



TRANS HEX OPERATIONS (PTY) LTD

ENVIRONMENTAL MANAGEMENT PROGRAMME PERFORMANCE ASSESSMENT REPORT

TRANS HEX- DE PUNT MINE

April 2019

DMR Ref: WC 30/5/2/3/1/47
WC 30/5/1/2/3/1/112
WC 30/5/2/3/1/314-321

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EXECUTIVE SUMMARY

Archean Resources, as independent environmental consultants, were appointed by Trans Hex Operations (Pty) Ltd, De Punt mine, to undertake the Environmental Management Programme performance assessment review required for the activities and operations authorised under the mining activities of Sea Concessions 11(a), 12(a) and 13(a) and corresponding surf-zones and admiralty strips, which was approved in March 2003 and was amended in 2005.

Environmental Performance Reporting is a requirement that a mining right holder has to adhere to, it is also a tool that allows the Competent Authority to keep track of the environmental issues on all environmental aspects at the mine. Environmental Performance Reporting is regarded as The Environmental Monitoring and Auditing Protocol (EM&AP) is part of the Integrated Environmental Management Series (IEMS), initiative to ensure that the organization has factored in all aspects of environmental management in its business functions either as a Developer and/ or Operator of schemes (Operations and Maintenance) with an impacting function on the environment or as a Regulator, with a management function, to control activities that may have an impact on the environment.

An environmental performance assessment is conducted at intervals throughout the life of the mining operation. The resultant performance assessment report will monitor the progress of the mining operation in terms of the approved Environmental Management Programme. It will also highlight additional impacts that have arisen and propose mitigation of these impacts. This will be conducted through the implementation of a system of corrective actions. The monitoring is required in order to give assurance to the DMR that the mining right granted activities are being responsibly conducted within the laid-out conditions.

De Punt has an existing EMPR which was approved in terms of the MPRDA in 2003 and updated in 2005, covering sea Concessions 11 (a) and 12 (a). Sea Concession 13 (a) EMP which also falls under De Punt Mine was approved on 20 March 2003. The De Punt operations are currently operating under the following mining rights:

- WC 30/5/2/3/1/47
- WC 30/5/1/2/3/1/112
- WC 30/5/2/3/1/314-321

Compliance monitoring aims to:

- Determine compliance with applicable laws, regulations, and mining conditions;
- Review and evaluate the activities of the authorised institution/company; and
- Determine whether conditions presenting imminent and substantial endangerment may exist.



Compliance monitoring consists of a wide range of activities in six basic categories which may overlap:

1. Surveillance - a pre-inspection activity to obtain general site information prior to entering the site;
2. Inspections may include record reviews, observations, sampling, interviews, etc., and may have different foci.
3. Investigations are more detailed inspections and may be needed if an inspection or record review suggests the potential for serious, widespread, and/or continuing violations.
4. Record reviews may be conducted at the regulator's offices, or at the site, and may or may not be combined with fieldwork.
5. Records may be derived from routine self-monitoring requirements; inspection reports or remote sensing.
6. Targeted information gathering may be used to provide or acquire more accurate information on the status of compliance and/or environmental conditions.

Remediation compliance monitoring of work required by regulation, permit, order or settlement includes ensuring timely submissions, review of submittals for adequacy and oversight of remedial activities.

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DEFINITION OF TERMS

Audit: A systematic, independent and documented review of operations and practises to ensure that relevant requirements are met. Qualified professionals with relevant auditing experience should conduct audits and, where possible, independent external auditors should also be used.

Audit Criteria: The set of policies, procedures, or requirements used as a reference during an audit.

Audit Evidence: Records, statements of fact, or other information that is relevant to the audit criteria and verifiable.

Audit Findings: Results of the evaluation of the collected audit evidence against audit criteria. Audit findings can indicate either conformity or non-conformity with audit criteria.

Appropriately qualified: A person who has training in the skills appropriate to the type of work to be done; and experience of the type of mine shaft and of the size, complexity and safety classification of the deposit or the environmental conditions (or both) pertaining to the specific project.

Corrective Action Plan: An action plan developed by the proponent, contractor, or facility owner and approved by the external auditor that describes how the contractor or facility owner intends to resolve the non-conforming item. The Corrective Action Plan should be specific, measurable, achievable, realistic, and timely.

Environmental Audit Report: A summary report prepared after an environmental audit that describes the attributes of the audit and the audit findings and conclusions.

Environmental Impact: A positive or negative condition that occurs to an environmental component as a result of the activity of a project or facility. This impact can be directly or indirectly caused by the project's different phases (i.e. Construction, Operation and Decommissioning).

Environmental management programme: A programme contemplated in section 39 of the Minerals Act, submitted to and approved by the Director: Mineral Development, and detailing the plan to be adopted and implemented by a mine for managing the environmental effects of the operations of the mine.

Hazard: The potential of a mine abandoned deposit to cause harm as a consequence of failure.

Non-conformance: Issues that are in direct non-compliance with the requirements of permits and or authorisations. All non-conformances require the development of a Correction Action Plan.

Operation: The time period that corresponds to any event, process, or activity that occurs during the Operation (i.e., fully functioning) phase of the proposed project or development. (The Operation phase follows the Construction phase, and then terminates when the project or development goes into the Decommissioning phase.)



Environmental Management Plan: A site-, project-, or facility-specific plan developed to ensure that environmental management practises to eliminate and control environmental impacts are followed during Commissioning and Operation phases.

Redundant: Permanently no longer required for mining operation.

DEFINITION OF ACRONYMS

EIA- Environmental Impact Assessment

EM&AP- Environmental Monitoring and Auditing Protocol

EMPR- Environmental Management Programme Report

EPE -Environmental Performance Evaluation

ESM&RS -Environmental Site Management and Rehabilitation Specifications

ISO- International Standards Organization

NEMA-National Environmental Management Act, No. 107 of 1998

1. INTRODUCTION

Archean Resources, as independent environmental consultants, were appointed by Trans Hex Operations (Pty) Ltd, De Punt mine, to undertake the Environmental Management Programme performance assessment review required for the activities and operations authorised under the mining activities of Sea Concessions 11(a), 12(a) and 13(a) and corresponding surf-zones and admiralty strips, which was approved in March 2003 and was amended in 2005. The De Punt operations are currently operating under the following mining rights:

- WC 30/5/2/3/1/47
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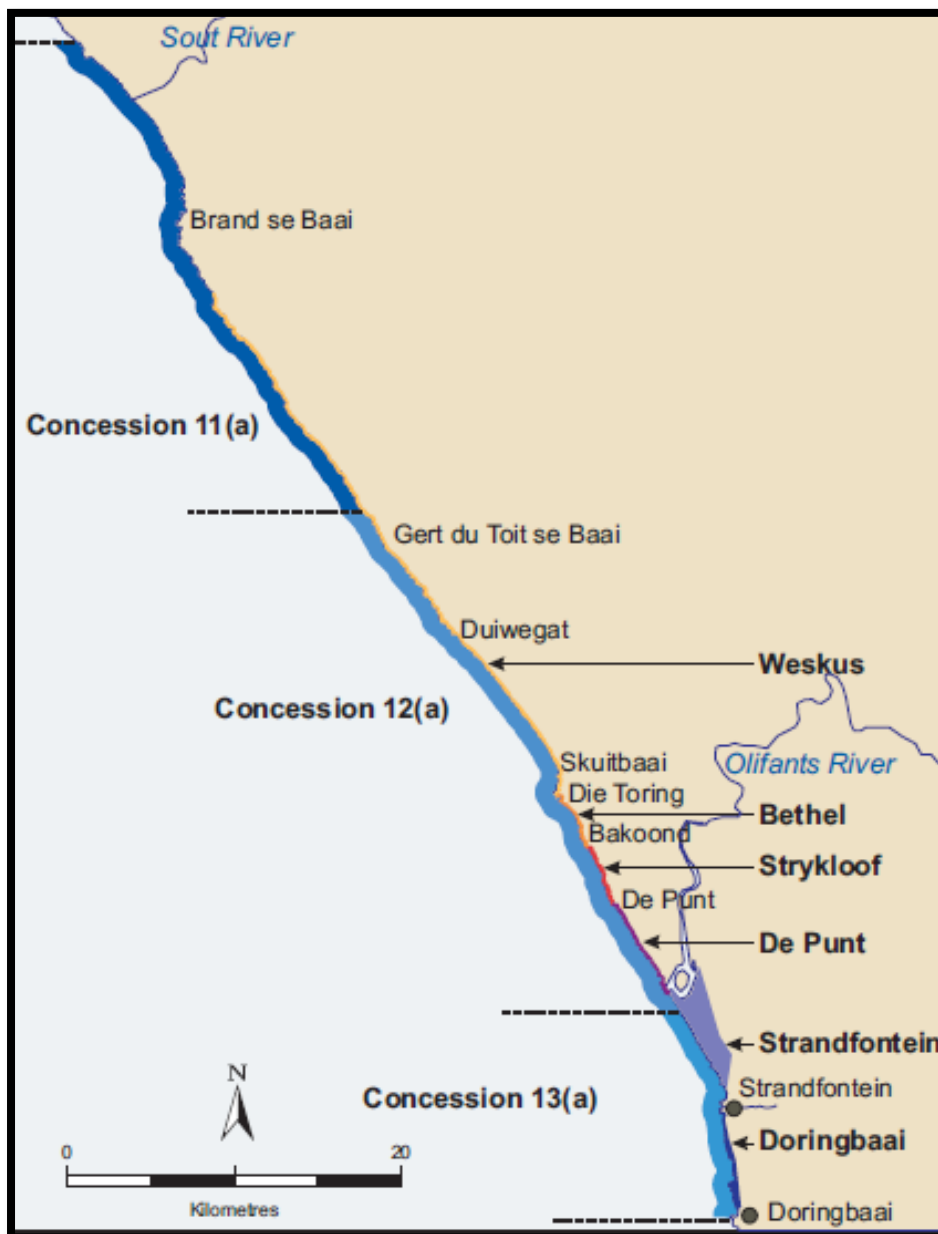


Figure 1: Map showing concessions 11(a), 12(a) and 13(a), and the associated surf-zone concessions and admiralty strips held by Trans Hex Operations (Pty) Ltd.



Figure 2: Locality Map

2. AUDIT SCOPE

The mining operation was approved in 2003 and an external compliance audit/assessment was conducted in May 2016. This audit forms part of the NEMA compliance and will review the corrective action plan and findings from the 2018 external audit, therefore this compliance performance assessment/audit will serve to verify compliance to the issued mining rights.

Conduct an Environmental Management Programme Performance Assessment by means of:

- Review of all existing environmental and relevant legal documentation including the Financial Provision Update and the Coastline Cliff Stability report compiled in 2018 by Site Pan;
- Environmental Management Programme Reports Myezo Environmental management Services – Trans Hex Operations (Pty) Ltd Environmental Management Programme Volume I-VI;
- Environmental Management Programme Report, 11a,12a and 13a and corresponding surf-zones and admiralty strips ;
- Previous Audits: Trans Hex Operations (Pty) Ltd (May 2016). External Environmental Performance Audit by Myezo Environmental Management Services;
- Discussions with the relevant environmental, health and safety, management and operational staff responsible for the De Punt Operations;
- Identification of the level of compliance to legislation and licensing requirements;
- Undertaking of a site visit to assess and compare the current activities with those described in the mining rights and the Environmental Management Programmes;
- Evaluation of current environmental management and mitigation measures on site to determine whether these are aligned and in accordance with the requirements and commitments of the EMPRs, as well as to the current acceptable practices; and
- Provision of recommendations for rectification for non-compliance and deficiencies.

3. AUDIT METHODOLOGY

3.1 Introduction

This audit report was prepared by Archean Resources, drawing entirely on the following sources of information:

- A site assessment;
- Facility inspections;
- Discussions with relevant role players; and
- Inspection of records and documentation pertaining to the operations of the activities on the Mine.

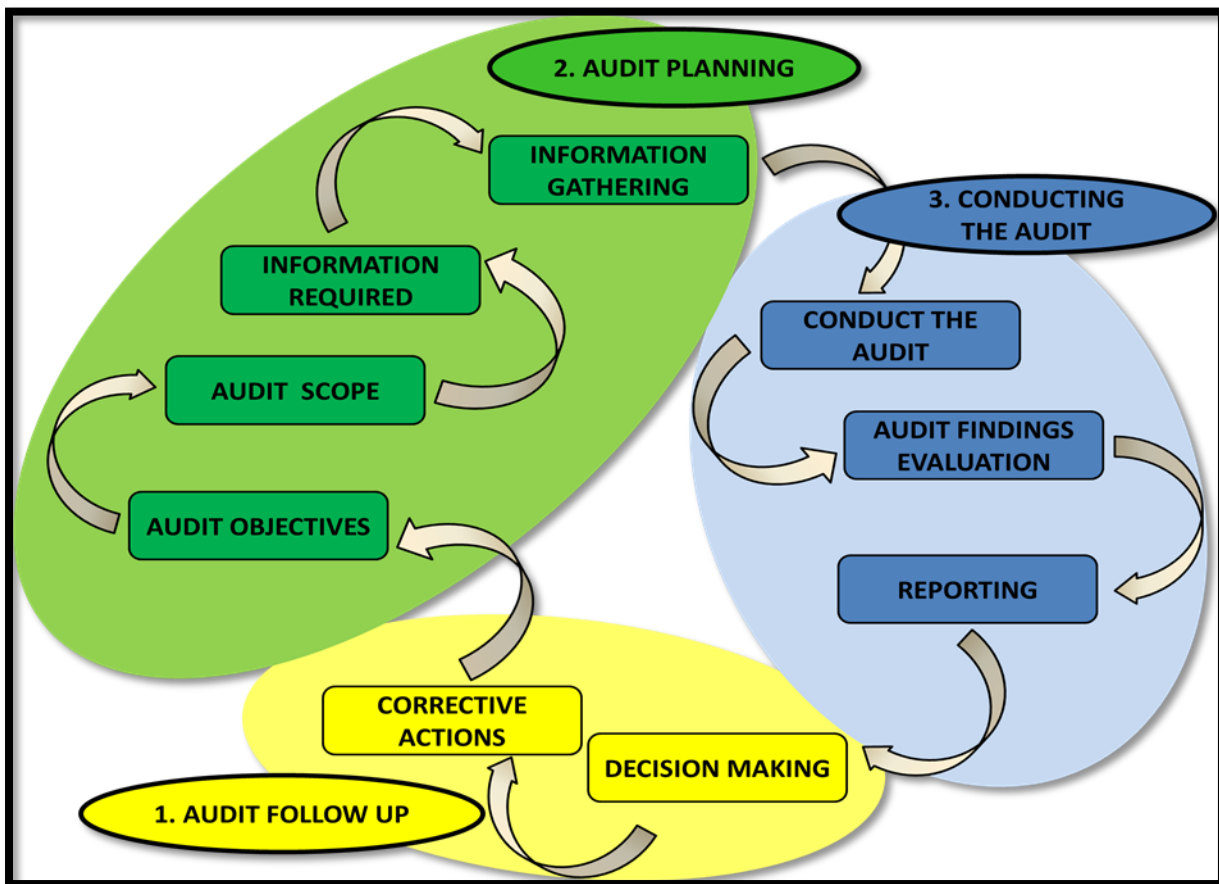


Figure 3: Audit Methodology Schematic Diagram

The documents, GIS and photographs were specifically for the purpose of auditing the compliance against the mining rights and associated EMPRs issued for the Mine area.

Each condition contained in the respective mining rights and associated EMPR's were rated in terms of compliance, with the below definitions being utilized:

Compliance (C):



The mine has fulfilled all requirements relevant to the conditions in the mining rights and associated EMPR's.

Non-compliance (NC):

The company is not in compliance with the conditions in mining rights and associated EMPR's, even though management plans are in place, capital has been set aside or designs are completed.

Not Applicable (N/A):

The condition in the license is not applicable to the company.

It is however important to note that although every effort is put into conducting a thorough audit, due to the time constraints for an audit, or the nature of activities viewed on the day of the audit, only a sample of the operations can be reasonably assessed.

3.2 Schedule

Table 1 below provides detail of the audit with regards to the scheduling and planning of the audit.

Table 1: Audit schedule

Audit period:	March 2019
Audit team:	Yvonne Gutoona – Environmental Assessment Practitioner Moses Mphephu – Field Assistant
Audit language:	English
Reference documents:	<ul style="list-style-type: none"> ➤ Financial Provision Update and the Coastline Cliff Stability report compiled in 2018 by Site Pan; ➤ Environmental Management Programme Reports Myezo Environmental management Services – Trans Hex Operations (Pty) Ltd Environmental Management Programme Volume I-VI; ➤ Environmental Management Programme Report, Trans Hex Operations LOR; ➤ Previous Audits: Trans Hex Operations (Pty) Ltd (May 2016). External Environmental Performance Audit by Myezo Environmental Management Services;

3.3 Data collection and verification

A number of documents were provided to the audit team and was verified where possible. For example, statements made by on-site staff were verified by reviewing relevant documentation and/or undertaking site inspections.

3.4 Disclaimer

Any observations, recommendations and actions taken from this report remain the responsibility of the client. Archean Resources (Pty) Ltd and authors of this report are protected from any legal action, possible loss, damage or liability resulting from the content of this report. This document is considered confidential and remains so unless requested by a court of law. Please only print this document if necessary.



4. PREVIOUS AND CURRENT AUDIT FINDINGS

4.1 Summary

From the site photographs, documentation review and discussions with relevant personnel, the overall compliance for the De Punt operations to the relevant conditions of the mining rights as well as the management measures contained in the corresponding Environmental Management Programmes is summarized as follows:

Previous audit findings	Comment	Previous status as observed during 2016 Audit	Current status as observed during 2019 Audit
Oil spillages at the wash bay	Clean up the wash bay and remove all contaminated soil to the soil farm.	No active use of the wash bay at the moment.	The wash bay was not in active use
The buffer zone has to be then re-delineated and re-communicated to the contractor involved and all relevant personnel. However, notices were given to contractors and public informing them about the 5 m buffer zone on 05 March 2009. This communication needs to be on-going and the effective thereof are monitored.	The remedial action would be to clean up/rehabilitate the damaged areas which are used as vehicle access/driving path to the beach mining activity within the buffer zone. Clean up the beaches and delineate current parking areas The Notice to abide with 5 m buffer zone need to be updated.	All the old equipment was removed.	The buffer zone is being adhered to. However, there was a cliff collapse and a Cliff stability report was submitted to the DMR detailing the potential causes of the collapse and the remediation implemented.
The operations Manager's role has been defined with respect to environmental responsibilities. The other staff members are informally instructed to conduct environmental	Include environmental responsibilities in key performance areas. Appoint relevant persons in writing. Keep appointments on file.	Reshuffling has necessitated re-allocation of roles and there is appointment for environmental responsibility given to the current site	The roles and responsibilities have been outlined and due to company shuffling the operations manager is responsible for



Previous audit findings	Comment	Previous status as observed during 2016 Audit	Current status as observed during 2019 Audit
tasks and there are no records of whether their environmental tasks are included in their key performance areas.		Operations Manager.	environmental tasks.
Documents are kept at one central location in a paper format.	Improve document control and make sure that environmental documents are accessible to all staff members undertaking environmental responsible activities	Document and record keeping improved.	Continuously improve record keeping
An authorized waste disposal site is being used for domestic waste disposal	The permit for waste disposal site that was granted by DWS.	Cell delineation is done at the waste disposal site. The site is maintained well and cover material available. Burning is done and must be phased-out.	Refer to the pictures for the delineated waste disposal cells. Burning is not phased out as we are permitted to burn i.t.o. the license.
Separate fluorescent tubes from general waste	To be done collected into sealed drums	No evidence of unattended fluorescent tubes.	Confirmed – Being separated into a sealed drum.
The oil separator release point at the back of the workshop to be monitored.	The effluent from the wash bay should be tested for suitability for discharge parameters should be tested for suitability for discharge before released. The discharge parameters should be tested against	The oil separator release point at the back of the workshop will have to be monitored.	Being monitored and tested – new test will be done in 2019 as the previous test was done in July 2016.



Previous audit findings	Comment	Previous status as observed during 2016 Audit	Current status as observed during 2019 Audit
	DWS's water quality target ranges. The oily overflow can alternatively be captured and stored in a used oil drum		
There is no surface layout plan on site for planning purposes	Have layout plan available on site and use for planning purposes	Surface layout plan is available on site	The surface layout was updated in the sit plan report detailing the site in 2018.
The policy statement is placed in offices as well as on the notice board I front of the store but not in all areas for all employees to access.	Avail the environmental policy in all areas of the mine to raise awareness amongst all employees and contractors Green book to be given to all supervisors for discussion with their subordinates at early morning discussions	Policy noted	Policy Noted
Potable water is tested for water quality by National Health Laboratory Services. Currently water is tested bi-annually for only Coliforms.	Have monitoring of water use within the site. In addition to the records which are kept every month, develop a water balance to use as a water management tool.	Ongoing water quality testing is done. The results have to be analyzed	Ongoing water testing is conducted.

General Findings and Non-conformances:

- There was a cliff collapse incident on the site worked by MSR and the DMR requested a cliff stability report which was submitted to the department.



- The previous audit report recommended that the approved EMP is due for update and amendment.
- The water testing includes the wash bay outlet at the back of the workshop.
- The soil farm has reached its capacity and the service provider will be commissioned to decontaminate the soil. The soil has not been decontaminated however the volume does not trigger an EIA.
- The waste site is operated according to the general conditions. As part of continual improvement, the waste site is divided into cells and adequately labelled. The waste is being burnt as per the terms of the permit.
- There is evident adherence to the 5 m buffer zone in compliance with the monitoring protocol. This is physically marked 2 m from the cliffs and the 5 m from the 2 m which makes from 7m buffer zone. Contractors do not work behind these marking towards the cliffs and there is 7 m allowance for protection of the cliffs.
- The EMPr was approved in 2003. There EMPr was later revised version of 2005, which was a dressing the conditions of approval pertaining to roads maintenance. All the roads were subsequently delineated, and it needs to be determined, which roads will be used and those that will not be used, be incorporated into the rehabilitation programme. The DMR agreed that the roads expanded by Tormin, MSR, are their responsibility.
- The contractors and the positions where they are working needs to be continuously updated and availed to the regulatory authorities on request.
- The monitoring protocol was updated in the light of the lessons learnt on the enforcement of the 5 m buffer zone.
- The slimes dam quarterly monitoring for rate of rise, freeboard and stability amongst others is done and it currently monitored it in-house.
- The slimes dam delivery pipes are intact, and the slimes is beaching properly. The settlement return water dams are not overflowing, and the last compartment is dry and as such there is currently no discharge of slimes water into the sea.
- The scrap yard has been cleaned up. There is minimal scrap on site and is given to scrap buyers as a contribution to cash flow generation; and
- The Internal Auditing frequency needs to be increase and an action plan.

4.2 Monitoring Programme Compliance

Environmental Performance Reporting is a requirement that a mining right holder has and that allows the Competent Authority to keep track of the environmental issues on all the relevant environmental



compartments. A secondary objective of the Environmental Performance Reporting is to make companies more aware of the impacts to the environment.

For the purposes of this document environmental monitoring is defined according to DWS' s Integrated Environmental Management Framework (IEMF) as "the repetitive and continued observation, measurement and evaluation of environmental data to follow changes over a period of time to assess the efficiency of control measures". Monitoring has a smaller scope, usually at a project or programme level. Monitoring is undertaken on an ongoing basis for the duration of the project, programme or activity – usually before, during, and after implementation of each project or programme.

Environmental protection and management can be ensured through the monitoring of compliance by a regulating organization. Compliance with environmental laws, regulations, permits, licenses etc., is controlled through effective monitoring and compliance assessment. Such compliance must be monitored to ensure that control mechanisms have the desired effect.

4.3 Environmental Performance Parameters

While environmental risks and impacts vary from operation to operation, and region to region, constant measurement and monitoring of these key characteristics are necessary in order to prevent potential pollution and to mitigate actual pollution to air, land and water.

Ambient air quality

The locality of the mining area is subject to an almost constant southerly onshore wind for most of the year. These winds are responsible for moving large volumes of sand naturally in a northerly direction up the coast. The mining area is monitored and reported on quarterly.

Water management

Water in South Africa more so in the Western Cape is a scarce resource and this may be intensified in the future in the Group's areas of operation by climate change. Water usage is continuously monitored at the Mine's operations and is considered a critical part of the successful operation of the mine. Sea water is used at the processing plant.

Land management, biodiversity and closure

Disturbance of the land on which its operations are located is the most lasting and visible environmental impact of diamond mining. Erosion control measures should be continuously implemented. Phased netting to facilitate the natural trapping of seeding and revegetation on disturbed areas must be continuously implemented.



5 ENVIRONMENTAL PERFORMANCE

5.1 Assessment of NEMA Environmental Authorisation Compliance

CONDITION	COMPLIANT	SUPPORTING PHOTO EVIDENCE / COMMENTS	RECOMMENDATIONS
MANAGEMENT AND MONITORING OF THE ACTIVITY			
1. The Environmental Management Plan (EMP) submitted as part of the application for environmental authorisation is approved and must be implemented and adhered to throughout out the lifecycle of these activities.	C	The 2016 audit report recommended that the EMP needs to be updated.	Adhere to the conditions of the Environmental Management Plan.
2. The holder of the authorisation must submit a post-construction environmental audit report to the Department. The audit report must be compiled by an independent auditor.	C		
3. The Department retains the right to monitor and / or inspected the proposed project both during construction and operational phases.	C		
4. Monitoring of boreholes for groundwater quality must be done quarterly and records must be kept at the offices on site.	C		
5. Any pollution incidents with the development in any nearby watercourse must be reported to DWS within 24	C		



hours.			
GENERAL CONDITIONS			
1. Construction activities must be restricted within the defined construction areas and road servitude. No construction or disturbance must occur outside these areas.	C		
2. Safe disposal certificates must be filed and kept in order in case of a request from the Department.	C	<p>There are no safe disposal certificate for hazardous waste as the waste at the plant takes at least four to five years or even more to make a load to Vissershok. There are a few drums on site, and we will dispose and get the relevant safe disposal certificate when we have enough for a load.</p> <p>The cause for this is the fact that contractors are servicing their own vehicles and vessels at their own facilities and they do not bring the waste to De punt.</p>	
3. Measures must be taken to remove alien vegetation and control new alien vegetation recruitment on any disturbed areas along the road servitude or reserve.	C		
4. Stormwater control works must be constructed at the inception of the construction phase and must be operated at the inception of the construction phase and must be operated and maintained in a sustainable manner throughout the project.	C		
5. Compliance with appropriate noise and vibration control	C	Quarterly monitoring is conducted	



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legislation must be in place.		by an occupational therapist.	
6. It is the responsibility of the holder of the authorisation to rectify any source of pollution from their undertaking and to take appropriate measures to prevent any pollution of surface as well as groundwater.	C		
7. Measures to ensure that no pollutants such as paper plastic, metal or glass shall be spread to the surrounding environment must be strictly enforced.	C		Refer to the pictures of the bins and scrapyards.
8. The pollution of adjacent areas due to the improper storage of construction materials or any hazardous substances is prohibited.	C		
9. Construction personnel must be sensitized to the requirements of the National Heritage Resources Act. Should any material of cultural or archaeological significance be encountered during construction, all activities must cease immediately and the South African Heritage Resources Agency (SAHRA) must be informed immediately.	C		
10. The requirements of the Occupational Health and Safety Act (Act No. 85 of 1993) must be adhered to.	C	.	
11. Relevant requirements of the National Water Act (Act No. 36 of 1998) must be complied with as described by DWS.	C	Comply with the WULA conditions	



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<p>12. Any complaints received from the public during construction and operational phases of the activity must be attended to as soon as possible and addressed to the satisfaction of the concerned.</p>	<p>C</p>	<p>There was a cliff collapse on site.</p>	<p>A cliff stability report was generated and submitted to the department.</p>
<p>SITE CLOSURE</p>			
<p>1. Should any activity ever cease or become redundant, the applicant shall undertake the required actions as prescribed by legislation at the time and comply with all relevant legal requirements administered by any relevant and competent authority at that time.</p>	<p>N/A</p>	<p>Only applicable to site closure.</p>	<p>None</p>
<p>2. A Rehabilitation Plan must be submitted to this Department for approval at least six months prior to the decommissioning of the activity.</p>	<p>N/A</p>	<p>Only applicable to site closure.</p>	<p>None</p>
<p>GENERAL</p>			
<p>1. A copy of this authorisation must be kept at the property where the activity will be undertaken. The authorisation must be produced to any authorised official of the Department who requests to see it and must be made available for inspection by any employee or agent of the holder of the authorisation who works or undertakes work at the property.</p>	<p>C</p>		
<p>2. The holder/applicant of this authorisation is responsible for compliance with the duty of care remediated as</p>	<p>C</p>		



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contained in Section 28 of NEMA.			
3. Any changes or deviations from the project description set out in this authorisation must be approved in writing by the Department before such changes or deviations may be affected.	C		
4. Where the applicant's contact details change, including the name of the responsible person, the physical address and /or telephone details, the applicant must notify the Department as soon as the new details become known to the applicant.	C		
5. Non-compliance with a condition of this authorisation may result in criminal prosecution or other actions provided for in the National Environmental Management Act, 1998 and the regulations.	C		
6. National government, provincial government, local authorities or committees appointed in terms of the conditions of this authorization's or any other public authority shall not be held responsible for any damages or losses suffered by the applicant or his successor in title in any instance where the construction or operation subsequent to construction can be temporarily or permanently stopped for reasons on non-compliance by the applicant with the conditions of this authorisation as	C		



<p>set out in this document or any other subsequent document emanating from these conditions of authorisation.</p>			
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5.2 EMP for the NEMA Environmental Authorisation

NEMA EMP Compliance

MANAGEMENT MEASURE	COMPLIANT	SUPPORTING PHOTO EVIDENCE / COMMENTS	RECOMMENDATIONS
MANAGEMENT OF THE POLLUTION			
<p>1. A Standard Operating Procedure (SOP) must be drawn up and implemented for all residue facilities to ensure that:</p> <ul style="list-style-type: none"> o The pollution control facilities (stormwater channels, oil traps, silt traps and settling ponds) are cleaned regularly and maintained, to avoid spillages and overtopping, especially in storm events. 	C	<p>Refer to images of the slime's dams.</p>	
<p>2. Should damages be noted to any of the pollution control facilities, plans must be implemented to repair, and in future, where possible prevent the damages from occurring?</p>	C		
ENVIRONMENTAL MONITORING			
<p>1. Groundwater monitoring to be undertaken for all areas. Reporting of water quality results on a quarterly basis.</p>	C	<p>The ground water monitoring program is being implemented.</p>	



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<p>2. Air quality monitoring: Monthly dust monitoring must be undertaken in accordance with SANS1929:2005. A quarterly report on the air quality measurements collected must be submitted to mine management and DMR.</p>	<p>C</p>	<p>The plant and mining areas are reported quarterly.</p>	
<p>3. Auditing requirements</p> <ul style="list-style-type: none">- Internally for systems, action plans and EMPs (over a two-year cycle)- Externally (annually) for:<ul style="list-style-type: none">• EIA Management Plans audits.• Legal Compliance Audits.• Audits on monitoring programs.	<p>N/C</p> <p>C</p> <p>C</p> <p>C</p>		



5.3 Environmental Authorisation

EA Compliance

CONDITION	COMPLIANT	SUPPORTING PHOTO EVIDENCE / COMMENTS	RECOMMENDATIONS
GENERAL CONDITIONS			
1. This Authorisation refers only to the project specified and described in the ROD. Separate Applications must be lodged for any other development and / activity at or near the proposed development.	C		
2. The authorisation is only granted in terms of Section 22 of the Environmental Conservation Act (Act 73 of 1989) and does not exempt the holder from compliance with any other relevant legislation.	C		
3. No activity may take place on the site of concern without the necessary permits / approvals and service agreements, where it is relevant from or between other relevant authorities.	C		
4. Copies of the relevant permits/approvals and/or service agreements must be forwarded to this Department within three months of the issuing of this Authorisation.	C		
5. The Department may change and / or amend any of the conditions in this Authorisation if, in the opinion of the	C		



Department, it is environmentally justified.			
6. The development must comply with all the mitigatory measures in the Environmental Management Programme and the conditions of approval from this Department and other relevant Authorities.	C		
7. A copy of this Authorisation must always be available at the appropriate office and all relevant staff, contractors and sub-contractors must be acquainted or be made acquainted with the content of this Authorisation.	C		
ESTABLISHMENT OF THE DEVELOPMENT			
1. This Authorisation is repealed if the project has not commenced within three (3) years from the date of this Authorisation.	C		
2. Fourteen (14) days written notice must be given to this Department before commencement with construction activities.	N/A		
REPORTING			
1. Records relating to the compliance / non-compliance with the conditions of the Authorisation must be kept in good order. Such records must be made available to this Department within seven (7) workdays of the date on a written request by Department for such records.	C		
2. Non-compliance with or any deviation from the	C		



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conditions as set out in this Authorisation is regarded as an offence and, after reasonable provision has been made for remedial action, will be dealt with in terms of Section 29, 30 and 31 A of the Act.			
3. Any complaints regarding the said activity must be brought to the attention of the Department within 24 hours after receiving the complaint. A complaints register must be kept up to date for inspection by members of this Department.	C		
4. A yearly audit will be submitted detailing the results of monitoring.	C		Every two years
5. A record of incidents and record of decision taken will be kept and the results included in the audit report.	C	The cliff stability report was submitted to the DMR	
6. Audit and reporting documentation will be maintained by Piere Koetze and will be made available for inspection at the site.	C		
7. The responsible person in charge of the operation and management of the site will be the general Manager.	C		



5.4 Environmental Management Programme Implementation

ACTIVITY	COMPLIANT	SUPPORTING PHOTO EVIDENCE / COMMENTS	RECOMMENDATIONS
Company policy statement	C	The policy statement is available and displayed at the main offices. An Afrikaans version of the policy is also available at the entrance of the store.	Continuous update to the current legislations
Define roles of staff members involved in EMP implementation	P/C	The operations Manager role has been formally defined with respect to environmental responsibilities.	
Financial provision	C	Financial provision was calculated using external consultant Site Plan and the FP has been submitted to the DMR	Financial provision was submitted to DMR.
Performance assessment audits (internal and external)	C C	This audit report forms part of the external compliance.	Monthly inspections are done.



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ACTIVITY	COMPLIANT	SUPPORTING PHOTO EVIDENCE / COMMENTS	RECOMMENDATIONS
Communicate with stakeholders	C	Complaints registers for the public have been placed at the security entry point and a notice is displayed to make the public aware of the existence of these complaints' registers. There is Health and Safety Committee which comprises beach, vessels and shore units' contractors, security.	Monthly inspections are done.
Environmental training and awareness			
Internal environmental awareness raising	C		
Contractors environmental awareness raising	C		Ongoing awareness and supplying the contractors with the relevant protocols.
Document control			
Keep records associated with the implementation of EMP	C	Documents are kept at one central office location and are accessible for auditing.	
Legal			
Permit for waste disposal site	C	The licensed site is being used. The waste site is operated according to the general conditions.	Refer to the pictures for the disposal site.
Permit for slimes dam	P/C	A consultant has been appointed to apply for	



TRANS HEX

ACTIVITY	COMPLIANT	SUPPORTING PHOTO EVIDENCE / COMMENTS	RECOMMENDATIONS
discharge into the sea		the Discharge permit with DEA	
Mining authorisation	C		
EMPR approval	C	EMPR approved. EMPR amended is due to ensure that roads to be closed are captured.	
Monitoring and measurement:			
Water quality monitoring	C	Potable water is tested for water quality by National Health Laboratory Services. Currently water is tested bi-annually for only Coliforms.	The water is tested at the discharge point and at the slime's dams. The water testing should include the French drain outlet at the back of the workshop.
Slimes dam inspection	C	Done internally on a regular basis. The slimes dam delivery pipes are intact, and the spines is beaching properly.	Monitoring is done inhouse and will be certified by Chris Groenewald who will be our service provider.
Rehabilitated roads monitoring and inspections	C	The access roads have been Expanded by Tormin.	Rehabilitation of the relevant expanded roads is Tormin's responsibility
ACCOMMODATION, PROCESSING FACILITIES AND GENERAL ACTIVITIES			
Infrastructure and service provision			
Mining base, offices, vehicle maintenance and storage areas			



TRANS HEX

ACTIVITY	COMPLIANT	SUPPORTING PHOTO EVIDENCE / COMMENTS	RECOMMENDATIONS
Have adequate surface layout plan, showing all mining related activities (roads, camps, vehicle maintenance areas and processing areas.	C	Layout plan of mine and residential areas as well as aerial photographs of roads is available in the EMPR.	
Restrict vehicle maintenance to the maintenance yard and contain all spills	C	Workshop is bunded and good housekeeping practices are maintained.	
Keep records of water use	C	Water use is only measured through the invoice which is received from the water supplier.	Records are kept
Mineral processing onshore			
Mineral processing areas and Dumping of tailings			
No mineral processing areas within 100 m from the edge of a river	C		
Contain processing sea water to avoid seepage of saline water into the soils	C	Processing facilities are bunded and concreted. Slimes are piped into a slimes dam.	
Locate and design dumps to	C	Tailings are dumped in old existing prospecting	



TRANS HEX

ACTIVITY	COMPLIANT	SUPPORTING PHOTO EVIDENCE / COMMENTS	RECOMMENDATIONS
prevent damming of water, wash-away and to prevent erosion		trenches. A dumper truck has been made available for ongoing rehabilitation.	
Discharge of sea water used to screen marine gravels onshore			
Locate outlets from the slimes dams as close to the top of the intertidal zone as possible to avoid salinization of soil	C		
Return seawater to the sea in the same vicinity where abstraction occurred	C	Seawater returned approximately 100m from extraction point.	
Apply for seawater effluent discharge	C	Permit was issued by DWS	Finalize the process of working with DEA regarding the compliance requirements for the discharge since now discharge matters are handled by DEA.
Retrieval of ferrosilicon			
Keep records of FeSi used	C	Records are kept	
Excavations for land-based activities			



TRANS HEX

ACTIVITY	COMPLIANT	SUPPORTING PHOTO EVIDENCE / COMMENTS	RECOMMENDATIONS
Restrict public access to unsafe mining related excavations	C	Excavations backfilled with tailings.	
Access roads			
Control of beach access and use only existing formal roads			
Use only existing and surveyed roads and avoid scarring of the landscape with development of new roads/tracks	C	Inspections are undertaken by security management and employees.	
Survey road areas for archaeological sites and avoid disturbance of such sites	C	Un-used roads are rehabilitated. The initiative of road rehabilitation for those that are clearly the responsibility of the mine and not shared with other users has to be formally pursued.	
Planning and application procedures for new roads			
Obtain DMR approval for new minor tracks	√	No new roads are planned.	
Erection of structures near public roads			



TRANS HEX

ACTIVITY	COMPLIANT	SUPPORTING PHOTO EVIDENCE / COMMENTS	RECOMMENDATIONS
Obtain permission from the road's authority for erection of structures within the building restriction zone, if necessary.	C	No new structures planned. All roads in mining area are on private property.	
Sourcing of material from borrow pits and quarries for road construction			
Obtain permission from the landowner for using exist borrow pits	N/A	Permission is reportedly obtained from landowner before any material is used. No written permission has been sought. In addition, only tailings are actively used to fill - up road gullies and these tailings are not mixed with borrow material. Road Engineer recommended that it is not necessary to mix borrow pit material with tailings (samples were taken and tested by the Road Engineer).	No new roads were built and no material was taken/removed from borrow pits.
Road maintenance			
Ensure roads have acceptable surfaces, and are free from erosion	N/C	Storm water control on roads is not up to standard. Tailings are used to rehabilitate roads. There are signs of erosion on some roads. A road maintenance plan is available	The corrective action plan hasn't been implemented, however; the way the roads are graded & maintained was amended.



TRANS HEX

ACTIVITY	COMPLIANT	SUPPORTING PHOTO EVIDENCE / COMMENTS	RECOMMENDATIONS
		and will be submitted to DMR for approval as part of the amended EMP. All old unused roads have been mapped a plan devised to close them in order of priority. The roads that are not used will be closed first.	
Jetties			
Apply for permission to use existing jetties and offloading facilities	C	Lamberts Bay jetty is owned by Public Works. Doring Bay jetty - permission obtained from North Bay Fishing (jetty owners) for the use of this facility not used anymore. Olifants River mouth - not been used for past four years.	Lambertsbay jetty is leased from Public Works – only one jetty is in use now
Rehabilitation and aesthetic impact control			
General rehabilitation			
Develop a rehabilitation plan and ensure that rehabilitation forms an integral part of mining operations from start-up	C	Rehabilitation plan provided as part of the EMPR	Continue with ongoing concurrent rehabilitation throughout the LOM
Rehabilitation below HWM			
Removal of general waste from beaches			



TRANS HEX

ACTIVITY	COMPLIANT	SUPPORTING PHOTO EVIDENCE / COMMENTS	RECOMMENDATIONS
Avoid discarding of waste on beaches (old piping, plastic sheeting, litter etc)	C		
Rehabilitation of land areas above HWM			
Processing areas, campsites etc			
Remove all wastes and other materials established during the use of a mining camp and/or processing area and dispose appropriately	C	A licensed waste site is used.	
Non-essential vehicle tracks, access roads and beach access points			
Rehabilitate unnecessary tracks by placing barriers such as rocks across the entrances of non-essential informal tracks	C	All used tracks have been surveyed. Rehabilitation of tracks within the mine boundary is ongoing. The surveyed tracks will also be rehabilitated as per the EMPR stipulations.	
Where the surface of unnecessary tracks has become compacted, plough or rip the surface	C	This is being done on the tracks within the mine property. Road rehabilitation commenced from the river mouth up to the De Punt Mine.	



TRANS HEX

ACTIVITY	COMPLIANT	SUPPORTING PHOTO EVIDENCE / COMMENTS	RECOMMENDATIONS
Waste management/ Pollution control			
General waste and pollution management Ultimate responsibility for wastes			
Proper sorting, storage and disposal of waste	C	Sorting of waste is being done at source.	
Have emergency and oil spill contingency measures formulated (use of OT8 for dealing with spillages)	C	Emergency procedure for dealing with spillages available	
Storage and disposal of hazardous materials			
Contain all oils, grease, hydraulic fluids and all other hazardous substances as per Total environmental impact assessment management measures and dispose of at permitted waste site	C	There are separate marked drums for oil filters, oily rags and general waste. A certified underground tank is used for used oils. Transformer room is equipped with an oil trap. The oil trap at the wash bay facility is in good working condition.	Refer to pictures for the drums and oil trap
Use of CFC- containing equipment			
Replace CFC containing products and equipment with	C	Only CFC products are fluorescent tubes. These are disposed of in a separate specific	



TRANS HEX

ACTIVITY	COMPLIANT	SUPPORTING PHOTO EVIDENCE / COMMENTS	RECOMMENDATIONS
halogen-free products		designed drum which is collected by a contracted safe disposal waste handling contractor.	
Waste Management onshore Disposal of waste water			
Dispose domestic effluents including wash-water (not containing fuel, grease, solvents) into a septic tank	C		
Wash bay to be equipped with an oil separator	C	The Wash Bay is seldom operational. The oil trap has thus been cleaned.	
Disposal of solid waste			
Collect and store biodegradable and non-biodegradable refuse in waste collection bins for collection and disposal at a permitted waste disposal Site	C	Approved disposal site has been used.	
Fuel and Lubricants			



TRANS HEX

ACTIVITY	COMPLIANT	SUPPORTING PHOTO EVIDENCE / COMMENTS	RECOMMENDATIONS
Receipt, bunkering and dispatch of fuel and lubricants			
Avoid and contain all spillages and properly store oil drums on bunded surfaces	C	There is a system in place for storing oil drums.	
Clean oil sludge and dispose into waste oil drums	C		
Used oil recycling			
Drum waste oil/fuel for collection	C	Underground storage tank used for used oil. The tank has been certified by Petro Monitor in January 2005.	
Ensure that all workshops and degreasing rooms are concreted	C	Workshops and degreasing rooms are concreted.	
Soil decontamination			
Decontaminate in-situ soil using suitable decontaminant	C	Peat Sorb is used. Decontaminated soil is placed at a designed soil farm. The soil will be treated and tested prior to be used as part of rehabilitation	
Topsoil management			



TRANS HEX

ACTIVITY	COMPLIANT	SUPPORTING PHOTO EVIDENCE / COMMENTS	RECOMMENDATIONS
Removal and stockpiling			
Remove and stockpile topsoil prior to disturbance of an area for any purpose e.g. road works	C	No topsoil was removed for the purpose of constructing the roads. With the new road rehabilitation and maintenance plan, the rehabilitated roads are covered with tailings. The wind action blows the sand and topsoil on to the tailings and this is trapped in between the rocky tailings material and becomes micro sites for plant growth.	
Topsoil replacement			
Replace topsoil over disturbed areas and closed roads	C	Tailings are placed over used roads and natural regeneration of plants is monitored. Wind action disposes sand and topsoil between the rocky tailings and it gets trapped and acts as micro sites for plant growth.	
Water management			
Optimize use of water and achieve maximum recycling.	C	All process water is sea water.	
Keep records of quantities of water used, purposes of use and sources of supply	C	Records of fresh water used are kept.	



TRANS HEX

ACTIVITY	COMPLIANT	SUPPORTING PHOTO EVIDENCE / COMMENTS	RECOMMENDATIONS
Sewage management			
Sanitary effluents comply with DWS standards	C	Only septic tanks are used.	
Provide septic drain system at all sanitary facilities	C	Sanitary facilities are piped to septic tanks.	
Protection of the historical environment			
Avoid disturbance of sites of cultural and archaeological importance	C	Archaeological sites mapped and avoided.	
Undertake archaeological surveys when new infrastructure is required and avoid operating within 50 m of the discovered archaeological material	C		
Inform South African Heritage Resources Agency should such a material be found	C	No archaeological materials have been found.	
Protection of natural environment			



TRANS HEX

ACTIVITY	COMPLIANT	SUPPORTING PHOTO EVIDENCE / COMMENTS	RECOMMENDATIONS
Avoid disturbance of animals e.g. shellfish, sharks, turtles, seals and birds (hunting prohibited)	C	No hunting is done.	
Obtain a permit from Department of Nature Conservation for fishing	C	No fishing is done during mining activities.	
Avoid driving on ecologically sensitive areas such as salt marshes or estuaries	C	A 5 m to 7 m buffer zone from the dunes is maintained and there is not collection of boulders from cliffs. Contractors and other coast users are made aware of these restrictions. The contract for co-existence with Tormin Mineral Sand shall enforce these requirements. Monitoring of execution should be undertaken.	
BEACH MINING ACTIVITIES			
Infrastructure and service provision			
Avoid trenching or mining operations on the beach or construction of sea walls and raised processing areas within	C	The contractors are encouraged to adhere to buffer zone. There was a cliff collapse on the site n 2018	Refer To the Cliff Stability report.



TRANS HEX

ACTIVITY	COMPLIANT	SUPPORTING PHOTO EVIDENCE / COMMENTS	RECOMMENDATIONS
5 m from the base of the primary cliffs and dunes			
Demarcate parking and storage areas and these should be sited in previously disturbed areas. Avoid removing vegetation for the purpose of establishing parking and storage areas.	C	Parking and storage areas are demarcated with a rope or a red tape.	
No stockpiling of gravel in parking and storage areas	C		
Backfill excavations to maintain original beach sediment profile	C	Boulders are buried first into excavations and then the heavy gravels will be placed on top. The wave action will finalize the backfilling by bringing in sand.	
Prohibit undercutting or using materials from cliffs or dunes for sea wall construction (adhere to protocol)	C		



TRANS HEX

ACTIVITY	COMPLIANT	SUPPORTING PHOTO EVIDENCE / COMMENTS	RECOMMENDATIONS
Tailings dumps on beach			
Deposit tailings from classifying of gravel below the high-water mark and as far down the beach as possible to ensure their rapid removal by wave action	C	All tailings are dumped within tidal zone to ensure rapid removal by wave action.	
Rehabilitation and aesthetic control			
Rehabilitation below HWM			
Excavations and embankments			
Backfill all beach excavations as mining progresses	C		
Boulders used for cofferdam embankments to be buried in cofferdams	C		
Re-distribute boulders removed during excavations across the beach in the close vicinity of their location	C		



6 Conclusion

6.1 Findings and recommendations

- There was a cliff collapse incident on the site worked by MSR and the DMR requested a cliff stability report which was submitted to the department.
- The previous audit report recommended that the approved EMP is due for update and amendment.
- The water testing includes the wash bay outlet at the back of the workshop.
- The soil farm has reached its capacity and the service provider will be commissioned to decontaminate the soil. The soil has not been decontaminated however the volume does not trigger an EIA.
- The waste site is operated according to the general conditions. As part of continual improvement, the waste site is divided into cells and adequately labelled. The waste is being burnt as per the terms of the permit.
- There is evident adherence to the 5 m buffer zone in compliance with the monitoring protocol. This is physically marked 2 m from the cliffs and the 5 m from the 2 m which makes from 7m buffer zone. Contractors do not work behind these marking towards the cliffs and there is 7 m allowance for protection of the cliffs.
- The EMPr was approved in 2003. There EMPr was later revised version of 2005, which was a dressing the conditions of approval pertaining to roads maintenance. All the roads were subsequently delineated, and it needs to be determined, which roads will be used and those that will not be used, be incorporated into the rehabilitation programme. The DMR agreed that the roads expanded by Tormin, MSR, are their responsibility.
- The contractors and the positions where they are working needs to be continuously updated and availed to the regulatory authorities on request.
- The monitoring protocol was updated in the light of the lessons learnt on the enforcement of the 5 m buffer zone.
- The slimes dam quarterly monitoring for rate of rise, freeboard and stability amongst others is done and it currently monitored it in-house.
- The slimes dam delivery pipes are intact, and the slimes is beaching properly. The settlement return water dams are not overflowing, and the last compartment is dry and as such there is currently no discharge of slimes water into the sea.
- The scrap yard has been cleaned up. There is minimal scrap on site and is given to scrap buyers as a contribution to cash flow generation; and



- The Internal Auditing frequency needs to be increase and an action plan.

7 ANNEXURE 1: PHOTOGRAPHIC EVIDENCE

Table 2: Supporting photos

	<p>Picture 1: Plant</p>
	<p>Picture 2: Slimes dam</p>



Picture 3: Abstraction Point



Picture 4: Wash bay



Picture 5: Access Roads

Picture 6: Oil Trap System



Picture 7: landfill site





Picture 8: Scrap Yard



Picture 9: Waste Drums

