprises on LED/CSR projects.	Not applicable	This could not be confirmed	Sufficient	
		(9) Support economic diversification through development of alternative markets.	Not applicable	This could not be confirmed	Sufficient	
		(10) Collaborate with adjacent mining companies to develop and implement sustainable community projects.	Not applicable	This could not be confirmed	Sufficient	
		Specialist recommendations:				
		(1) Improving financial skills in employees and extended families, and community by conducting socio-economic education programmes and teaching financial skills	Not applicable	This could not be confirmed	Sufficient	
		Compliance with standard:				
		(1) Develop and implement a Social Labour plan as defined by the MRPDA.	Not applicable	This could not be confirmed	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
Indirect Impact: Social projects forming part of the proposed mining project will create additional job opportunities for the local communities.		(2) Develop and implement a grievance lodging procedure.	Not applicable	This could not be confirmed	Sufficient	
	Population influx					
		Implementation of EMS:				
		(1) Develop and implement a social labour plan.	Compliant	A SLP is available, updated and implemented.	Sufficient	
		(2) Develop a grievance reporting procedure.	Not applicable	Such a grievance procedure has not been verified during the audit	Sufficient	
		On-site mitigation measures:				
		(1) Maximise and monitor local recruitment where required.	Compliant	Local employment is used where possible.	Sufficient	
		(2) Consult local labour recruitment offices.	Not applicable	No such offices exist in the community	Sufficient	
		(3) Prevent nepotism/corruption in local recruitment structures.	Not applicable	This could not be confirmed	Sufficient	
		(4) Promote employment of women and youth.	Partially compliant	Where possible, women will be employed such as in administration positions. Youth employment is encouraged where possible, such as in lower experience positions. More can however be done to improve women and youth employment.	Sufficient	
		(5) Train locally recruited construction workers for longer-term employment where possible.	Not applicable	This could not be confirmed	Sufficient	
		(6) Development of a register of local SMMEs.	Not applicable	This could not be confirmed	Sufficient	
		(7) Linkages with skills development/ SMME development institutions.	Not applicable	This could not be confirmed	Sufficient	
		(8) Explore opportunities for collaboration with other mining/electricity enterprises on LED/CSR projects.	Not applicable	This could not be confirmed	Sufficient	
		(9) Support economic diversification through development of alternative markets.	Not applicable	This could not be confirmed	Sufficient	
		(10) Collaborate with adjacent mining companies to develop and implement sustainable community projects.	Not applicable	This could not be confirmed	Sufficient	
		Compliance with standard:				
		(1) Develop and implement a Social Labour plan as defined by the MRPDA.	Compliant	A SLP is available, updated and implemented.	Sufficient	
		(2) Develop and implement a grievance lodging procedure.	Not applicable	Such a grievance procedure has not been verified during the audit	Sufficient	
	Waste					
Construction						
Waste generation and littering						

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
4. Onsite Clinic	Direct Impact: Improper management of medical waste generated during the construction and operational phase poses a high risk to human health.	Implementation of EMS:				
		(1) Develop and implement a Waste Management plan.	Not compliant	No waste management plan.	Sufficient	
		(2) Develop and implement a waste recoding procedure.	Not compliant	No waste recording procedure provided.	Sufficient	
		(3) Develop and implement a Health and Safety management plan, including the handling of medical waste.	Compliant	A health and safety management plan is available.	Sufficient	
		(4) Regular inspections of designated waste management area and/or facilities.	Partially compliant	Regular observations and checks re done on the waste facilities but not recorded.	Sufficient	
		(5) Reporting and recording of waste related incidents.	Not compliant	No waste incidents provided.	Sufficient	
		(6) Continuous awareness training on Recycling, Reduction, Re-use, and avoidance of waste.	Partially compliant	No records of training or awareness on waste recycling, however, during the site visits, used oil and steels have been observed effectively separated and recycled. Employees interviewed understood that these needed to be separated. Training, record keeping, and recycling can be improved.	Sufficient	
		On-site mitigation measures:				
		(1) Ensure that all first aid facilities are equipped with specialised medical waste disposal bins.	Compliant	First aid facilities are sufficiently equipped.	Sufficient	
		(2) Appoint a specialised and suitably accredited medical waste service provider.	Compliant	The clinic is operated by an external service provider called Life, who has trained personnel.	Sufficient	
		(3) Ensure that at no circumstance any medical waste generated from a first aid incident are mixed into general or hydrocarbon contaminated waste.	Compliant	Separate waste bins are provided at the clinic.	Sufficient	
		(4) Ensure all personnel are made aware of the dangers of medical waste.	Compliant	The clinic is operated by an external service provider called Life, who has trained personnel.	Sufficient	
		(5) Record must be kept of all medical waste generated throughout the entire life cycle of the project. (6) Safe disposal certificates to be obtained and kept on record.	Compliant	The medical waste records are available electronically from Compass waste.	Sufficient	
		(7) All appointed first aid personnel must be trained in management of medical waste.	Not compliant	Training could not be provided.	Sufficient	
		Legal requirements:				
		(1) Requirements for management of blood products stipulated in GN R. 1935 of the Human Tissue Act of 1983, must be incorporated into the Spitsvale Mine Health and Safety management plan.	Compliant	This is provided in the operating procedures of the external service provider who operates the clinic.	Sufficient	
		(2) Requirements for the disposal of bodies and tissue as stipulated in GN R. 2878 of the Human tissue Act of 1983, must be incorporated into the Spitsvale Mine Health and Safety management plan.	Compliant	This is provided in the operating procedures of the external service provider who operates the clinic.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(3) Requirements for the destruction of medicines as stipulated in GN R. 1965 of the Medicines and related substances control Act, must be incorporated into the Spitsvale Mine Health and Safety management plan	Compliant	This is provided in the operating procedures of the external service provider who operates the clinic.	Sufficient	
		Compliance with standards:				
		(1) Development of a Health and Safety management plan specifically addressing the management of medical waste.	Compliant	A health and safety management plan are available.	Sufficient	
		(2) Development of a management plan for the operation of the on-site Clinic.	Compliant	The clinic is operated by an external service provider called Life, who has its own operating procedures.	Sufficient	
		(3) Development and implementation of a detailed Waste management plan.	Not compliant	No waste management plan.	Sufficient	
Waste generation and littering						
5. Mining offices (construction and operation) i.e. operation of training centres, offices and kitchen facilities	Direct Impact: Littering throughout the construction and operational phase poses the risk of the visual environment to be affected negatively. The storing of waste onsite for an extended time may cause the formation of leachate that will affect the soil and water quality of the surrounding environment in a negative way. Indirect Impact: Exposure of leachate to the natural environment poses a health risk to the surrounding fauna and flora habitats as well as human health.	Implementation of EMS:				
		(1) Develop and implement as waste management plan with the focus on reuse, reduce, recycle, or avoid.	Not compliant	No waste management plan.	Sufficient	
		(2) Development and maintenance of a waste disposal record keeping system.	Not compliant	Only some waste records could be provided (used oil collection).	Sufficient	
		(3) Regular inspections of designated waste management area and/or facilities.	Partially compliant	Inspections undertaken regularly but not recorded.	Sufficient	
		(4) Reporting and recording of waste related incidents.	Not compliant	No waste related incidents recorded despite incidents observed.	Sufficient	
		(5) Continuous awareness training on Recycling, Reduction, Re-use, and avoidance of waste.	Partially compliant	No records of training or awareness on waste recycling, however, during the site visits, used oil and steels have been observed effectively separated and recycled. Employees interviewed understood that these needed to be separated. Training, record keeping, and recycling can be improved.	Sufficient	
		On-site mitigation measures:				
		(1) Characterise and quantify all waste streams associated to the authorised activities in terms of quantity, hazard, generation frequency and recyclability and define and implement disposal options as specified in the waste management plan.	Partially compliant	The residue facilities have been characterised. All other waste is already classified in the relevant norm and standards for disposal. Not all quantities not recorded.	Sufficient	
		(2) As part of the characterisation define opportunities for source reduction, as well as reuse and recycling as opposed to simply disposing waste.	Partially compliant	Some waste rock will be re-used in rehabilitation for backfilling the open pits.	Sufficient	
		(3) Ensure segregation of hazardous wastes from non-hazardous.	Compliant	A separate hazardous waste bin is available and used.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(4) Sealable bins and containers must be made available for the storage of all streams of waste.	Compliant	Where possible, sealable bins are used. The hazardous waste bin is a closed lidded 6 m3 steel container (not necessarily sealable). Other domestic waste bins are wheelie bins with lids.	Sufficient	
		(5) During the construction phase, temporary storage of construction waste to be stored in a bunded designated area.	Not applicable	Could not be confirmed during the operational audit.	Sufficient	
		(6) Waste will not be stored longer than specified by the waste regulations. If storage exceeds the threshold stipulated by the regulations a waste management licence must be obtained.	Compliant	Waste is removed routinely, which does not exceed the stipulated 180 days.	Sufficient	
		(7) All waste materials must be removed off site by a suitable and registered waste service provider.	Compliant	Hazardous waste removed by EWOR (Pty) Ltd, a registered hazardous waste transporter.	Sufficient	
		(8) All waste to be disposed of at a suitably registered waste disposal facility.	Not compliant	No waste manifests could be provided for the disposal of the hazardous waste.	Sufficient	
		(9) Proof of disposal to be obtained and kept on record.	Not compliant	No waste manifests could be provided for the disposal of the hazardous waste.	Sufficient	
		(10) Maintain a waste register for materials removed from site, indicating type, quantity, date, haulage contractor, delivery point, and safe disposal certificates.	Not compliant	No waste manifests could be provided for the disposal of the hazardous waste.	Sufficient	
		(11) All waste receptacles to be clearly labelled according to type.	Not compliant	No clear labelling or signage for different waste types.	Sufficient	
		(12) Where possible, recyclable waste including glass, paper, and plastic must be separated, stored and recycled where possible.	Not compliant	No domestic/general waste recycling.	Sufficient	
		(13) Waste oil and scrap metal should also be recycled if possible.	Compliant	Waste oil and scrap metal are recycled.	Sufficient	
		(14) All employees or contractors must be informed about the necessity of using waste drums.	Compliant	Employees are being informed by their supervisors. The litter control was good, and the bins provided were used.	Sufficient	
		(15) No littering will be allowed, and a daily site clean-up will be initiated.	Compliant	Overall litter control was good. Clean-ups are done but necessarily daily.	Sufficient	
		(16) All domestic refuse generated by staff and sub-contractors must be disposed at a registered waste disposal facility by a suitably registered service provider on a regular basis (i.e. weekly).	Partially compliant	General waste is regularly removed by North-West recycling (Pty) Ltd. No proof was provided of correct disposal.	Sufficient	
		(17) Measures to ensure that solid waste is transported as to avoid waste spills <i>enroute</i> must be implemented.	Compliant	Closed bins and/or compactor trucks are used.	Sufficient	
		(18) Waste bins must be emptied on a regular basis as to ensure bins do not overflow.	Compliant	Bins were not overflowing during the audit.	Sufficient	
		(19) Site should be kept clean and free of rubbish that could potentially attract animal pests and that bins are scavenger proof.	Compliant	Site is free from nuisances	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(20) DO not dump waste of any nature, or any foreign material into any drainage line or stream. A strict no dumping policy must be communicated to all staff and sub-contractors.	Compliant	No dumping observed in any of the drainage lines.	Sufficient	
		(21) During transportation of waste, all waste service providers must comply with the codes of practice and guidelines for licensing of waste transport vehicles and the regulation and monitoring of transport operations.	Partially compliant	This could only be confirmed for the EWOR (Pty) Ltd. waste vehicle.	Sufficient	
		Legal requirements:				
		(1) Ensure requirements stipulated in the National Environmental Management: Waste Act (NEMWA) of 2008 are incorporated in the Waste Management Plan.	Partially compliant	No waste management plan. Waste management was observed on site with demarcated bins and collections. No waste manifest could be provided by the company.	Sufficient	
		(2) GN R. 634 list a number of requirements related to Waste classification and management. These requirements as stipulated in the regulations must be incorporated into the Waste Management Plan.	Partially compliant	Waste classification was done as part of the WUL application. No waste management plan available although the WML application and this EMP could be seen as a waste management plan, or at least contains enough information to develop a waste management pan.	Sufficient	
		(3) GN R. 921 list a number of activities that requires a Waste Management Licence in terms of NEMWA. Listed activity number 11 ("The establishment or reclamation of a residue stockpile or residue deposit resulting from activities which require a mining right in terms of the MPRDA (Act 28 of 2002)") will require a waste management licence in terms of the regulations.	Partially compliant	WML application submitted and awaiting approval from the competent authorities.	Sufficient	
		(4) GN R. 625 sets requirements for a waste producer to register and report waste quantity of the National Waste Information System.	Not compliant	Not registered on NWIS.	Sufficient	
		(5) GN R. 635 sets the National norms and standards for the assessment of waste for landfill. The procedures for determining the class of waste for landfill must be incorporated into the Waste Management plan.	Partially compliant	Waste classification done on the waste rock and other residue material as part of the WUL application. All other wastes generated on site are pre-classified.	Sufficient	
		(6) GN R. 636 sets the National norms and standards for the disposal of waste for landfill. These requirements should be considered when disposing waste to landfill.	Not compliant	The waste classifications done on the residue material informed the WML management measures. The other pre-classified wastes (hazardous waste, general waste) are disposed according the GN. 636, although no proof could be provided in the form of manifests or landfill notes.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(7) GN R. 926 stipulates the norms and standards associated to the storage of waste. These requirements must be incorporated in the Waste Management Plan.	Not compliant	No waste management plan. Waste management was observed on site with demarcated bins and collections. The storage areas do not all comply with the N & S and the waste dumps do not have class D liners (Clay liners)..	Sufficient	
		(8) All waste tyres generated on site must be managed according to the Waste tyre regulations published under the Environment Conservation Act of 1989.	Compliant	Waste tyres removed by North-West recycling and removed and stored according to the waste tyre regulations.	Sufficient	
		Compliance with standards:				
		(1) Compliance with the National Environmental Management: Waste Act, act no 59 of 2008 and associated regulations.	Partially compliant	A WML application has been submitted. Some waste measures are implemented but still requires action. Waste classification has been done according to the N & S but need to be incorporated into a waste management plan.	Sufficient	
Operation						
Illegal dumping						
25. Waste generation, storage and disposal	Direct Impact: Dumping of generated water in areas other than is approved by the authorisation or EMP poses a high risk of polluting numerous sources i.e. Water and soil. The dumping of general waste poses a choking risk to grazing animals. Hazardous Leachates from illegal dumps also poses a risk to the health of surrounding communities. Indirect Impact: The hazardous leachate from the waste storage facilities poses a risk of contaminating both surface and sub-surface water as well as soil resources. This may lead to the degradation of conditions for the aquatic ecology to thrive.	Implementation of EMS:				
		(1) Develop and implement as waste management plan with the focus on reuse, reduce, recycle, or avoid.	Not compliant	No waste management plan.	Sufficient	
		(2) Development and maintenance of a waste disposal record keeping system.	Not compliant	Only some waste records could be provided (used oil collection).	Sufficient	
		On-site mitigation measures:				
		(1) Characterise and quantify all waste streams associated to the authorised activities in terms of quantity, hazard, generation frequency and recyclability and define and implement disposal options as specified in the waste management plan.	Partially compliant	The residue facilities have been characterised. All other waste is already classified in the relevant norm and standards for disposal. Not all quantities not recorded.	Sufficient	
		(2) As part of the characterisation define opportunities for source reduction, as well as reuse and recycling as opposed to simply disposing waste.	Partially compliant	Some waste rock will be re-used in rehabilitation for backfilling the open pits.	Sufficient	
		(3) Ensure segregation of hazardous wastes from non-hazardous.	Compliant	A separate hazardous waste bin is available and used.	Sufficient	
		(4) Sealable bins and containers must be made available for the storage of all streams of waste.	Compliant	Where possible, sealable bins are used. The hazardous waste bin is a closed lidded 6 m3 steel container (not necessarily sealable). Other domestic waste bins are wheelie bins with lids.	Sufficient	
		(5) During the construction phase, temporary storage of construction waste to be stored in a bunded designated area.	Not applicable	Could not be confirmed during the operational audit.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(6) Waste will not be stored longer than specified by the waste regulations. If storage exceeds the threshold stipulated by the regulations a waste management licence must be obtained.	Compliant	Waste is removed routinely, which does not exceed the stipulated 180 days.	Sufficient	
		(7) All waste materials must be removed off site by a suitable and registered waste service provider.	Compliant	Hazardous waste removed by EWOR (Pty) Ltd, a registered hazardous waste transporter.	Sufficient	
		(8) All waste to be disposed of at a suitably registered waste disposal facility	Not compliant	No waste manifests could be provided for the disposal of the hazardous waste.	Sufficient	
		(9) Proof of disposal to be obtained and kept on record.	Not compliant	No waste manifests could be provided for the disposal of the hazardous waste.	Sufficient	
		(10) Maintain a waste register for materials removed from site, indicating type, quantity, date, haulage contractor, delivery point, and safe disposal certificates.	Not compliant	No waste manifests could be provided for the disposal of the hazardous waste.	Sufficient	
		(11) All waste receptacles to be clearly labelled according to type.	Not compliant	No clear labelling or signage for different waste types.	Sufficient	
		(12) Where possible, recyclable waste including glass, paper, and plastic must be separated, stored and recycled where possible.	Not compliant	No domestic/general waste recycling.	Sufficient	
		(13) Waste oil and scrap metal should also be recycled if possible.	Compliant	Waste oil and scrap metal are recycled.	Sufficient	
		(14) All employees or contractors must be informed about the necessity of using waste drums.	Compliant	Employees are being informed by their supervisors. The litter control was good, and the bins provided were used.	Sufficient	
		(15) No littering will be allowed, and a daily site clean-up will be initiated.	Compliant	Overall litter control was good. Clean-ups are done but necessarily daily.	Sufficient	
		(16) All domestic refuse generated by staff and sub-contractors must be disposed at a registered waste disposal facility by a suitably registered service provider on a regular basis (i.e. weekly).	Partially compliant	General waste is regularly removed by North-West recycling (Pty) Ltd. No proof was provided of correct disposal.	Sufficient	
		(17) Measures to ensure that solid waste is transported as to avoid waste spills en-route must be implemented.	Compliant	Closed bins and/or compactor trucks are used.	Sufficient	
		(18) Waste bins must be emptied on a regular basis as to ensure bins do not overflow.	Compliant	Bins were not overflowing during the audit.	Sufficient	
		(19) Site should be kept clean and free of rubbish that could potentially attract animal pests and that bins are scavenger proof.	Compliant	Site is free from nuisances	Sufficient	
		(20) DO not dump waste of any nature, or any foreign material into any drainage line or stream. A strict no dumping policy must be communicated to all staff and sub-contractors.	Compliant	No dumping observed in any of the drainage lines.	Sufficient	
		(21) During transportation of waste, all waste service providers must comply with the codes of practice and guidelines for licensing of waste transport vehicles and the regulation and monitoring of transport operations.	Partially compliant	This could only be confirmed for the EWOR (Pty) Ltd. waste vehicle.	Sufficient	
		Legal requirements:				

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(1) Ensure requirements stipulated in the National Environmental Management: Waste Act (NEMWA) of 2008 are incorporated in the Waste Management Plan.	Partially compliant	No waste management plan. Waste management was observed on site with demarcated bins and collections. No waste manifest could be provided by the company.	Sufficient	
		(2) GN R. 634 list a number of requirements related to Waste classification and management. These requirements as stipulated in the regulations must be incorporated into the Waste Management Plan.	Partially compliant	Waste classification was done as part of the WUL application. No waste management plan available although the WML application and this EMP could be seen as a waste management plan, or at least contains enough information to develop a waste management pan.	Sufficient	
		(3) GN R. 921 list a number of activities that requires a Waste Management Licence in terms of NEMWA. Listed activity number 11 ("The establishment or reclamation of a residue stockpile or residue deposit resulting from activities which require a mining right in terms of the MPRDA (Act 28 of 2002)") will require a waste management licence in terms of the regulations.	Partially compliant	WML application submitted and awaiting approval from the competent authorities.	Sufficient	
		(4) GN R. 625 sets requirements for a waste producer to register and report waste quantity of the National Waste Information System.	Not compliant	Not registered on NWIS.	Sufficient	
		(5) GN R. 635 sets the National norms and standards for the assessment of waste for landfill. The procedures for determining the class of waste for landfill must be incorporated into the Waste Management plan.	Partially compliant	Waste classification done on the waste rock and other residue material as part of the WUL application. All other wastes generated on site are pre-classified.	Sufficient	
		(6) GN R. 636 sets the National norms and standards for the disposal of waste for landfill. These requirements should be considered when disposing waste to landfill.	Not compliant	The waste classifications done on the residue material informed the WML management measures. The other pre-classified wastes (hazardous waste, general waste) are disposed according the GN. 636, although no proof could be provided in the form of manifests or landfill notes.	Sufficient	
		(7) GN R. 926 stipulates the norms and standards associated to the storage of waste. These requirements must be incorporated in the Waste Management Plan.	Not compliant	No waste management plan. Waste management was observed on site with demarcated bins and collections. The storage areas do not all comply with the N & S and the waste dumps do not have class D liners (Clay liners).	Sufficient	
		(8) All waste tyres generated on site must be managed according to the Waste tyre regulations published under the Environment Conservation Act of 1989.	Compliant	Waste tyres removed by North-West recycling and removed and stored according to the waste tyre regulations.	Sufficient	
		Compliance with standards:				
		(1) Compliance with the National Environmental Management: Waste Act, act no 59 of 2008 and associated regulations.	Partially compliant	A WML application has been submitted. Some waste measures are implemented but still requires action. Waste classification has been done according to the N & S but need to be incorporated into a waste management plan.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
Noise						
Construction						
Noise generation						
1. Access and hauling along roads i.e. during the construction of roads	Direct Impact: Increased noise levels at potentially sensitive receptors exceeding criteria of the Noise Control Regulations legislation (NCR) and SANS guidelines; Changing ambient sound levels could change the acceptable land use capability; Changing ambient sound levels could increase annoyance and potential complaints; and Disturbing character of sound.	Implementation of EMS:				
		(1) Development and implementation of a Acoustical Measurement & Audit Programme as part of the EMS. A monitoring program to be developed based on the specialist recommendations (Appendix F). (2) Recording, reporting, and remediating incidents related to noise.	Compliant	Noise monitoring, inspection and auditing is done by an external occupational hygienist and any issues identified are attended to.	Sufficient	
		(3) Regular inspections of plant.	Compliant		Sufficient	
		(4) Ensuring corrective and preventative actions are taken to address nonconformities.	Compliant		Sufficient	
		(5) Communicating findings of concern to I&AP.	Not applicable	No findings raised by hygienist	Sufficient	
		On-site mitigation measures:				
2. Site clearing and topsoil stripping for lay down area and all related mining infrastructure	Direct Impact: The use of construction equipment during site clearing and topsoil stripping may cause noise during the construction phase. If equipment is not maintained and serviced regularly high levels of noise may result throughout the construction and operational phase.	(1) Limit the maximum speed on the haul roads to 60 km/h or less. Road speeds should be kept as consistent as is feasibly possible (i.e. no speed bumps to reduce noise or stop junctions). This will help minimise the use of air brakes as well as reduce required maximum capacity of heavy vehicles during pull off.	Compliant	Speed limits are imposed	Sufficient	
		(2) Roads should be planned so as to reduce heavy vehicles reversing when collecting or dumping at stockpiles/tips etc. (E.g. use of a loop instead of a dead-end road). This will minimise the use of reverse alarms on vehicles.	Compliant	Roads are designed with effective turning.	Sufficient	
		(3) Regular inspections and servicing of plant.	Compliant	Regular maintenance undertaken on machines.	Sufficient	
		Legal requirements:				
		(1) Compliance with the National Noise control regulations.	Compliant	Regular monitoring is done and compliant with national noise control regulations	Sufficient	
5. Mining offices (construction and operation) i.e. operation of training centres, offices and kitchen	Direct Impact: The use of construction equipment may cause noise during the construction phase. If equipment is not maintained and serviced regularly high levels of noise may result throughout the construction and operational phase.	Specialist recommendations:				
		(1) Design an Acoustical Measurement & Audit Programme. Note: If there are no noise-sensitive receptors within 1,000m from any mining activities no routine noise monitoring will be required.	Not applicable	Residents further than 1km away.	Sufficient	
		(2) If feasible the road should be paved or asphalted (e.g. continuous graded asphalt). From an acoustical perspective paver bricks should not be considered. It is likely that routes will be unpaved. The developer should consider maintain these unpaved routes regularly smoothing out irregularities on the routes.	Compliant	The grave roads are maintained.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
facilities	9.Stores, workshops & wash bays 11. Fuel operating power generators					
		Compliance with standard:				
		(1) Develop and implement a noise monitoring programme to ensure compliance with the National Noise Control Regulations and SANS10103:2008 guidelines.	Compliant	Noise monitoring, inspection and auditing is done by an external occupational hygienist and any issues identified are attended to.	Sufficient	
		(2) Develop and implement a vehicle/plant/equipment management plan to specifically include routine inspections and testing of sound frequencies.	Compliant	Machines are routinely inspected and maintained.	Sufficient	
Operations						
Noise generation						
1. Access and hauling along roads i.e. during the construction of roads	Direct Impact: Increased noise levels at potentially sensitive receptors exceeding criteria of the Noise Control Regulations legislation (NCR) and SANS guidelines; Changing ambient sound levels could change the acceptable land use capability; Changing ambient sound levels could increase annoyance and potential complaints; and Disturbing character of sound.	Implementation of EMS:				
		(1) Development and implementation of an Acoustical Measurement & Audit Programme as part of the EMS. A monitoring program to be developed based on the specialist recommendations (Appendix F). (2) Recording, reporting, and remediating incidents related to noise.	Compliant	Noise monitoring, inspection and auditing is done by an external occupational hygienist and any issues identified are attended to.	Sufficient	
		(3) Regular inspections of plant.	Compliant		Sufficient	
		(4) Ensuring corrective and preventative actions are taken to address nonconformities.	Compliant		Sufficient	
		(5) Communicating findings of concern to I&AP.	Not applicable	No findings raised by hygienist	Sufficient	
		On-site mitigation measures:				
2. Site clearing and topsoil stripping for lay down area and all related mining infrastructure	Direct Impact: The use of construction equipment during site clearing and topsoil stripping may cause noise during the construction phase. If equipment is not maintained and serviced regularly high levels of noise may result throughout the construction and operational phase.	(1) Limit the maximum speed on the haul roads to 60 km/h or less. Road speeds should be kept as consistent as is feasibly possible (i.e. no speed bumps to reduce noise or stop junctions). This will help minimise the use of air brakes as well as reduce required maximum capacity of heavy vehicles during pull off.	Compliant	Speed limits are imposed	Sufficient	
		(2) Roads should be planned so as to reduce heavy vehicles reversing when collecting or dumping at stockpiles/tips etc. (E.g. use of a loop instead of a dead-end road). This will minimise the use of reverse alarms on vehicles.	Compliant	Roads are designed with effective turning.	Sufficient	
		(3) Regular inspections and servicing of plant.	Compliant	Regular maintenance undertaken on machines.	Sufficient	
		Legal requirements:				
		(1) Compliance with the National Noise control regulations.	Compliant	Regular monitoring is done and compliant with	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
				national noise control regulations		
5. Mining offices (construction and operation) i.e. operation of training centres, offices and kitchen facilities	Direct Impact: The use of construction equipment may cause noise during the construction phase. If equipment is not maintained and serviced regularly high levels of noise may result throughout the construction and operational phase.	Specialist recommendations:				
		(1) Design an Acoustical Measurement & Audit Programme. Note: If there are no noise-sensitive receptors within 1,000m from any mining activities no routine noise monitoring will be required.	Not applicable	Residents further than 1km away.	Sufficient	
		(2) If feasible the road should be paved or asphalted (e.g. continuous graded asphalt). From an acoustical perspective paver bricks should not be considered. It is likely that routes will be unpaved. The developer should consider maintain these unpaved routes regularly smoothing out irregularities on the routes.	Compliant	The grave roads are maintained.	Sufficient	
9.Stores, workshops & wash bays		Compliance with standard:				
		(1) Develop and implement a noise monitoring programme to ensure compliance with the National Noise Control Regulations and SANS10103:2008 guidelines.	Compliant	Noise monitoring, inspection and auditing is done by an external occupational hygienist and any issues identified are attended to.	Sufficient	
11. Fuel operating power generators		(2) Develop and implement a vehicle/plant/equipment management plan to specifically include routine inspections and testing of sound frequencies.	Compliant	Machines are routinely inspected and maintained.	Sufficient	
Water usage						
Water use for dust suppression						
1. Access and hauling along roads i.e. during the construction of roads	Direct Impact: Improper management of the water used during dust suppression may lead to the wastage of the available water resource.	Implementation of EMS:				
		(1) Water usage monitoring plan to be developed and implemented.	Not compliant	No water usage management plan provided	Sufficient	
		(2) Create awareness of water conservation.	Not compliant	No awareness done on water conservation	Sufficient	
		On-site mitigation measures:				
		(1) Filtered or treated water from PCD's may be used for dust suppression should they conform to the sediment load requirements or other quality requirements as specified by the Water Use Licence issued by the Department of Water Affairs and sanitation.	Not applicable	No PCD yet	Sufficient	
		(2) Monitor water usage and ensure that areas of waste are identified and minimised.	Partially compliant	Water usage monitored. No areas identified to conserve water.	Sufficient	
		(3) Where possible, reuse water from the PCD's for dust suppression on the roads.	Not applicable	No PCD yet	Sufficient	
		Legal requirements:				
		(1) A Water Use Licence to be obtained for all river crossings or development of infrastructure within or within close proximity to a watercourse as defined by the National Water Act, act no of	Not compliant	No WUL	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		1996				
		Compliance with standards:				
		(1) Development and implementation of a Dust management plan including the monitoring and prevention programme.	Compliant	A dust management plan implemented.	Sufficient	
		(2) Develop and implement a water usage record keeping procedure.	Partially compliant	Water usage monitored. No areas identified to conserve water.	Sufficient	
Domestic water use						
4. Onsite Clinic	Direct Impact: The lack of water management and maintenance of taps, toilets, basins etc. poses a risk to wastage of water.	Implementation of EMS:				
		(1) Development and implementation of water quality monitoring plan.	Compliant	Domestic water quality is monitored.	Sufficient	
5. Mining offices (construction and operation) i.e. operation of training centres, offices and kitchen facilities		(2) Create awareness of water conservation.	Not compliant	No awareness done on water conservation	Sufficient	
		On-site mitigation measures:				
		(1) Ensure that all taps and pipes are maintained to avoid spills or leaks.	Compliant	No leaks observed during the site visit.	Sufficient	
		(2) Monitor water use and ensure that areas of waste are identified and minimised.	Partially compliant	Water usage monitored. No areas identified to conserve water.	Sufficient	
		(3) Repair identified leaks and address issues of water wastage as soon as these are identified.	Partially compliant	No leaks observed. No water conservation or awareness thereon.	Sufficient	
		(4) Where possible reuse water on site for dust suppression.	Not compliant	Water for dust suppression not reused water.	Sufficient	
		Compliance with standards:				
		(1) Develop and implement a water usage record keeping procedure.	Compliant	Water usage recorded.	Sufficient	
		(2) Develop and implement a infrastructure maintenance programme to include frequent inspections of water pipes and taps.	Partially compliant	No leaks observed. Infrastructure checked regularly. No record keeping.	Sufficient	
Chemical fire						
Construction						
Chemical fires						
9.Stores, workshops & wash bays	Direct Impact: The improper storage of hazardous substances poses a risk of chemical fires. In	Implementation of EMS:				
		(1) Develop and implement a Hazardous substances management plan.	Compliant	Hazardous substance controls are implemented, and a procedure is available.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
11. Fuel operating power generators	the event of a chemical fire the impact to the surrounding environment is significant. Fires may lead to the loss of ecosystems, damage to properties and fatalities.	(2) Develop an emergency procedure addressing in particular the management of chemical fires and spill response.	Partially compliant	An emergency procedure is available and addresses fire response. The procedure however lack sufficient detail on hazchem emergencies such as spills.	Sufficient	
		(3) Report and record all incidents related to chemical fires.	Compliant	Incident reporting procedures are available. No incidents of chemical fires have occurred to date.	Sufficient	
13. Fuel storage		(4) Employees must be trained on emergency response procedures required to counter the nature and hazards of an accidental release.	Not compliant	Regular drills on emergencies are not conducted. The emergency procedure has been signed by all employees.	Sufficient	
		(5) Employees must be familiar with and have received the appropriate training regarding the handling and storage practices, for all containers with which they will come into contact.	Partially compliant	No records of training on hazchem handling were provided although awareness of the correct handling could be provided through visual observations and interviews with the employees.	Sufficient	
		(6) Document the types and amounts of hazardous materials present on the project site (including for example the name and description, classification, regulatory reporting threshold, quantities, characteristics, analysis of potential consequence, identification of location, details of responsible persons, detail of availability of spill response equipment etc.).	Partially compliant	No hazchem register available although stock control is taking place informally.	Sufficient	
		(7) The emergency response procedure should describe response activities in the event of a spill, release, or other chemical emergency and include the internal and external notification procedure, specific responsibilities of individuals or groups, decision process for assessing severity of the release, and determining appropriate actions, facility evacuation routes, and post event activities such as clean-up and disposal, incident investigation, employee re-entry, and restoration of spill response equipment.	Not compliant	An emergency procedure is available and addresses fire response. The procedure however lack detail on hazchem emergencies such as spills.	Sufficient	
		(8) Procedures should be prepared for informing the public and emergency response agencies, documenting first aid and emergency medical treatment, taking emergency response actions, reviewing and updating the emergency response plan to reflect changes, and using, inspecting, testing, and maintaining the emergency response equipment.	Not compliant	An emergency procedure is available and addresses fire response. The procedure however lack detail on hazchem emergencies such as spills.	Sufficient	
		(9) Ensuring corrective and preventative actions are taken to address nonconformities.	Not compliant	Some non-conformities were observed that were not addressed.	Sufficient	
		(10) Communicating findings of concern to I&AP.	Partially compliant	This audit will go through a public participation process.	Sufficient	
			On-site mitigation measures:			

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(1) Reactive, flammable, and explosive materials must be managed to avoid uncontrolled reactions or conditions resulting in fire or explosion.	Compliant	A hazchem store is available with sufficient ventilation and fire response equipment. No incompatible materials were stored together at the time of the audit.	Sufficient	
		(2) Ensure storage of incompatible materials (acids, basis, flammables, oxidisers, reactive chemical) in separate areas, and with containment facilities separating material storage areas.	Compliant	No incompatible materials were stored together at the time of the audit.	Sufficient	
		(3) Ensure the provision of material-specific storage for extremely hazardous or reactive materials.	Not applicable	No extremely reactive or hazardous material on site.	Sufficient	
		(4) Ensure the use of flame arresting devices on vents from flammable storage containers.	Compliant	A hazchem store is available with sufficient ventilation and fire response equipment.	Sufficient	
		(5) Ensure the provision of grounding and lightning protection.	Not compliant	No lightning protection or grounding observed during the audit.	Sufficient	
		(6) Ensure the storage of hazardous materials in an area of the facility separated from the main authorised activities.	Compliant	The hazchem store was entirely isolated from all the other buildings and activities.	Sufficient	
		(7) Ensure that all personnel that use or handle hazardous materials are trained in the use and potential dangers of the materials.	Partially compliant	No records of training on hazchem handling were provided although awareness of the correct handling could be provided through visual observations and interviews with the employees.	Sufficient	
		(8) Implement all measures detailed in the spill prevention procedure in the event of a spill.	Partially compliant	Absorbents were observed and used. The spills that have been treated with absorbent has however been left unattended and should be cleaned immediately and removed to a hazardous waste bin.	Sufficient	
		(9) Prevent uncontrolled releases of hazardous materials to the environment or uncontrolled reactions that might result in fire or explosion using engineering controls (containment, automatic alarms, and shut-off systems) commensurate with the nature of hazard.	Compliant	No uncontrollable release of hazardous substances that could cause fires or explosions have been observed. Sufficient preventions have been put in place to prevent this from happening.	Sufficient	
		(10) Implement management controls (procedures, inspections, communications, training, and drills) to address residual risks that have not been prevented or controlled through engineering measures.	Partially compliant	The bundwalls and other measures are residual measures. Some residual measures can still be implemented.	Sufficient	
		(11) Store all hazardous (reactive, flammable, corrosive and toxic) materials in clearly identified, fit-for-purpose containers or vessels.	Compliant	Hazchems stored in appropriate containers.	Sufficient	
		(12) Chemical products must be secured when not needed to prevent tampering and vandalism.	Partially compliant	Hazchem stores are not secured (closed, lockable) although the containers are securely sealed.	Sufficient	
		(13) Provide warning notices, firefighting facilities and protection from weather damage.	Compliant	Warning notices displayed, firefighting facilities are available, and roofs are installed for weather protection.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(14) Each shift supervisor or safety officer is to report on the integrity of the hazardous material storage.	Partially compliant	The hazchem store is regularly checked but not after each shift as is required.	Sufficient	
		(15) Keep products in their original container (unless they are not re-sealable) with all stored products and containers being labelled, and original labels and MSDS retained.	Not compliant	The containers are not labelled and no MSDS's were provided/available.	Sufficient	
		(16) Label containers so that the hazard nature of the material is clear.	Not compliant	The containers are not kept in their original containers, with no labels.	Sufficient	
		(17) Obtain Material Safety Data Sheets (MSDS) for all chemicals before use and all materials must be handled according to the instructions.	Not compliant	No MSDS's were available at the time of the audit.	Sufficient	
		(18) Transporters of hazardous materials must ensure that the vehicle is suitable and registered for the purpose it is being used.	Compliant	Hazardous materials transported by OEM according to SABS standards for transportation of hazardous substances.	Sufficient	
		(19) Transport vehicles must display clear markings in English indicating the nature of the materials being carried, what to do in the event of an emergency, and an emergency telephone number (24 hour) of a responsible person who can provide advice in the event of an emergency.	Compliant	Hazardous materials transported by OEM according to SABS standards for transportation of hazardous substances.	Sufficient	
		(20) No combustible material (e.g. wood, rags, carton boxes, etc.) are to be kept in the presence of flammable liquids.	Partially compliant	Spills were cleaned in the hazchem store, but the absorbent were left unattended which could increase flammability/combustibility.	Sufficient	
		(21) "No Open Flames" and "No smoking" symbolic signs are to be displayed in the vicinity of the flammable liquid storage areas.	Compliant	No smoking/No open flames signs displayed at the hazchem and fuel storage areas.	Sufficient	
		(22) Flammable liquids are to be issued only on a need-to-use-basis and strict control is to be exercised to ensure that persons do not draw more than what is needed for the specific job.	Compliant	Fuel are issued as required by fuelling directly into the machines that uses it.	Sufficient	
		(23) All cables are to be grounded as appropriate.	Compliant	Cables are appropriately grounded.	Sufficient	
		(24) An adequate number (according to safety regulations) and type of firefighting equipment is to be available in the close vicinity of the flammable liquid store.	Compliant	Firefighting equipment is available close to the facility.	Sufficient	
		(25) Flammable liquid stores are to be well ventilated and free of explosive vapours.	Compliant	Flammable liquid stores are effectively ventilated.	Sufficient	
		(26) Flammable liquid containers in stores are to be clearly marked or labelled as to their contents.	Not compliant	Containers observed did not have labels.	Sufficient	
		(27) Locations are to support MSDS information and handling/storage instructions.	Compliant	Hazchem storage largely complies with the MSDS specifications	Sufficient	
		(28) Flammable liquid tanks are to be properly earthed in order to prevent static electricity accumulating.	Compliant	Earthing were done on the fuel tanks.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(29) Drainage points on flammable liquid tanks are to be provided with threaded caps or blanking plates.	Compliant	Drainage points provided with blanking plates and threaded caps.	Sufficient	
		(30) Bund walls are to surround storage tanks containing flammable liquids and these must be able to contain the entire volume of the contents plus 10% in case of spillage.	Compliant	Bund walls provided with +10% capacity.	Sufficient	
		(31) Earthing is to be tested regularly (according to safety regulations).	Not compliant	It could not be verified whether testing is done regularly.	Sufficient	
		Legal requirements:				
		(1) Bulk storage facilities of flammable liquids to be approved by the provincial fire inspector.	Not compliant	No approval from the fire department provided.	Sufficient	
		(2) Section 30 of the National Environmental Management Act (NEMA), Act 107 of 1998 describes measures to be taken to control emergency incidents. These requirements should be included in the development of the Emergency Response procedure.	Not compliant	Section 30 measures provided in NEMA could not be verified in the emergency procedure.	Sufficient	
		(3) Section 20 of the National Water Act 36 of 1998 describes the procedure for the control of incidents involving Hazardous substances. These requirements should also be included in the Emergency response procedure.	Not compliant	Section 20 measures provided in NWA could not be verified in the emergency procedure.	Sufficient	
		(4) GN R. 1237 published under the Mine Health and Safety Act of 1996 describes the requirements for the storage of hazardous substances. These requirements should be incorporated into the Hazardous substances management plan.	Partially compliant	Some of these measures are provided in the emergency procedure but not all.	Sufficient	
		(5) Section 21 of the Mine Health and safety Act of 1996 describes the requirements for the acquisition of Hazardous chemicals. These requirements should be considered as part of the mine acquisition process.	Not applicable	These considerations do not form part of the procurement process.	Sufficient	
		(6) Regulation 277, 273, and 279 of GN R. 225 of the National Road traffic Act of 1996 describes the requirements of transporting hazardous waste. These requirements should be incorporated in both the Hazardous substances management plan and the Waste Management plan.	Not compliant	No hazardous substances management plan or Waste management plan.	Sufficient	
		(7) Regulation 277 and 273 of GN R. 225 of the National Road traffic Act of 1996 describes the Loading and offloading of dangerous goods. These requirements should be addressed in the Hazardous substances management plan.	Not compliant	No hazardous substances management plan or Waste management plan.	Sufficient	
		(8) All requirements described in the Hazardous substance Act of 1973 should be included in the Hazardous substances management plan.	Not compliant	No hazardous substances management plan or Waste management plan.	Sufficient	
		(9) The storage of hazardous substances must be in compliance with regulation 4 of GN R. 704 of the National Environmental Management Act.	Compliant	Hazchem storage largely complies with the NEMA requirements.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(10) Requirements stipulated in SANS 10089-1:2008 (above ground storage facilities for petroleum products) must be incorporated into the Hazardous Substance Management plan and be implemented on site.	Not compliant	No hazardous substances management plan.	Sufficient	
		(11) Requirements stipulated by SANS 301: 2011 (Storage tank facilities for hazardous chemicals) must be incorporated into the Hazardous Substance Management plan and be implemented.	Partially compliant	No hazardous substances management plan but the hazchem facilities are largely compliant with SANS 301:2011 requirements	Sufficient	
		Compliance to standards:				
		(1) Develop and implement a fire prevention plan that includes measures of prevention and response to chemical fires.	Compliant	A fire prevention plan is available.	Sufficient	
		(2) Develop an emergency preparedness procedure and include the process to be followed in case of a chemical fire.	Compliant	A emergency preparedness procedure is available.	Sufficient	
		(3) Develop a Hazardous substances management plan.	Not compliant	No hazardous substances management plan.	Sufficient	
		(4) Develop a frequent inspection programme to include inspections of hazardous substances storage facilities.	Partially compliant	Regular informal inspections are done but not recorded.	Sufficient	
Operation						
Chemical fires						
9.Stores, workshops &wash bays	Direct Impact: The improper storage of hazardous substances poses a risk of chemical fires. In the event of a chemical fire the impact to the surrounding environment is significant. Fires may lead to the loss of ecosystems, damage to properties and fatalities.	Implementation of EMS:				
		(1) Develop and implement a Hazardous substances management plan.	Compliant	Hazardous substance controls are implemented and a procedure is available.	Sufficient	
11. Fuel operating power generators		(2) Develop an emergency procedure addressing in particular the management of chemical fires and spill response.	Partially compliant	An emergency procedure is available and addresses fire response. The procedure however lack sufficient detail on hazchem emergencies such as spills.	Sufficient	
		(3) Report and record all incidents related to chemical fires.	Compliant	Incident reporting procedures are available. No incidents of chemical fires have occurred to date.	Sufficient	
13. Fuel storage		(4) Employees must be trained on emergency response procedures required to counter the nature and hazards of an accidental release.	Not compliant	Regular drills on emergencies are not conducted. The emergency procedure has been signed by all employees.	Sufficient	
		(5) Employees must be familiar with and have received the appropriate training regarding the handling and storage practices, for all containers with which they will come into contact.	Partially compliant	No records of training on hazchem handling were provided although awareness of the correct handling could be provided through visual observations and interviews with the employees.	Sufficient	
		(6) Document the types and amounts of hazardous materials present on the project site (including for example the name and description, classification, regulatory reporting threshold, quantities, characteristics, analysis of potential consequence, identification of location, details of responsible persons, detail of availability of spill response equipment etc.).	Partially compliant	No hazchem register available although stock control is taking place informally.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(7) The emergency response procedure should describe response activities in the event of a spill, release, or other chemical emergency and include the internal and external notification procedure, specific responsibilities of individuals or groups, decision process for assessing severity of the release, and determining appropriate actions, facility evacuation routes, and post event activities such as clean-up and disposal, incident investigation, employee re-entry, and restoration of spill response equipment.	Not compliant	An emergency procedure is available and addresses fire response. The procedure however lack detail on hazchem emergencies such as spills.	Sufficient	
		(8) Procedures should be prepared for informing the public and emergency response agencies, documenting first aid and emergency medical treatment, taking emergency response actions, reviewing and updating the emergency response plan to reflect changes, and using, inspecting, testing, and maintaining the emergency response equipment.	Not compliant	An emergency procedure is available and addresses fire response. The procedure however lack detail on hazchem emergencies such as spills.	Sufficient	
		(9) Ensuring corrective and preventative actions are taken to address nonconformities.	Not compliant	Some non-conformities were observed that were not addressed.	Sufficient	
		(10) Communicating findings of concern to I&AP.	Partially compliant	This audit will go through a public participation process.	Sufficient	
		On-site mitigation measures:				
		(1) Reactive, flammable, and explosive materials must be managed to avoid uncontrolled reactions or conditions resulting in fire or explosion.	Compliant	A hazchem store is available with sufficient ventilation and fire response equipment. No incompatible materials were stored together at the time of the audit.	Sufficient	
		(2) Ensure storage of incompatible materials (acids, basis, flammables, oxidisers, reactive chemical) in separate areas, and with containment facilities separating material storage areas.	Compliant	No incompatible materials were stored together at the time of the audit.	Sufficient	
		(3) Ensure the provision of material-specific storage for extremely hazardous or reactive materials.	Not applicable	No extremely reactive or hazardous material on site.	Sufficient	
		(4) Ensure the use of flame arresting devices on vents from flammable storage containers.	Compliant	A hazchem store is available with sufficient ventilation and fire response equipment.	Sufficient	
		(5) Ensure the provision of grounding and lightning protection.	Not compliant	No lightning protection or grounding observed during the audit.	Sufficient	
		(6) Ensure the storage of hazardous materials in an area of the facility separated from the main authorised activities.	Compliant	The hazchem store was entirely isolated from all the other buildings and activities.	Sufficient	
		(7) Ensure that all personnel that use or handle hazardous materials are trained in the use and potential dangers of the materials.	Partially compliant	No records of training on hazchem handling were provided although awareness of the correct handling could be provided through visual observations and interviews with the employees.	Sufficient	
		(8) Implement all measures detailed in the spill prevention procedure in the event of a spill.	Partially compliant	Absorbents were observed and used. The spills that have been treated with absorbent has however been left unattended and should be cleaned immediately and removed to a hazardous waste bin.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(9) Prevent uncontrolled releases of hazardous materials to the environment or uncontrolled reactions that might result in fire or explosion using engineering controls (containment, automatic alarms, and shut-off systems) commensurate with the nature of hazard.	Compliant	No uncontrollable release of hazardous substances that could cause fires or explosions have been observed. Sufficient preventions have been put in place to prevent this from happening.	Sufficient	
		(10) Implement management controls (procedures, inspections, communications, training, and drills) to address residual risks that have not been prevented or controlled through engineering measures.	Partially compliant	The bundwalls and other measures are residual measures. Some residual measures can still be implemented.	Sufficient	
		(11) Store all hazardous (reactive, flammable, corrosive and toxic) materials in clearly identified, fit-for-purpose containers or vessels.	Compliant	Hazchems stored in appropriate containers.	Sufficient	
		(12) Chemical products must be secured when not needed to prevent tampering and vandalism.	Partially compliant	Hazchem stores are not secured (closed, lockable) although the containers are securely sealed.	Sufficient	
		(13) Provide warning notices, firefighting facilities and protection from weather damage.	Compliant	Warning notices displayed, firefighting facilities are available, and roofs are installed for weather protection.	Sufficient	
		(14) Each shift supervisor or safety officer is to report on the integrity of the hazardous material storage.	Partially compliant	The hazchem store is regularly checked but not after each shift as is required.	Sufficient	
		(15) Keep products in their original container (unless they are not re-sealable) with all stored products and containers being labelled, and original labels and MSDS retained.	Not compliant	The containers are not labelled and no MSDS's were provided/available.	Sufficient	
		(16) Label containers so that the hazard nature of the material is clear.	Not compliant	The containers are not kept in their original containers, with no labels.	Sufficient	
		(17) Obtain Material Safety Data Sheets (MSDS) for all chemicals before use and all materials must be handled according to the instructions.	Not compliant	No MSDS's were available at the time of the audit.	Sufficient	
		(18) Transporters of hazardous materials must ensure that the vehicle is suitable and registered for the purpose it is being used.	Compliant	Hazardous materials transported by OEM according to SABS standards for transportation of hazardous substances.	Sufficient	
		(19) Transport vehicles must display clear markings in English indicating the nature of the materials being carried, what to do in the event of an emergency, and an emergency telephone number (24 hour) of a responsible person who can provide advice in the event of an emergency.	Compliant	Hazardous materials transported by OEM according to SABS standards for transportation of hazardous substances.	Sufficient	
		(20) No combustible material (e.g. wood, rags, carton boxes, etc.) are to be kept in the presence of flammable liquids.	Partially compliant	Spills were cleaned in the hazchem store, but the absorbent were left unattended which could increase flammability/combustibility.	Sufficient	
		(21) "No Open Flames" and "No smoking" symbolic signs are to be displayed in the vicinity of the flammable liquid storage areas.	Compliant	No smoking/No open flames signs displayed at the hazchem and fuel storage areas.	Sufficient	
		(22) Flammable liquids are to be issued only on a need-to-use-basis and strict control is to be exercised to ensure that persons do not draw more than what is needed for the specific job.	Compliant	Fuel are issued as required by fuelling directly into the machines that uses it.	Sufficient	
		(23) All cables are to be grounded as appropriate.	Compliant	Cables are appropriately grounded.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(24) An adequate number (according to safety regulations) and type of firefighting equipment is to be available in the close vicinity of the flammable liquid store.	Compliant	Firefighting equipment is available close to the facility.	Sufficient	
		(25) Flammable liquid stores are to be well ventilated and free of explosive vapours.	Compliant	Flammable liquid stores are effectively ventilated.	Sufficient	
		(26) Flammable liquid containers in stores are to be clearly marked or labelled as to their contents. .	Not compliant	Containers observed did not have labels.	Sufficient	
		(27) Locations are to support MSDS information and handling/storage instructions	Compliant	Hazchem storage largely complies with the MSDS specifications	Sufficient	
		(28) Flammable liquid tanks are to be properly earthed in order to prevent static electricity accumulating.	Compliant	Earthing were done on the fuel tanks.	Sufficient	
		(29) Drainage points on flammable liquid tanks are to be provided with threaded caps or blanking plates.	Compliant	Drainage points provided with blanking plates and threaded caps.	Sufficient	
		(30) Bund walls are to surround storage tanks containing flammable liquids and these must be able to contain the entire volume of the contents plus 10% in case of spillage.	Compliant	Bundwalls provided with +10% capacity.	Sufficient	
		(31) Earthing is to be tested regularly (according to safety regulations).	Not compliant	It could not be verified whether testing is done regularly.	Sufficient	
	<u>Legal requirements:</u>					
		(1) Bulk storage facilities of flammable liquids to be approved by the provincial fire inspector.	Not compliant	No approval from the fire department provided.	Sufficient	
		(2) Section 30 of the National Environmental Management Act (NEMA), Act 107 of 1998 describes measures to be taken to control emergency incidents. These requirements should be included in the development of the Emergency Response procedure.	Not compliant	Section 30 measures provided in NEMA could not be verified in the emergency procedure.	Sufficient	
		(3) Section 20 of the National Water Act 36 of 1998 describes the procedure for the control of incidents involving Hazardous substances. These requirements should also be included in the Emergency response procedure.	Not compliant	Section 20 measures provided in NWA could not be verified in the emergency procedure.	Sufficient	
		(4) GN R. 1237 published under the Mine Health and Safety Act of 1996 describes the requirements for the storage of hazardous substances. These requirements should be incorporated into the Hazardous substances management plan.	Partially compliant	Some of these measures are provided in the emegency procedure but not all.	Sufficient	
		(5) Section 21 of the Mine Health and safety Act of 1996 describes the requirements for the acquisition of Hazardous chemicals. These requirements should be considered as part of the mine acquisition process.	Not applicable	These considerations do not form part of the procurement process.	Sufficient	
		(6) Regulation 277, 273, and 279 of GN R. 225 of the National Road traffic Act of 1996 describes the requirements of transporting hazardous waste. These requirements should be incorporated in both the Hazardous substances management plan and the Waste Management plan.	Not compliant	No hazardous substances management plan or Waste managemeng plan.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(7) Regulation 277 and 273 of GN R. 225 of the National Road traffic Act of 1996 describes the Loading and offloading of dangerous goods. These requirements should be addressed in the Hazardous substances management plan.	Not compliant	No hazardous substances management plan or Waste management plan.	Sufficient	
		(8) All requirements described in the Hazardous substance Act of 1973 should be included in the Hazardous substances management plan.	Not compliant	No hazardous substances management plan or Waste management plan.	Sufficient	
		(9) The storage of hazardous substances must be in compliance with regulation 4 of GN R. 704 of the National Environmental Management Act.	Compliant	Hazchem storage largely complies with the NEMA requirements.	Sufficient	
		(10) Requirements stipulated in SANS 10089-1:2008 (above ground storage facilities for petroleum products) must be incorporated into the Hazardous Substance Management plan and be implemented on site.	Not compliant	No hazardous substances management plan.	Sufficient	
		(11) Requirements stipulated by SANS 301: 2011 (Storage tank facilities for hazardous chemicals) must be incorporated into the Hazardous Substance Management plan and be implemented.	Partially compliant	No hazardous substances management plan but the hazchem facilities are largely compliant with SANS 301:2011 requirements	Sufficient	
	Compliance to standards:					
		(1) Develop and implement a fire prevention plan that includes measures of prevention and response to chemical fires.	Compliant	A fire prevention plan is available.	Sufficient	
		(2) Develop an emergency preparedness procedure and include the process to be followed in case of a chemical fire.	Compliant	A emergency preparedness procedure is available.	Sufficient	
		(3) Develop a Hazardous substances management plan.	Not compliant	No hazardous substances management plan.	Sufficient	
		(4) Develop a frequent inspection programme to include inspections of hazardous substances storage facilities.	Partially compliant	Regular informal inspections are done but not recorded.	Sufficient	
Traffic						
31. Bulk transporting of Ore to market on Public roads		Implementation of EMS:				
		(1) Develop and implement a traffic management plan.	Not compliant	No traffic management plan	Sufficient	
		On-site mitigation measures:				
		(1) Access roads should be planned so that only minimum linear distances are developed.	Compliant	Access roads are as short as possible.	Sufficient	
		(2) All storm water control mechanisms to be maintained.	Partially compliant	Storm water on the roads were controlled	Sufficient	
		(3) Clean and repair any damages caused by the haul vehicles to public or private roads.	Partially compliant	It is assumed that this refers only to the immediate vicinity of the operation, where the operation's road enter the tar road.	Sufficient	
		(4) All incidents related to traffic resulting from the authorised activities should be documented and kept in the safety records.	Compliant	All traffic incidents within the operation are recorded as safety incidents.	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(5) Haulage of ROM product should preferably be scheduled off-peak hour traffic times.	Compliant	Haulage of RoM is done off-peak hour.	Sufficient	
		(6) Allow for safe pedestrian crossings where necessary.	Not applicable	Pedestrian crossing not required.	Sufficient	
		(7) Traffic calming measures must be implemented in consultation with the provincial traffic department.	Not compliant	No traffic calming measures implemented.	Sufficient	
		(8) Traffic calming measures will be required at points indicated by the Traffic assessment report (Attached as Appendix P).	Not compliant	No traffic calming measures implemented.	Sufficient	
		(9) Warning signs must be placed on and around the site as per the Occupational, Health and Safety act requirements.	Compliant	Warning signs placed at the main road to the site.	Sufficient	
		(10) Clearly indicate which activities are to be taken place within which areas of the site using demarcation and/or signage.	Compliant	Signs placed at the main road to the site.	Sufficient	
		(11) All incidents should be reported to the appointed Health and Safety officer/Manager, investigated, documented, and kept in a safety file (digital or hardcopy).	Compliant	All traffic incidents within the operation are recorded as safety incidents.	Sufficient	
		(12) Traffic warning signage must be erected where applicable, along transport routes and access roads.	Compliant	Warning signs placed at the main road and haulage roads at the mining area.	Sufficient	
		(13) All access roads shall be properly marked.	Compliant	Signs placed at the main road to the site.	Sufficient	
		(14) Markers shall show the direction of travel.	Compliant	Direction of travel indicated in signs.	Sufficient	
		(15) Roads not being used shall be marked with a "No Entry" sign.	Compliant	No entry signs placed at roads that is not being used.	Sufficient	
		(16) Position security lighting so that it does not pose a nuisance to residential properties or tourist facilities or a danger to road users.	Compliant	Security lighting placed as such that it doesn't affect road users or nearby residents	Sufficient	
		(17) Warning barricading should be placed around open excavations and should be suitable for varying weather conditions.	Compliant	Barricading was observed around open areas. The open mining pits has warning signs.	Sufficient	
		Specialist recommendations:				
		(1) Turning the R555 / D1261 intersection from a four way stop control to two-way priority stop control, with priority on the R555 (refer to the drawings provided as Appendix A Figure 10 in the Traffic Impact Assessment report attached as Appendix P).	Compliant	This is already available at the R555/D1261 intersection.	Sufficient	
		(2) Providing for exclusive turning lanes on the D1261 / Access to the mine intersection.	Partially compliant	Gravel turning lanes are available at the mine turnoff, but no tar turning lanes with signs or markers.	Sufficient	
		(3) Provision of lighting of sufficient standards at the intersection of the D2161 / Access Road to the BCR Chrome Mine.	Not compliant	No lighting observed at the turnoff.	Sufficient	
		(4) Construction / paving (at least 400 m) of the existing access road to the proposed BCR Chrome Mine site east of the D1261 to prevent weathering on the edges of the D1261.	Not compliant	Access road at turnoff still gravel	Sufficient	

ACTIVITY	DESCRIPTION OF ENVIRONMENTAL RISK (Direct and indirect impact)	Mitigation Method	Compliance	Verification / Comments	Sufficiency	Recommendations / comments
		(5) Provision of road signage and road markings.	Compliant	Road signage and marking available.	Sufficient	
		(6) No on-street pick up/drop offs at the D1261 Road / Access to mine intersection should be allowed (drop-offs / pickup should be done on site).	Compliant	No on-street drop offs observed during the audit.	Sufficient	
		(7) Parking provision should be done for trucks to prevent queuing on the national roads and the D1261.	Compliant	Parking is available along the access road to prevent queuing.	Sufficient	
		Human Health Aspects-				
		The following measures must be taken to improve road safety:				
		(1) Establish and maintain pictorial road-safety signage in local language and English language (if needed);	Compliant	Signs displayed and observed during the audit.	Sufficient	
		(2) clearly demarcated pedestrian crossings in appropriate places;	Not applicable	No pedestrian crossing allowed and observed on site.	Sufficient	
		(3) descriptions along project roadways directly surrounding project facilities, including conveyor-belt routes if applicable, roadway rerouting areas, heavy equipment crossing areas, etc.	Compliant	Signs displayed and observed during the audit.	Sufficient	
		(4) Regular vehicle maintenance;	Compliant	Vehicle maintenance done by dedicated maintenance team.	Sufficient	
		(5) adequately trained drivers; and	Compliant	Trained and licenced operators are used as drivers	Sufficient	
		(6) Adherence to speed limit, tracking of vehicles.	Compliant	Speed limits available and implemented on hauling roads.	Sufficient	
		Compliance with standards:				
		(1) Develop and implement a traffic management plan.	Partially compliant	The specialist traffic report is the currently available traffic management plan. Other standards are available for road safety.	Sufficient	
		(2) Develop and implement a Public Complaints procedure.	Compliant	Channels are available to receive external complaints. A stakeholder engagement officer is permanently on site to attend to stakeholder issues.	Sufficient	

Table 3: Closure and annual rehab plan checklist

No.	Commitment	Compliance	Verification / Comments
	General activities from prospecting to new activities		
	Avoid where possible:		

No.	Commitment	Compliance	Verification / Comments
1	All vegetation and habitats with high sensitivity, including large fluvial systems	Partially compliant	Activities are largely within the ESU and not the CBA's. Some of the site however falls in an area that is defined in the biodiversity specialist report as high biodiversity importance. These activities were part of the approved footprint and were kept as small as possible. During the audit, however, a 3-4ha landing strip was built outside of what was approved footprint and could have been avoided.
	Minimise:		
2	Clearing of high indigenous shrubs and large trees outside the approved mining areas must be kept to the lowest number possible, regardless of species/ protection status.	Not compliant	A 3-4ha landing strip was built that falls outside of the approved footprint.
3	Components of the proposed mining activities that may under no circumstance be located in or within 100 m of any drainage or other fluvial system would include:	Compliant	None of the below activities fall in or within 100m of the drainage lines.
4	- Man-camps and/or ablution facilities.	Compliant	
5	- Any form of waste/soil/overburden disposal or storage.	Compliant	
6	- Any form of storage of materials or machinery.	Compliant	
7	Any infrastructure that will be sensitive to inundation in case of an extreme (rainfall) event	Not compliant	A 3-4ha landing strip was built that falls outside of the approved footprint and crosses 2 drainage lines.
8	Undertake pre-clearing walkthrough survey, carried out by a suitably qualified specialist, of the footprint area (including mining areas, safety berms and other areas to be cleared) for protected flora and burrowing terrestrial fauna:	Not compliant	No pre-clearing walkthrough has been conducted
9	The final footprint investigation (walkthrough) is aimed to fully inform the Project Company, responsible conservation authority (that will issue the relevant permits and authorisations), contractors, EO and ECO about:	Not applicable	Noted. No walkthrough conducted. See action 8
10	Protected and red data and protected species that will be affected by the development and for which permits need to be obtained for clearing and/or relocation.	Not applicable	Noted. No walkthrough conducted. See action 8
11	- indicating the red-data and protection status of each species observed,	Not applicable	Noted. No walkthrough conducted. See action 9
12	- Location of protected plant species within the footprint area – either individually mapped or approximate areas of occurrence, especially dense patches (alternatively, for linear structures, between which structures or other markers).	Not applicable	Noted. No walkthrough conducted. See action 10
13	- Identification of the affected species by providing a representative photo record that enables EO/ECOs and contractors to identify such plants.	Not applicable	Noted. No walkthrough conducted. See action 11
14	How many specimens per species may be affected –estimate based on random transect surveys.	Not applicable	Noted. No walkthrough conducted. See action 12
15	Which species can successfully and thus must be relocated, which and how many will have to be destroyed.	Not applicable	Noted. No walkthrough conducted. See action 13
16	Depending on the findings, some species may have to be maintained in an on-site nursery:		
17	- Plants that can be considered for rescue and included in subsequent rehabilitation programs are all desirable geophytes and indigenous succulents.	Not compliant	No on-site nursery is available, and no search and rescue were done
18	- Replanting should occur in spring to early summer once sufficient rains have fallen, in order to facilitate establishment.	Not compliant	No on-site nursery is available, and no search and rescue was done
19	All trenches, excavations, etc., through sensitive areas should be excavated carefully in order to minimise damage to surrounding areas and biodiversity.	Not applicable	This could not be effectively audited.
20	Any animals found within the active mining areas must be removed in a safe manner, unharmed, and placed in an area where the animal will be comfortable.	Compliant	Animals naturally left the activity areas. No animals were found on site that needed to be removed.
21	If the ECO or contractor is unable to assist in the movement of a fauna species, ensure a member of the conservation authorities assists with the translocation.	Not applicable	The operations advised the auditor that no animals were required for movement.

No.	Commitment	Compliance	Verification / Comments
22	All mammal, large reptiles and avifauna species found injured during mining operations will be taken to a suitably qualified veterinarian or rehabilitation centre to either be put down in a humane manner or cared for until it can be released again.	Not applicable	The operations advised the auditor that no mammals, large reptiles or avifauna were injured during the project.
23	No stockpiling of soils is envisaged, top soils on the currently mined slopes are very thin and due to the nature of the boulder slopes impossible to extract separately. However: Where feasible, BCR can remove the upper 15 – 25 cm of topsoil (although it may have a large component of rock fragments) from more level areas and apply these directly to areas that have been rehabilitated and landscaped to ensure all geophytes and soil seed resources are contained within and make out part of the rehabilitation process. e.g. if Phase 1 mining areas have already been partially re-filled and re-landscaped, and the Tubatse ore stockpile area needs to be cleared	Compliant	Small stockpiles of topsoil is available around the office area. All other areas have little to no topsoil for removal.
Annual rehabilitation expectations			
24	Waste rock/overburden will be retrieved to fill in any mined-out open pit area	Compliant	Waste rock/overburden is available to fill the mined-out open pit.
25	The area will then be reshaped to create a gently sloping, free-draining topography	Not applicable	No sloping has started yet as the mining area is still active. Some backfilling has started and would be done to fill the pits and create a >1:4 slope for rehabilitation.
26	- It is recommended that no smooth slope be created, but rather a broken slope resembling contour-berms in which runoff and soil resources, as well as wind-blown seed can accumulate	Not applicable	
27	- This will greatly facilitate the re-establishment of vegetation	Not applicable	
28	Re-vegetation should be initiated as soon as possible by following the Slope Revegetation Specification	Not compliant	Some areas can be re-vegetated at the time of the audit but has not commenced, such as the old stockpile areas near the landing strip.
29	ANNUAL expectations:		
30	- It is expected that every year between 1 - 2 ha of refilled pit as well as disused prospecting area will be rehabilitated	Partially compliant	No rehabilitation was done at the time of the audit. Some backfilling has started at the main pit.
31	- The approximate measurements of mining area to be rehabilitated will have to be measured by a reviewer or the mine annually	Not compliant	No measurements or annual rehabilitation planning are currently undertaken.
32	- This needs to be done during the onset of winter, so that landscaping can be undertaken and completed before the onset of the rainy season, during which revegetation will have to be initiated	Not applicable	No annual rehab currently undertaken
33	- The first rehabilitated and re-vegetated slopes shall be monitored during the annual review i.t.o. the effectiveness of catching runoff and preventing erosion (i.e. soil features), as well as composition, cover and stability of newly established vegetation	Not applicable	No annual rehab currently undertaken
34	A detailed annual rehabilitation plan could not be devised at the time of the EIA process. However, general expectations on annual rehabilitation have been set and need to be reviewed and updated on an annual basis.	Not compliant	Annual rehabilitation requirements not updated annually.