



Mafube Coal Mining (Pty) Ltd

Environmental Audit Report

Submitted as contemplated in section 24N (7) (d) of the National Environmental Management Act, 1998 (Act 107 of 1998) (NEMA) and Regulation 34 under Part 3 of Chapter 5 of the amended Environmental Impact Assessment Regulations, 2014 (Government Notice No. 982) (EIA Regulations, 2014)

DMRE Reference No.:

MP 30/5/1/2/2/172 MR

MAFUBE COLLIERY

SPRINGBOKLAAGTE MINING OPERATION

NOVEMBER 2021

Geovicon Environmental (Pty) Limited

(Environmental & Geological Consultants)

www.geovicon.co.za

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1. INTRODUCTION

The Springboklaagte section of the Mafube Colliery is located approximately 17 km north of Arnot Power Station and 20 km east of Middelburg, on the farms Springboklaagte 416JS, Elandsfontein 433JS and Kleinfontein 432JS between the N4 highway and the Maputo railway line. The reserve area is about 6 km long by 2 km wide and covers an area of approximately 1000 ha. The old Belfast-Middelburg tar road (provincial road P154 - realigned) cuts through the north-eastern part of the coal reserve, while the Arnot-Pan tar road (district road D1398) runs along the western boundary. A secondary dirt road (provincial road D684) runs parallel with the southern and eastern boundary of the coal reserve. Mafube Colliery is located within the Nkangala District Municipality. The area of the colliery also falls within the Steve Tshwete Local Municipality district.

Mining activities have ceased at Mafube Colliery's Springboklaagte section with the last coal removed from the west pit in November 2018 for processing. Mining at Mafube Colliery took place using conventional truck and shovel mining methods. This method included pre-stripping of topsoil, blasting and excavation of the overburden to expose the coal. No draglines were used at the Springboklaagte section. The coal was removed, the overburden returned to the pit and the topsoil replaced. The return of the overburden and topsoil is a continuous rehabilitation process, with the disturbed areas reseeded. As mining activities have ceased, Mafube Colliery has, with the exception of the East Pit, backfilled all remaining open pit and void areas. Levelling and shaping the spoils has been undertaken at the mined out opencast areas with the mined out areas (except for the Pan 1 and Pan 2 reconstruction sites) covered with topsoil and most of the areas revegetated. Backfilling of Pan1 and Pan 2 has taken place. The mine is currently ensuring that the correct elevation is obtained for the pan recreation.

Mafube Colliery has also established the Lifex project (separate environmental authorisation and approved EMPr applicable that form part of a separate audit scope of work). All coal mined at the Lifex project is transported to the existing beneficiation plant for treatment and final provision for export market. Therefore, rehabilitation activities currently undertaken, are only applicable to the pit area, with the beneficiation plant and associated infrastructure (including discard facility, water management infrastructure, conveyors, etc) still being utilised.

In terms of the National Environmental Management Act, 1998 (Act 107 of 1998), the amended NEMA Environmental Impact Assessment Regulations, 2014 and the EMPr approval letter, Mafube Coal Mining (Pty) Limited must assess its compliance with the conditions of the EAs and approved Environmental Management Programmes (EMP) for its mining and associated activities at Isibonelo Colliery.

Mafube Coal Mining (Pty) Ltd appointed Geovicon Environmental (Pty) Limited to assess the compliance of Mafube Colliery Springboklaagte mining operation against conditions/commitments of the Environmental Authorisation and the EMPr issued and approved in terms of the NEMA. This report is hereby submitted to assess such compliance.

2. LEGAL FRAMEWORK

2.1 NATIONAL ENVIRONMENTAL MANAGEMENT ACT (ACT 107 OF 1998) (NEMA)

Section 24N(7)(d) of NEMA requires that the holder and any person issued with an environmental management programme (**EMPr**) must monitor and audit compliance with the requirements of such EMPr. Regulation 34 of the EIA Regulations, 2014 states that the holder of an environmental authorisation (**EA**) must, for the period during which the EA and EMPr remain valid, ensure that compliance with the conditions of the EA and EMPr is audited and that an environmental audit report, prepared by an independent person, is submitted to the relevant competent authority, which in the case of Mafube Colliery is the Department of Mineral Resources and Energy (**DMRE**), Mpumalanga Regional Office. The above-mentioned environmental audit report must determine the ability of the approved EA and/or EMPr to sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the mining operation on an ongoing basis and the level of compliance with the provisions of the relevant approved EA and EMPr.

With the amendment of the EIA Regulations, 2014, on 7 April 2014, Regulation 54A was introduced. Regulation 54A (2) of the EIA Regulations, 2014 which has also been amended, ¹ further states that: *“where a right or permit issued in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) and the associated Environmental Management Programme or Environmental Management Plan approved in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) is still in effect after 8 December 2014, the requirements contained in Part 3 of Chapter 5 of these Regulations apply to such Environmental Management Programmes or Environmental Management Plans, and where-*

(a) the audit or performance assessment cycle of the Environmental Management Programme or Environmental Management Plan exceeds five years, an audit report will be required to be submitted at least every five years commencing from the date of submission of the last audit, for the period during which the right or permit remains in effect; or

(b) no audit or performance assessment requirement was set in the Environmental Management Programme or Environmental Management Plan, an audit report will be required to be submitted to the competent authority no later than 7 December 2021 and at least every 5 years thereafter for the period during which the right or permit remains in effect”.

Therefore, the requirements of regulation 34(1) of the amended EIA Regulations, 2014 are relevant to the Mafube Colliery Springboklaagte section operations.

¹ Government Notice R517 in Government Gazette 44701 of 11 June 2021.

3. SCOPE AND PURPOSE OF THE ENVIRONMENTAL AUDIT

The purpose of this audit is to verify whether the Springboklaagte section of the Mafube Colliery complies with the requirements outlined in the various approved EAs and EMPs:

EAs:

- Environmental Authorisation for Pan 1, ref: 17/2/3N-221, dated 18 September 2013;
- Environmental Authorisation for Pan 2, ref: 17/2/3G-NK-25, dated 29 April 2013;
- Environmental Authorisation for Conveyor, Rail Loop, Road Diversion, Pipelines and Sub-station, ref: 17/2/5-NK-53, dated 24 June 2006;
- Environmental Authorisation for the amended Briquetting Plant, ref: 17/2/3 G NK21, dated 05 December 2012;
- Environmental Authorisation for the Underground Storage Tanks, ref: 17/2/2/3 MP-30, dated 20 March 2009;
- Environmental Authorisation for the amended Above Ground Storage Tanks, ref: 17/2/1/7 NK-11, dated 15 May 2012; and
- Environmental Authorisation for the amended Above Ground Storage Tanks, ref: 17/2/1/7 MP-12, dated 15 May 2012,

EMPs:

- Environmental Management Program Alignment, ref: MP 30/5/1/2/2/172 MR, dated 12 November 2019;
- Environmental Management Plan: The operation of a briquetting plant at Mafube Colliery, Middelburg (DEDET ref. no. 17/2/3 NK-47; 17/2/3 G NK21);
- Environmental Management Programme Report for the amended Above Ground Storage Tanks, ref: 17/2/1/7 NK-11, dated 15 May 2012;
- Environmental Management Program for Pan 1 Reconstruction (Ref: 17/2/3N-221); dated July 2013 and
- Environmental Management Program for Pan 2 Reconstruction (Ref: 17/2/3 G NK-25) dated December 2012.

The environmental audit was conducted to determine the level of performance against compliance of the mining operation with the provisions of the approved EAs and EMPs. The audit was conducted to further determine the ability of the measures contained in the EAs and EMPs to sufficiently provide for the

avoidance, management and mitigation of environmental impacts associated with Mafube Colliery's Springboklaagte mining operations and associated surface infrastructure and activities.

In view of the above, the scope of this compliance assessment is as follows:

- To report on the compliance of the mine with the conditions, commitments and/or mitigation measures in the approved EMPs and EAs and the extent to which the avoidance, management and mitigation measures provided for in the EAs and EMPs, achieve the objectives and outcomes of these EAs and EMPs;
- To identify and assess any new impacts and risks arising from the Mafube Colliery mining activities which are not adequately mitigated by the mitigation measures in the approved EAs and EMPs;
- To evaluate the effectiveness of the approved EAs and EMPs;
- To identify any inadequacies in the approved EAs and EMPs, and
- To identify the need for any changes to the avoidance, management and mitigation measures provided for in the approved EAs and EMPs.

4. METHODOLOGY ADOPTED IN PREPARING THE ENVIRONMENTAL AUDIT REPORT AND DECLARATION OF INDEPENDENCE

4.1 AUDIT TEAM

Lead Auditor: Mr. Ornassis Tshepo Shakwane (Pr.Sci.Nat. & Registered EAP - EAPASA)

Professional Registration Numbers:

SACNASP Registration: 117080

EAPASA Registration: 2019/1763

IAIA Membership No.: 3847

Company: Geovicon Environmental (Pty) Limited

Postal Address:

P.O. Box 4050

MIDDELBURG, 1050

Tel: (013) 243 0542

Fax: (086) 632 4936

Cell No.: 082 498 1847

Experience of the Auditor

Mr. O.T. Shakwane obtained his BSc (Microbiology and Biochemistry) from the University of Durban Westville in 1994, and completed his honours degree in Microbiology in 1995. Mr O.T. Shakwane has also completed short courses on environmental law, environmental impact assessment, environmental risk assessment and environmental management systems. He has worked within the three state departments tasked with mining and environmental management i.e. Department of Water and Sanitation (Gauteng and Mpumalanga Regions), Department of Mineral Resources (Mpumalanga Region) and Department of Agriculture, Conservation and Environment (Gauteng Region). Mr. Shakwane has been in the consulting field since 2004 and has undertaken environmental audits for mining operations similar to Isibonelo Colliery. Mr. Shakwane is one of the auditors that audited Isibonelo Colliery's compliance with their EAs and EMPs. Mr. Shakwane has been involved in the field of environmental auditing for the past sixteen years.

He is registered with the Environmental Assessment Practitioners Association of South Africa and South African Council for Natural Scientific Professions as an Environmental Assessment Practitioner and a Professional Natural Scientist in terms of section 24H of the National Environmental Management Act, (Act 107 of 1998) and section 20(3) of the Natural Scientific Professions Act, 2003 (Act 27 of 2003), respectively. He is also a member of the International Association for Impact Assessment, South Africa.

Auditor 2: Miss Mamphedi Bathabile Mabogoane

Professional Registration Numbers:

IAIA Membership No.: 6235

Company: Geovicon Environmental (Pty) Limited

Postal Address:

P.O. Box 4050

MIDDELBURG, 1050

Tel: (013) 243 0542

Fax: (086) 632 4936

Cell No.: 073 253 1081

Experience of the Auditor

Ms. Bathabile Mabogoane obtained her Baccalaureus Technologiae (B-Tech) in Environmental Sciences at the Tshwane University of Technology in 2020. She started working as an intern at Shangoni Management Services, year 2017 specializing in conducting Waste Management Licence Audits, waste management related reports and Health, Safety and Environmental related aspects and Environmental related reports. She joined Geovicon Environmental (Pty) Ltd as a Junior Environmental Consultant in August 2018. Her responsibilities include but will be limited to: compilation of all documentation for mining rights, mining permits and prospecting right applications, compilation of Environmental Impact

Assessment and Environmental Management Programs, compilation of Water Use Licence applications with Integrated Water and Waste Management Plans, conducting of Environmental audits, Integrated Water Use Licence Audits, conducting of Environmental inspections, compilation of environmental reports (EMPr, Scoping Reports, BARs, EIAs, Public Participation Reports), arrangement and attendance of Public Participation meetings with Interested and Affected Parties, conducting environmental audits and inspections at mining companies, compilation of Water Quality Reports and Environmental Audit Reports (EAR). She is also a member of the International Association for Impact Assessment, South Africa. Ms. Bathabile Mabogoane has been in the consulting field for a period of three years and has undertaken environmental audits for mining operations similar to Greenside Colliery. Ms. Bathabile Mabogoane is one of the independent auditors that audited Greenside Colliery's compliance with their EAs and EMPRs.

4.2 FREQUENCY OF REPORTING

Mafube Colliery Springboklaagte Section is operated under and in terms of approved EAs and EMPRs in terms of NEMA and the Mineral and Petroleum Resources Development Act, 2002 (**MPRDA**). External compliance audits are conducted on an annual frequency with audit reports compiled reflecting findings made on the same frequency.

In terms of regulation 34(2)(d) of the NEMA EIA Regulations *"the environmental audit report contemplated in sub-regulation (1) must be conducted and submitted to the competent authority at intervals as indicated in the environmental authorisation"*. The NEMA EAs did not indicate the auditing frequency. In view of the above and since these authorisations did not comply with the requirements of regulation 26 (e) of the NEMA EIA Regulations, which requires an EA to specify the frequency of auditing of compliance with the conditions of the EA and compliance with the approved EMPRs, the auditing interval is annually.

4.3 PERIOD THAT APPLIES TO THIS COMPLIANCE ASSESSMENT

The audit review period for this environmental audit report is June 2020 to July 2021.

4.4 PROCEDURE USED DURING THE EXTERNAL AUDIT

The following was used as a procedure for the compliance assessment i.e.:

- Desktop assessment of the approved EMPRs and EAs. The desktop assessment was used to list all commitments and conditions indicated in the EMPRs and EAs. Also as part of the desktop assessment, we had access to previous audit reports in order to establish the "direction of travel" where possible (i.e. has the mine progressed or regressed in its compliance status).
- The Environmental Audit was conducted by reviewing and abstracting the commitments (management and mitigation measures) from the approved EMPRs and conditions from the approved EAs. In cases where the commitments had not been fulfilled, such has been indicated

in this report. As described further below, we also had extensive electronic interviews with the relevant Mafube Colliery personnel. These interviews were held over a period of five days.

- To assess the compliance with the conditions and commitments of the approved EAs and EMPs and reach our findings, we conducted extensive interviews with the mine personnel. We also reviewed comprehensive documentation, which was provided by the mine on a collaboration platform. Due to the outbreak of the COVID-19 pandemic and as means of preventing the spread of COVID-19, we did not have physical interview rather virtual interviews. For this purpose, we used Microsoft Teams meetings for conducting the interviews. A virtual audit was conducted with relevant mine personnel over three days. This was used to determine measures implemented to mitigate potentially negative environmental impacts, and measures to enhance positive impacts, which determined compliance of the mining operation with the conditions and commitments in the approved EAs and EMPs. The virtual interviews were supplemented with review documented evidence of compliance (i.e. reports, documents and photos).
- One-day site visit/inspection was conducted with the mine personnel to determine measures implemented to mitigate potentially negative environmental impacts, and measures to enhance positive impacts.
- In addition to assessing the compliance to commitments, the adequacy of the information was also assessed through evaluating activities and verifying such against the descriptions and risk assessments provided in the approved EAs and EMPs, and whether location specific risks and the necessary specialist assessments had been considered.

4.5 EVALUATION CRITERIA USED DURING THE COMPLIANCE ASSESSMENT

Evaluation criteria used during the compliance assessment include the following:

- Are the measures and structures as indicated in the environmental management programme and EAs in place?
- Are the measures adequate and structures maintained, and at what frequency?
- Has the monitoring as indicated in the approved EMPs and EAs been conducted? (i.e. data, reports).
- Is the reported frequency of the monitoring in accordance with the approved EMPs and EAs? (i.e. reports).
- Determining whether any new measures are required to prevent or mitigate the existing environmental impacts and/or other potential impacts.

Evaluation of the appropriateness and adequacy of the approved EMPs and EAs included the following:

- Compliance with relevant laws pertaining to the environment.
- Compliance of mining and associated activities with the approved EMPs and EAs. (i.e. is the mine conducting activities that are not indicated or provided for in the approved EMPs and EAs?)

4.6 RATING OF FINDINGS

The compliance category was rated as indicated in the table below.

Table 1: Compliance Categories

Compliance category	Findings
Condition/mitigation measure/commitment has been achieved with evidence provided in the form of a document or site verification.	Compliant
The operation failed to comply with, or satisfy the requirements of an applicable condition, commitment and/or mitigation measure. Non-compliances include instances where although the current condition or mitigation measure has been achieved, there have been new impacts and risks arising from the activity; whether the current measures are effective and whether there are any shortcomings which need to be address through changes in the systems or amendments.	Non-Compliant
The condition, commitment and/or mitigation measure is not applicable. A “not applicable” finding is also noted in event where such condition, commitment and/or mitigation measure is either obsolete, an alternative effective measure is utilised or the commitment and/or mitigation measure is not yet relevant but is still relevant for future activities.	Not Applicable
The condition, commitment and/or mitigation measure that does not require any specific action.	Noted

5. ASSUMPTIONS, UNCERTAINTIES AND GAPS IN KNOWLEDGE

Although all reasonable attempts were made to verify comments made during interviews held with the relevant Mafube Colliery personnel as well as the review of documentations, it is assumed that such comments and documents provided are a true and accurate reflection of the audit.

6. EMPR RECOMMENDATION REPORT

Regulation 34(4) of the EIA regulation, 2014 state the following:

Where findings of the Environmental Audit Report indicate:

- insufficient mitigation of environmental impacts associated with the undertaking of activity;
- insufficient levels of compliance with the Environmental Authorisation or EMPr's and where applicable the closure plan;

the holder must when submitting the environmental audit report to the competent authority in terms of sub regulation (1), submit recommendations to amend the EMPr's or closure plan in order to rectify shortcomings identified in the environmental audit report and such recommendations must have been subjected to a public participation process as agreed to by the competent authority.

Based on the findings of the audit, recommendation for amendments to the EMPrs and EAs are proposed. These proposed amendments are to include the following:

- Environmental risks and associated mitigation measures as applicable to the operational phase of the Rail Loop, Conveyor 1 and Conveyor 2, especially with regard to assessment of environmental pollution and management thereof.
- Removal of the commitment requiring Mafube Colliery keep the current infrastructure, especially those authorised under the mine's water use licence outside the 1:50 and 1:100 year flood lines.
- Removal of the commitment requiring Mafube Colliery keep the current infrastructure, especially those authorised under the mine's water use licence outside 100 meters from the identified wetland areas.
- Replacing the condition in the Pan 1 EA requiring the Mafube Colliery to identify and adopt a Pan as a biodiversity offset measure for the mining of Pan 1 and Pan 2 by a condition requiring Mafube Colliery to reconstruct Pan 1 and Pan 2 as in line with the Pan 1 and pan 2 reconstruction Integrated Water Use License.

7. RESULTS OF THE EXTERNAL AUTHORISATIONS AND EMPR AUDIT

The results of the Environmental Audit are given in the Tables below. The tables below outline the EMPrs and EAs of the authorised activities at Mafube Colliery.

7.1 MAFUBE SPRINGBOKLAAGTE: PAN 1 ENVIRONMENTAL AUTHORISATION REFERENCE NUMBER: 17/2/3N-221, DATED 18 SEPTEMBER 2013

Condition number	Condition	Finding	Observation/ Audit Evidence
3.1.	Authorisation of the activity is subject to the applicant identifying and adopting a Pan in the same catchment area with similar characteristics as Pan 1 as a Biodiversity Offset Measure.	Non-Compliant	<p>Mafube Coal Mining (Pty) Limited did not identify and adopt an area (Pan) as an offset measure. Instead the mined pans will be reconstructed as a measure to address the impact caused by the mining of the pans. The pans are in the process of being backfilled and rehabilitated to recreate a pan system in the same area as the original location of Pan 1 and Pan 2, which forms part of the rehabilitation plan approved.</p> <p>An IWUL for the reconstruction of Pan 1 and Pan 2 has been awarded to Mafube Colliery.</p> <p>The profiling of the pans in terms of topography and soil characteristics forms part of the Pan Mining Rehabilitation plan and report, compiled in July 2015. Further to the above, Preliminary designs, report for the Pan-re-establishment project (Jones and Wagener) (Report No JW133/15/F047 – Rev 0)” was compiled for the reconstruction of the pans.</p> <p>The rehabilitation of the pans are undertaken in line with the above reports and external rehabilitation specialist together with the mine's own rehabilitation team are appointed and used to conduct the rehabilitation, management and monitoring of the rehabilitation (reconstruction) of the pans.</p> <p>This condition must however be amended to replace the offsetting programme commitment with the pan reconstruction commitment.</p>
3.2.	Authorisation of the activity is subject to the conditions contained in this authorisation, which form part of the environmental authorisation and are binding on the holder of the authorisation.	Noted	The mine understands and takes cognisance of this condition.
3.3.	The holder of the authorisation must ensure compliance with these conditions by any person acting on his or her behalf, including but not limited to, an agent, sub-contractor, employee or person rendering a service to the holder of the authorisation.	Noted	The mine understands and takes cognisance of this condition.
3.4.	The activity which is authorized may only be carried out at the property indicated above.	Compliant	The activity undertaken on the properties as indicated in the environmental authorisation, namely the remaining extent of farms Springboklaagte 416 JS and Elandsfontein 433 JS.
3.5.	Any changes to, or deviations from, the project description set out in this authorisation must be approved by the Department before such changes or deviations 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 deviations and it may be necessary for the holder of the authorisation to apply for further authorisation in terms of the regulations.	Compliant	No deviations to the overall project description have occurred. Rehabilitation of Pan 1 has included the area being backfilled, replacement of sub-soils in the layering sequence as they were removed.
3.6.	In the event that the impacts exceed the significance as predicted in the environment impact report, authorisation may be suspended after proper procedures have been followed.	Noted	The mine understands and takes cognisance of this condition.
3.7.	In the event of any dispute concerning the significance of a particular impact, the opinion of the Department in respect of its significance will prevail.	Noted	The mine understands and takes cognisance of this condition.
3.8.	The Department may change or amend any of the conditions of this authorisation if, in the opinion of the Department, it is environmentally justified.	Noted	The mine understands and takes cognisance of this condition.
3.9.	This activity must commence within a period of three (3) years from the date issue. If commencement of the activity does not occur within that period, the authorization lapses and a new application for the environmental authorization must be made in order for the activity to be undertaken.	Compliant	Mining activity had commenced within the required three-year period from date of issue i.e. by 18 September 2016.
3.10.	The holder of this authorisation is responsible for compliance with the provisions for Duty of the Care and Remediation of Environmental Damage contained in Section 28 of the	Noted	The mine understands and takes cognisance of this condition.

Condition number	Condition	Finding	Observation/ Audit Evidence
	National Environmental Management Act, 1998 (Act 107 of 1998).		
3.11.	This authorisation does not negate the holder of the authorisation, responsibility to comply with any other statutory requirements that may be applicable to the undertaking of the activity.	Noted	The mine understands and takes cognisance of this condition.
Appeal of authorisation			
3.12.	The holder of the authorisation must notify every registered interested and affected party, in writing and within twelve (12) days of the date of this decision, of the outcome of the application.	Not Applicable	The EA was issued on the 13 th of September 2013. This condition is therefore not applicable to the current audit period. The audit team has however been provided with proof of submission of the notification of the EA to registered interested and affected parties and the notice include the date on which the authorisation was issued, appeal processes and advise the interested and affected party to the manner in which the decision can be accessed.
3.13.	The notification referred to above, must		
	a) Specify the date on which the authorisation was issued;		
	b) Inform the interested and affected party of the appeal procedure provided for in Chapter 7 of the Regulations; and		
	c) Advise the interested and affected party to the manner in which the decision can be accessed;		
	d) Be published in the newspaper contemplated in Regulation 54(2) (c) and which newspaper was used for the placing of advertisements as part of the public participation process.		
Management and monitoring of the activity			
3.14.	The Environmental Management Program (EMPr) dated 04th July 2013 and submitted as part of the Basic Assessment Report is hereby approved and must be implemented and adhered to throughout the lifecycle of the activity.	Noted	Refer to section 6.7 where the conditions of the EMPr for Pan 1 and Pan 2 were audited.
3.15.	The applicant must appoint an independent Environmental Control Officer (ECO) that will have the responsibility of monitoring and reporting on compliance with the conditions of this environmental authorisation as well as monitoring and reporting on the implementation of the approved EMPr.	Compliant	ECO services are undertaken by external independent environmental consultants, namely EkolInfo.
3.16.	The ECO must be appointed before the commencement of construction and the Department must be notified of such an appointment for communication purposes.	Compliant	The independent ECO was appointed prior to construction commencement on 3 March 2015. The appointment letter of EkolInfo was verified at the time of the audit.
3.17.1	The ECO must oversee and monitor the success of the rehabilitation activities.	Compliant	As mentioned, EkolInfo has been appointed as the ECO and the plan is that they will remain in this role until rehabilitation has been completed. The ECO conducts inspections twice every week and produces a report to the mine. Photographic evidence is also taken. A report compiled by the ECO is submitted to the DMRE and DWS on a six monthly basis. A copy of the report and proof of submission was made available to the auditors.
3.17.2	<p>During the construction phase, the ECO must submit monthly compliance reports to the Department in writing and copy an application with such reports.</p> <p>Where applicable, the ECO may negotiate the required frequency for the submission of the reports with the Department, which must be agreed to in writing by the Department. The reports must include a description of all activities on site, problems identified, transgressions noted, and remedial action implemented. All reports must reflect the Department's reference number of the project on the cover page.</p>	Not Applicable	Construction activities at Mafube Colliery were completed at the end of 2017 together with monthly ECO reports, hence the condition is no longer applicable. It must however, be noted that the Water Use License applicable to the mine also required an ECO to monitor and verify compliance to those License conditions culminating in quarterly ECO reports. These, together with weekly reports by the ECO, were verified at the time of the audit.
3.17.3	The ECO must maintain the following site:	Compliant	The ECO maintained and continues to maintain a site diary, weekly and

Condition number	Condition	Finding	Observation/ Audit Evidence
	<ul style="list-style-type: none"> A site diary Copies of all reports submitted to the Department A complaints' register of all environmental complaints regarding the proposed project and the remedies applied to such complaints 		<p>quarterly monitoring reports. Bi-annual reports are submitted to the DMRE and DWS. A complaints' register forming part of the mine's Enablon system is maintained, however this is the mine's register and not the ECO's. A hard copy of the register is kept with security at the mine's entrance gate. Complaints can be reported by completing the register, via email or other communication means such as telephone call. It was verified at the time of the audit that Pan 1 had no complaints on record.</p> <p>It is recommended that the ECO keeps his/her own complaints register as well.</p>
3.17.4	The ECO must remain employed until the rehabilitation measures as well as site clean-up are completed, and the site is handed over to the applicant by the contractor for operation.	Compliant	As mentioned, Ecolnfo has been appointed as the ECO and the plan is that they will remain in this role until rehabilitation has been completed.
3.17.	The holder of the authorisation must submit an environmental audit report to the Department upon completion of the construction and rehabilitation activities. The environmental audit report must be compiled by an independent environmental auditor and must indicate the date of the audit, the name of the auditor and the outcome of the audit in terms of compliance with the conditions of the authorisation as well as the requirements of the EMPr.	Not Applicable	Mining activities within the pans have been completed with backfilling of soils and material taking place. The spoils were shaped to ensure profiling of the proposed pan rehabilitation.
3.18.	The Department retains the right to monitor and/ or inspect the proposed development during both construction and operational phases.	Noted	The mine understands and takes cognisance of this condition.
3.19.	Identified areas for biodiversity offsetting must be declared non-mineable areas (i.e. offset protected areas) to protect the sensitive biodiversity and such declaration must be legally binding to everyone affected.	Noted	The reconstruction of Pan 1 has not commenced yet, however, Mafube Colliery Management takes note of this condition. According to the Mafube Pans Off-set Investigations Report (dated 15 June 2010), areas for biodiversity offsetting have been identified and declared non-mineable. Furthermore, the approved footprint area of the reconstruction of Pan 1 does not form part of identified areas for biodiversity offsetting.
3.20.	An Ecological Integrity of the site must be maintained by the establishment of a Management and Monitoring Plan.	Compliant	A <i>Pan Mining Rehabilitation</i> plan and report for Mafube Colliery was developed in July 2015 and verified at the time of the audit. This plan addresses 'Management and Monitoring'. Backfilling was done and the profiling of the depression is in the process of being finalised. No placement of topsoil is conducted as yet.
3.21.	Mafube Colliery must form a Management Committee with relevant stakeholders (DMR, DWA, MTP, Mpumalanga Wetland Forum, etc.) with regards to the establishment of the best possible method for the proposed offsetting programme for the identified pan to be managed and protected.	Not Applicable	<p>A Management Committee with the relevant stakeholders was formed by Mafube Colliery for the establishment of the best possible method for the proposed offsetting programme for the identified pan to be managed and protected. However, it must be noted that the establishment of the best possible method for the proposed offsetting programme for the identified pan to be managed and protected was not opted for, instead a reconstruction of the pans were decided upon and the Mafube Colliery has an approved IWUL and rehabilitation plan for this purpose. Therefore this condition is no longer applicable.</p> <p>It is therefore recommended that the EA be amended to remove this condition since the offsetting programme commitment was replaced with the pan reconstruction commitment.</p>
3.22.	A Management and Monitoring Plan for the offset areas must be established and implemented. The plans must involve relevant stakeholders for inputs on the protection of the identified Wetland Ecosystems and adopted throughout the life cycle of the mine.	Compliant	<p>Mafube Coal Mining (Pty) Limited did not identify and adopt an area (Pan) as an offset measure. Instead the mined pans will be reconstructed as a measures to address the impact caused by the mining of the pans. The pans are in the process of being backfilled and rehabilitated to recreate a pan system in the same area as the original location of Pan 1 and Pan 2, which forms part of the rehabilitation plan approved.</p> <p>An IWUL for the reconstruction of Pan 1 and Pan 2 has been awarded to Mafube Colliery.</p> <p>The profiling of the pans in terms of topography and soil characteristics forms</p>

Condition number	Condition	Finding	Observation/ Audit Evidence
			<p>part of the Pan Mining Rehabilitation plan and report, compiled in July 2015. Further to the above, Preliminary designs, report for the Pan-re-establishment project (Jones and Wagener) (Report No JW133/15/F047 – Rev 0)” was compiled for the reconstruction of the pans.</p> <p>The rehabilitation of the pans are undertaken in line with the above reports and external rehabilitation specialist together with the mine's own rehabilitation team are appointed and used to conduct the rehabilitation, management and monitoring of the rehabilitation (reconstruction) of the pans.</p> <p>This condition must however be amended to replace the offsetting programme commitment with the pan reconstruction commitment.</p>
<i>Commissioning and operation of the activities</i>			
3.23.	Fourteen (14) days written notice must be given to the Department that the activity will commence. Commencement for the purposes of the condition includes site preparation. The notice must include a date on which it is anticipated that the activity will commence and must include the name and contact details of the appointed ECO.	Not Applicable	This condition is not applicable to the current auditing period. It must however be noted that Mafube Colliery did submit a letter to the Mpumalanga Department of Economic Development, Environment and Tourism dated 3 March 2015. The aforesaid letter informed the Department that the activity is to commence within 14 days from the date of the letter and on 17 March 2015. In addition, the letter advises of the appointment of EkoInfo as the ECO.
3.24.	Any form of hunting, poaching, snaring or trapping is prohibited within the mine area, environmental awareness must be provided to the workforce.	Compliant	Forms of hunting, poaching, snaring and trapping are strictly prohibited at Mafube Colliery. All individuals working at the mine have to undergo induction and training, which included emphasis on this. ‘Toolbox Talks Guides’ are also developed at the mine and it is in these discussions on the sites that prohibitions such as hunting, and poaching are regularly discussed. Photos of prolific animal life and abundance at the mine were observed by the auditor.
3.25.	Mine vehicles and machinery must make use of the haul road between Pan 1 and Pan 2.	Not Applicable	The haul road between the pans is no longer in place due to the mining through of the pans and backfilling activities as already conducted.
3.26.	The excavation of Pan 1 will be an extension of the existing Mafube Colliery mining activities, so new infrastructure must be constructed as part of the project.	Not Applicable	No new infrastructure has been established at the mining area.
3.27.	All pans must be profiled to determine their topography and soil characteristics.	Compliant	The profiling of the pans in terms of topography and soil characteristics forms part of the Pan Mining Rehabilitation plan and report, compiled in July 2015. The report (JW133/15/F047 – Rev 0), attached as Appendix C to the Pan Rehabilitation plan and report, includes detailed profiles of test pits, summary of physical laboratory testing of soils, summary of chemical and physical dispersive testing, and creep settlement calculations.
3.28.	Vegetation must not be cleared from the site prior to stripping.	Not Applicable	Stripping activities within the pan area is not undertaken anymore. Backfilling of the mined-out pans have already commenced.
3.29.	A suitable qualified botanist must conduct a thorough examination of all areas of natural vegetation within the mining and surface infrastructure boundary, before site establishment commences, and mark out threatened plants for relocation.	Compliant	Mr Willem de Frey of EkoInfo was appointed as botanist. Mr de Frey conducted an examination of areas of natural vegetation and marked out threatened plants for relocation. Such plants were removed to the Mafube Colliery Nursery and will be utilised during the rehabilitation and revegetation phase of the pans.
3.30.	All thick weathers soils from the catchment areas of the pans must be stockpiled separately specifically for their rehabilitation. The stockpiled soils will be seeded and the soils to be used must be typically Katspruit and Rensburg soils.	Compliant	Pan 1 and Pan 2's subsoils have been replaced in the profile order as they were removed. Only clay layers are left to be replaced. Vegetation has started to be established on the stockpiles and photographic evidence was verified at the time of the audit. Mafube Colliery appointed EkoInfo CC to eradicate the alien invasive trees (<i>Acacia mearnsii</i>) on the pan reconstruction topsoil stockpiles. A report compiled after the eradication of the alien plant species was made available to the auditors during the audit.

Condition number	Condition	Finding	Observation/ Audit Evidence
3.31.	The water monitoring must take place prior to the discharge of water from Pan 1, during the discharge period as well as after the discharge period so as the monitor and mitigate any impacts to the downstream ecosystems.	Not Applicable	The reconstruction of Pan 1 and the discharge of water from the Pan 1 thereof has not commenced yet, therefore this condition is not applicable.
3.32.	Water from the pan must be released into the northern stream as recommended by Golder Associates (2009) who indicated that pipelines for this purpose already exist.	Not Applicable	Refer to clause 3.31 audit notes.
3.33.	The discharge of water must occur at a low rate, thus causing a weaker flow that would not erode the river channels.	Not Applicable	Refer to clause 3.31 audit notes.
3.34.	The soils must be stripped from Pan 1 according to the recommendations made by Terrasoil Science (2011) and placed directly at the proposed recreated site.	Noted	Refer to section 6.7 where the conditions of the EMPr for Pan 1 and Pan 2 were audited.
3.35.	The elevation of the pan must be such that, should the researchers indicate that the pan is not functioning as intended, the area can be made free draining.	Not Applicable	The pan system has not fully been recreated as yet.
3.36.	The recreation of the soils on the site must be conducted in such a manner that the functionality of a wetland system is established in some form.	Not Applicable	The pan system has not fully been recreated as yet.
3.37.	Grasses on the berms must be established in order to prevent soil erosion.	Compliant	Photographic evidence suggested that vegetation has established on the stockpiles and berms via natural succession.
3.38.	Blasting must be limited to daylight working hours during the week whenever possible, and under adverse conditions.	Not Applicable	Mining activities ceased in November 2018, therefore, blasting is no longer conducted, therefore this condition is no longer applicable.
3.39.	The overburden spoils must be placed adjacent to the position of the final void, shaped to ensure free drainage topography towards the existing watercourses, top-soiled and re-vegetated to create stable 16° slopes.	Compliant	Overburden spoils have been backfilled.
3.40.	The soils must be re-vegetated with seed collected from the surrounding pans. Where necessary, organic material must also be introduced into the base of the pan, the aim is to rehabilitate the pan to its pre-mining level of biodiversity.	Not Applicable	The pan system has not yet been recreated. Harvesting of plants and seeds before mining at Pan 1 and Pan 2 was undertaken and stored in seed banks. The vegetation species will be re-established on site after soil placement to minimise erosion in the area and to prevent siltation of the pan systems after reconstruction. Mafube Colliery has constructed a plant nursery where harvested plants and seeds will be planted and grown. These plants will then be used in future rehabilitation efforts at Pan 1 and Pan 2.
3.41.	The runoff from the rehabilitated soils must be directed past the active mining areas, so that no impact on the water quality within the un-named watercourse is expected.	Not Applicable	Post-mining rehabilitation and water management at Pan 1 is not yet applicable.
3.42.	Mafube Colliery must continue with dust suppressions, dust monitoring, water management and water quality monitoring (surface and ground water) as part of the overall EMPR commitments.	Compliant	Dust suppression is undertaken on haul roads at Mafube Colliery. This will be continued with until such a time that the haul roads are no longer in use or rehabilitated. Dust fallout monitoring is monitored monthly by and external contractor (Aquatico) with reports thereto provided for review. Mafube Colliery has a surface water and groundwater monitoring programme in place as currently managed by Mpumamanzi, with surface water quality being monitored monthly and groundwater quality on a quarterly basis.
3.43.	A Water Management dam must be constructed to contain affected run-off from the crusher and workshop areas and reused primarily for dust suppressions.	Not Applicable	Two pollution control dams, known as PD1 and PD2, were constructed at the mine for water management requirements. A 'Water Management dam' with crusher and workshop areas do not apply to the mine.
3.44.	Silt and oil traps must be installed below the workshop and refuelling bays.	Compliant	Silt traps have been installed in the Pollution Control Dams (PD1 and PD2) at the workshops. This was confirmed during the site visit conducted at the mine.
3.45.	If the restoration or reconstruction of the pan after mining is not feasible, Mafube must compensate for the loss of habitat for numerous species dependent on a healthy environment.	Noted	The pan system has not yet been recreated. The mine understands and takes cognisance of this condition.
3.46.	The area where the pan was originally located must be rehabilitated according to the commitments in the original EMPR (Oryx Environmental, 2003).	Not Applicable	The rehabilitation of the pan is not yet applicable as on backfilling with spoils has taken place (refer to previous discussions with regards to the backfilled area being left for approximately 1 – 2 years in order for any subsidence to occur prior to the rehabilitation and revegetation. Ongoing work is conducted in preparation of the future rehabilitation and pan re-creation. Mafube Colliery has constructed a plant nursery where harvested plants and seeds will be
3.47.	All remaining wetlands and riparian areas in the zone must therefore be maintained and rehabilitated to the extent that they can fulfil their ecological functions to the extent possible.	Not Applicable	

Condition number	Condition	Finding	Observation/ Audit Evidence
			planted and grown. These plants will then be used in future rehabilitation efforts at Pan 1 and Pan 2.
3.48.	If any archaeological remains are exposed during the construction phase, construction must be terminated immediately, and the Provincial Heritage Resources Authority must be notified accordingly.	Not Applicable	Construction activities at Mafube Colliery were completed at the end of 2017, therefore the condition is no longer applicable.
<i>General</i>			
3.49.	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.	Compliant	An electronic and hard copy of the EA is kept at the mine's environmental office.
3.50.	Where any of the applicant's contact details changes, including the name of the responsible person, the physical or postal address and/ or telephonic details, the applicant must notify the Department as soon as the new details become known to the applicant.	Not Applicable	No changes to the contact details of Mafube Coal Mining has been made during the audit period, therefore the condition is no longer applicable.
3.51.	Non-compliance with a condition of this authorisation may result in criminal prosecution or other actions provided for in the National environment management Act, 1998 and the regulations.	Noted	The mine understands and takes cognisance of this condition.
3.52.	National Government, provincial government, local authorities or committees appointed in terms of the conditions of this authorisation 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 construction or operation subsequent to construction be temporarily or permanently stopped for reasons of non-compliance by the applicant with the conditions of authorisation as set out in this document or any other subsequent document emanating from these conditions of authorisation.	Noted	The mine understands and takes cognisance of this condition.

7.2 MAFUBE SPRINGBOKLAAGTE: PAN 2 ENVIRONMENTAL AUTHORISATION REFERENCE NUMBER: 17/2/3 G NK-25, DATED 29 APRIL 2013

Condition number	Condition	Finding	Observation/ Audit Evidence
Pan 2 EA (S24G Application Authorisation) Conditions			
<i>8. Conditions</i>			
<i>8.1. Specific Condition</i>			
8.1.1	No activity such as construction camps, temporary housing, temporary ablution facilities, storing of equipment and material may take place below the 1:100 year flood line of any watercourse or within 100 metre of any wetland or riparian zone.	Compliant	The pan 2 reconstruction site is situated away from the nearest 1:100 flood line. Based on the site observation it was confirmed that no construction camps, temporary housing, temporary ablution facilities, storing of equipment and material were undertaken within the pan 2 reconstruction project area hence none of the above were undertaken below the 1:100 year flood line of any watercourse or within 100 metres of any wetland or riparian zone.
8.1.2	All mitigation measures mentioned in the impact assessment must be implemented to minimise or avoid the impact to the aquatic and wetland ecosystems.	Noted	Refer to section 6.7 where the conditions of the EMP for Pan 1 and Pan 2 were audited.
8.1.3	The water must only be released into the Northern stream which is in the Southern side of R104 of the road. This will allow the flow of water along the channel for some distance before reaches downstream wetland area. Erosion control measure must be maintained at the discharge point along the northern stream.	Not Applicable	The commitment refers to the dewatering of the pans prior to the commencement of mining. These commitments are no longer applicable as such refers to pre-construction activities with Mafube Colliery currently backfilling and rehabilitating such area.
8.1.4	The construction of the diversions and any other water courses (i.e. wetland areas or	Noted	The mine understands and takes cognisance of this condition.

Condition number	Condition	Finding	Observation/ Audit Evidence
	riparian zones) is subject to the permit/licence requirements of the National Water Act, 36 of 1998).		
8.1.5	Where water flow is required to be diverted; it may only be diverted within the riverbed zone.	Not Applicable	No water flow has been required to be diverted.
8.1.6	Suitable water toxicity monitoring of the downstream site (A1) must be conducted at least once during and after the activity, so as to monitor and mitigate any impacts to the downstream ecosystem.	Compliant	Biomonitoring is conducted on a bi-annual (seasonal) basis at Mafube Colliery to assess the impact of the mining activities on aquatic biota. Biomonitoring is undertaken upstream and downstream of the mining site. The downstream biomonitoring point (NT3) is at the same location as the preferred A1 site. Biomonitoring is conducted by Digby Wells.
8.1.7	The existing long-term ecological bio-monitoring programme must include an additional once-off survey at site A1 after the proposed activity to monitor any impact on the aquatic biota as result of the release of water into the Northern stream.	Not Applicable	No water is discharged into the area. Site A1 is monitored by Mpumanazi. The commitment refers to the dewatering of the pans prior to the commencement of mining. These commitments are no longer applicable as such refers to pre-construction activities with Mafube Colliery currently backfilling and rehabilitating such area.
8.1.7	Where vegetation stripping does occur, it must take place in parallel with the progress of the road construction in order to ensure that erosion is minimised and managed, and gabions must be used to stabilise riverbanks	Not Applicable	Vegetation stripping had not been undertaken at the time of the audit. The road construction activity referred to is not applicable to the Pan 2 EA.
8.1.8	Soils that have become compacted during construction must be loosened to an appropriate depth to allow seed germination.	Not Applicable	This condition is not currently applicable as only backfilling of the pans area has to date taken place. Once the correct elevation of backfilled spoils material is confirmed (with 1-2 years) the area will be rehabilitated, and compacted soils ripped and revegetated. During rehabilitation at the mine, soils are ripped and prepared before seeding takes place.
8.1.9	Surface water rich in sediments and other pollutants must be prevented from entering watercourses and wetlands.	Compliant	No mining water is released from the site. Once rehabilitated however, surface water would flow in a North-Westerly direction. Storm water management principles are included in the Integrated Water Management Procedure (MFB_MN_003.2.2.1), dated January 2016, for Mafube Colliery. The main principle for storm water management at Mafube Colliery is based on separating clean and dirty water. These principles were also captured in the Pit Storm Water Management Plan, dated March 2016, and in the Integrated Water and Waste Management Plan, dated 2017.
8.1.10	All pans must be profiled to determine their topography and soil characteristics.	Compliant	The profiling of the pans in terms of topography and soil characteristics forms part of the Pan Mining Rehabilitation plan and report, compiled in July 2015. The report (JW133/15/F047 – Rev 0), attached as Appendix C to the Pan Rehabilitation plan and report, includes detailed profiles of test pits, summary of physical laboratory testing of soils, summary of chemical and physical dispersive testing, and creep settlement calculations. Soil mapping of the pans was completed by Terrasoil Science (The Mafube Coal Mine Pan Wetland: Soil Survey, Chemical, Physical and Hydro-pedological Features, July 18th, 2011 and Pan Mining Rehabilitation Plan and Report: Mafube Colliery, Mpumalanga Province, 8 July 2015).
8.1.11	The size of each pan's catchment area must be accurately determined.	Compliant	The pan catchment areas were determined and presented as part of the following document Preliminary designs report for the Pan-re-establishment project (Jones and Wagener) (Report No JW133/15/F047 – Rev 0), dated August 2015.
8.1.12	All thick weathered soils from the catchment areas of the pans must be stockpiled separately specifically for their rehabilitation, during stockpiling the soils will be seeded. The soils to be used will be typically Katspruit or Rensburg soils.	Not Applicable	Only backfilling have been done, so the pan system has not yet been recreated.
8.1.13	Depressions must be created within the spoils to the same specification as determined during the pan profiling with their low point at least three metres above the decant elevation.	Not Applicable	

Condition number	Condition	Finding	Observation/ Audit Evidence
8.1.14	The stockpiled soils will be returned to the shaped depression and levelled to emulate the original pan profile;	Not Applicable	Only backfilling have been done, so the pan system has not yet been recreated.
8.1.15	The elevation of the pan must be such that, should the researchers indicate that the pain is not functioning as intended, the area can be made free draining;	Not Applicable	Only backfilling have been done, so the pan system has not yet been recreated.
8.1.16	The soils must be re-vegetated with seed collected from surrounding pans. Where necessary, organic material must also be introduced into the base of the pans, the aim is to rehabilitate the pans to reasonable level of biodiversity;	Not Applicable	Only backfilling have been done, so the pan system has not yet been recreated.
8.1.17	Monitoring must be instituted to quantify the recharge through the pan floor back to the mining operation. This will involve moisture measurement techniques, as well as water balance monitoring.	Compliant	Despite the plan having not been created (pan reconstruction has not been completed), monitoring of water recharge from the mined out workings is undertaken – the mine has three scavenger bore holes and after construction these will depict input water levels. Recharge values were calculated, and water balances developed as part of the Pan Mining Rehabilitation plan and report that was compiled in July 2015. Furthermore, Delta H (Delta-H Water System Modelling Pty Ltd) was appointed to develop a groundwater and geochemical model for the prediction of post closure mine water discharge volume and chemistry for Mafube Colliery. The resultant report was provided. Golder Associates was appointed to update the water balance for Mafube Colliery. The latest water balance was conducted in December 2017 as part of the IWWMP update.
8.1.18	The re-establishment pans should preferably not require additional water from the mining operation, but that once vegetation has established, the pans must be sustainable in terms of long term erosion and wind impacts, as the existing pan is not perennial.	Not Applicable	The pan system has not yet been recreated.
8.1.19	Should the recharge from the pans be excessive the rehabilitated pan area must be made free draining.	Not Applicable	The pan system has not yet been recreated.
8.1.20	The stripping, stockpiling and placement of soils material for pan recreation must be done according to the recommendation of Terrasoil Science (2011). The Mafube Coal Pan Wetland: Soil Survey, Chemical, Physical and Hydropedological features and functioning as well as conceptual design for the recreated wetland system.	Compliant	Stripping, stockpiling and placement of soils for pan recreation is done in accordance to the Terrasoil Science report of 2011.
8.1.21	Measures to ensure that no pollutants such as paper, plastic, metal or glass shall be spread to the surrounding environment must be strictly enforced.	Compliant	Mafube Colliery implements an environmental training programme, which includes induction as well as environmental awareness. Mafube Colliery has also implemented the <i>Waste management and monitoring procedure</i> (MFB_MN_003.2.2.1) with the aim of indicating the handling, sorting, storage, disposal and relevant monitoring required for the waste generated and Mafube Coal.
8.1.22	A registered blaster must supervise all blasting and rock splitting operations at all times, and adequate warning must be given to the surrounding occupants and emergency services prior to any blasting.	Not Applicable	Mining activities ceased in November 2018, therefore, blasting is no longer conducted, therefore this condition is no longer applicable.
8.1.23	Dust control mechanisms must be in place and implemented at all times to prevent health risks to surrounding communities as well as plants and aquatic life. This includes the watering of any access roads.	Compliant	Dust suppression is conducted on roads by watering surfaces with dust suppression water tankers within the Mafube Colliery mining rights area.
8.1.24	The water must only be released into the Northern Stream which is on the Southern side of the R104 road. This would allow the water to flow along the channel for some distance before it reached the downstream wetland areas. Erosion control measure must be maintained at the discharge point along the northern stream.	Not Applicable	Discharge to watercourses has not taken place. Water from ramp 6 is dewatered.
8.1.25	Suitable water toxicity monitoring of the downstream site A1 must be conducted at least once during and after the activity, so as to monitor and mitigate any impacts to the downstream ecosystem.	Compliant	Biomonitoring is conducted on by Digby Wells a bi-annual (seasonal) basis at Mafube Colliery to assess the impact of the mining activities on aquatic biota. Biomonitoring is undertaken upstream and downstream of the mining site. It must be noted that biomonitoring point NT3 is the same locality as the A1 site.


Condition number	Condition	Finding	Observation/ Audit Evidence
			The downstream biomonitoring point (NT3) is at the same location as the preferred A1 site.
8.1.26	The existing long term ecological bio-monitoring programme must include an additional once-off survey at site A1 after the proposed activity to monitor any impact on the aquatic biota as a result of the release of water into the Northern stream.	Not Applicable	Discharge to watercourses has not taken place. Water from ramp 6 is dewatered. Water accumulating in the Pan 1 area is removed via pipes which soon have to be removed. The mine needs to establish a plan towards conducting a once-off survey at the A1 site.
8.1.27	All personnel working for or doing work on behalf of Mafube with specific reference to the project must be sensitized to the requirement of the South African 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 accordingly.	Compliant	Mafube Colliery confirmed that no human remains have yet been identified. In the event that heritage and archaeological artefacts are uncovered, the activity is immediately ceased and the mine's environmental department notified. Two gravesites were identified and known to all working in the area. Induction presentation slides were reviewed and it was found that heritage and archaeological awareness forms part of the awareness training – the same applies to the Toolbox Talks Guide for the mine.
8.1.28	The requirements of the Mine Health and Safety Act, 1996 (Act No. 29 of 1996), must be adhered to.	Compliant	Health and Safety Legal compliance audits are conducted at Mafube Colliery. Since the mining at the pans is a continuation of the overall mining activities of Mafube Colliery, the verification of the health and safety compliance at the pans forms part of health and safety and OHSAS 18001 audits.
8.1.29	Relevant requirements of the National Water Act, 1998 (Act No. 36 of 1998) must be complied with as prescribed by the Department of Water Affairs and Forestry.	Noted	Mafube Colliery has a Water Use Licence ("WUL") for Pan 1 and Pan 2 (Licence No 04/B12C/CI/2673) specifically in terms of Section 21(c) and (i) of the National Water Act, 1998. An audit on compliance with the conditions as contained in the WUL was also conducted by Geovicon during the same period i.e. 13 – 17 July 2020.
9. General Conditions			
i.	Any changes to, 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 effected. 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 changed or deviations.	Not Applicable	No deviations to the overall project description have occurred. Rehabilitation of Pan 2 has included the area being backfilled, replacement of sub-soils in the layering sequence as they were removed.
ii.	The applicant must notify me, in writing, at least 10 (ten) days prior to the change of ownership, project developer or the alienation of any similar rights for the activity described in this letter. The applicant must furnish a copy of this document to the new owner, developer or person to whom the rights accrue that the conditions herein are binding on them.	Not Applicable	No change of ownership, project developer or the alienation of any similar rights for the activity described in this EA has been effected, therefore the condition is no longer applicable.
iii.	Where any of the applicant's contact details change, including the name of the responsible person, the physical or postal address and/or telephonic details, the applicant must notify the Department as soon as the new details become known to the applicant.	Not Applicable	No changes to the contact details of Mafube Coal Mining has been made during the audit period, therefore the condition is no longer applicable.
iv.	The applicant shall be responsible for ensuring compliance with the conditions contained in this letter by any person acting on his behalf including but not limited to, an agent, servant, or employee or any person rendering a service to the applicant in respect of the activity, including but not limited to, contractors and consultants.	Noted	The mine understands and takes cognisance of this condition.
v.	The applicant must notify this Department within (24) twenty-four hours if any condition of this authorisation cannot, or is not, adhered to. The notification must be supplemented with reasons for non-compliance. The applicant must within twelve (12) working, days of receipt of this environmental Authorisation	Noted	No reportable incidents have occurred for the Pan 2 works. The mine understands and takes cognisance of this condition. An example was however shared by the auditees of how incidents of reportable nature are handled, addressed and closed out.
a.	Advertise the issuing of the Authorisation in the regional and/or local newspaper.	Compliant	Proof was provided at the time of the audit that newspaper notices or specific notifications to registered I&APs were made.
b.	Inform all interested and affected parties registered during the public participation process of the decision.	Not Applicable	This condition is not applicable to the current audit period. However proof was provided at the time of the audit that newspaper notices or specific notifications

Condition number	Condition	Finding	Observation/ Audit Evidence
c.	The above state at least the following:		to registered I&APs were made.
i.	That an authorisation has been issued to the applicant to proceed with the construction and operation of eh activity.		
ii.	That any appeals against the issuing of the authorisation must be lodged with the MEC for Agriculture and Land Administration within 30 days from the date on which the EA has been issued to the applicant and in the format and at the address stipulated in the authorisation.		
iii.	Include that date on which the EA as issued to the applicant and the date by which appeals must reach the MEC,		
iv.	Indicate where copies of this authorisation can be viewed/obtained.		
v.	The applicant must ensure compliance with the conditions contained in the Record of Decision by any person acting on his behalf, including but not limited to, an agent, employee or any person rendering a service to the applicant in respect of the activity, including but not limited to contractors and consultants.		
10. Management and Monitoring of the activity			
10.1.1	An operational Environmental Management Plan (“EMP”) prepared by Clean Stream Environmental Services cc dated December 2012 which fulfils the requirements of this authorisation submitted to the Department must be implemented.	Noted	Refer to section 6.7 where the conditions of the EMP for Pan 1 and Pan 2 were audited.
10.1.2	Environmental Officer must be appointed to secure compliance with the conditions of this environmental authorisation; failure to comply with the condition is an offence in terms of section of NEMA.	Compliant	Ms Ingrid Sithole was appointed as the mine's Environmental Co-ordinator. She is responsible for ensuring compliance to the conditions of the EA.
10.1.3	The holder of the authorisation must submit environmental audit report to the department.	Compliant	Environmental audit reports are submitted biennially to the Department. All current and prior external audit reports were submitted to the DEFF (previously the DEA) as well as the DMRE. Proofs of the 2020 submissions were verified during the audit and newspaper advertisements for audit reports public opportunity to review were also undertaken in the previous auditing cycle.
10.1.4	The Department retains the right to monitor and/or inspect the proposed project during operational phases.	Noted	The mine understands and takes cognisance of this condition.

7.3 MAFUBE SPRINGBOKLAAGTE: CONSTRUCTION OF CONVEYOR, RAIL LOOP, ROAD DIVERSION, PIPELINES AND SUB-STATION REFERENCE NUMBER: 17/2/5 NK-53, DATED 24 JULY 2006

Condition number	Condition	Finding	Observation/ Audit Evidence
The construction of conveyor, rail loop, road diversion, pipelines and substation Environmental Authorisation Conditions			
<i>General conditions</i>			
1.	This Authorisation refers only to the project specified above and described in the Record of Decision. A separate application must be lodged for any other development and/or activity at or near the proposed Mafube linear infrastructure which is covered by Section 21 and 22 of the Act and Government Notice RI 182 and RI 183 of 5 September 1997.	Noted	The mine understands and takes cognisance of this condition.
2.	Authorisation is only granted in terms of Section 22 of the Act and does not exempt the	Noted	The mine understands and takes cognisance of this condition.

Condition number	Condition	Finding	Observation/ Audit Evidence
	holder from compliance with any other relevant legislation.		
3.	No development may take place on the area of concern without the necessary permits/approvals and/or service agreements, where it is relevant, from other authorities.	Noted	The mine understands and takes cognisance of this condition.
4.	Copies of the relevant documents mentioned in 3 above, must be forwarded to this Department within three (3) months of the issuing of this Authorisation.	Compliant	An Addendum EMP and WUL were submitted to the Department of Mineral Resources and Energy and the Department of Water and Sanitation. Proof of submissions were provided for review during the audit period.
5.	This Department may change or amend any of the conditions in this Authorisation if, in the opinion of the Department is environmentally justified.	Noted	The mine understands and takes cognisance of this condition.
6.	The development must comply with all mitigatory measures as set out in the documentation submitted for this application.	Noted	The mitigatory measures for this specific development were included as part of Mafube Coal's Environmental Management Programme for the Beneficiation Plant, Discard Facility and Linear Infrastructure. This EMP, together with others applicable to the mine were consolidated into a Main Aligned EMP granted by the MDALA on 12 November 2019 (License no: MP30/5/1/2/2/172 MR).
7.	A copy of this Authorisation must be made available at the offices of Anglo Coal all times and all relevant staff, contractors and sub-contractors must be acquainted or be made acquainted with the content of this Authorisation.	Compliant	A hard copy of the authorisation is kept in a file at its environmental offices.
8.	The applicant must within five (5) calendar days of receipt of this Record of Decision (ROD):	Not Applicable	The condition is no longer applicable. However, proof of the notification to registered interested and affected parties or the advertisement placed in a regional or local newspaper is available.
	(a) Advertise the issuing of the Authorisation in the regional and/or local newspaper		
	(b) Inform, in writing, all interested and affected parties registered during the EIA process of the decision.		
	(c) The above must at least state the following: (i) That an Authorisation has been issued to the applicant to proceed with the proposed activity. (ii) That any appeals against the issuing of the Authorisation must be lodged with the MEC for Agriculture and Land Administration within 30 days from the date on which the Record of Decision was issued to the applicant and at the address stipulated in the Record of Decision. (iii) Include the date on which the Record of Decision was issued to the applicant and the date by which the appeals must reach the MEC. (iv) Indicate where copies of the Authorisation and Record of Decision can be viewed or obtained.		
Construction and Operation			
1.	This Authorisation is repealed if the construction of the proposed activities has not taken place within three (3) years of the issuing of this Authorisation.	Compliant	It was communicated that construction of all the activities as authorised commenced within the three (3) year period as per the conditions. The EA was however granted 13 years ago already.
2.	An Environmental Management Plan must be compiled and submitted before commencing with construction activities.	Noted	The mitigatory measures for this specific development were included as part of Mafube Coal's EMPr for the Beneficiation Plant, Discard Facility and Linear Infrastructure. This EMPr referred to, together with others applicable to the mine were consolidated into a Main Aligned EMPr granted by the MDALA on 12 November 2019 (License no: MP30/5/1/2/2/172 MR). The conditions of this overarching EMPr, which are inclusive of construction mitigation measures, were audited and audit findings listed in Section 6.7 of this report.
3.	The developer must provide adequate sanitation facilities and potable water for the construction workers.	Not Applicable	Construction phase activities are not applicable as the activity is currently in the operational phase.
4.	Proper storm water control measures must be implemented in order to prevent the	Compliant	The mine strives to comply with the requirements of the GN704 for the

Condition number	Condition	Finding	Observation/ Audit Evidence
	accumulation of water and soil erosion.		<p>separation of clean and dirty water. Site visit has around the conveyor and rail loops has confirmed that no accumulation of water and soil erosion occurs. Dirty water from the conveyor belt is directed to Overland 1 dam and Overland dam 2. It was however not confirmed where dirty storm water from the rail loop was directed. Based on site observation, it seems dirty storm water from the rail loop is directed to nearby veld (clean water environment). See picture below.</p> <p>It is hence recommended that an investigation be conducted to determine whether or not the rail loop storm water management is in line with the GN 704 requirements.</p> <p>Picture showing assumed dirty storm water reporting to the clean water environment.</p> 
5.	Construction must take place during dry months in order to avoid wet operation as they might impact negatively to the environment.	Not Applicable	Construction phase activities are not applicable as the activity is currently in the operational phase.
6.	The storage and handling of fuel, lubricants and other chemicals must be done in specially demarcated impervious and bunded areas.	Not Applicable	<p>Construction phase activities are not applicable as the activity is currently in the operational phase.</p> <p>No storage of chemicals and fuels is undertaken at the areas associated with this environmental authorisation.</p>
7.	Conveyor crossings must be constructed to provide access to land, where the conveyor cuts through existing roads.	Compliant	Access to the conveyor is gained via road P154 (Arnot Road) and accesses are in place to different land where required.
8.	Footings for the conveyor must avoid wetlands along watercourses and drainage lines at CLI to CL 4, CL 4A and CL 4B and Red Hot Pokers found on CL 2 must be relocated to a new habitat before the construction of the conveyor begins.	Compliant	<p>Where the width of the watercourse allowed, one continuous span (with the exception of the Overland Conveyor 1 and 2 crossings that have cement stilts with footings within the wetland), was implemented.</p> <p>No red-hot pokers were identified on site during the construction of conveyor and no relocation was necessary.</p>
9.	It must be ensured that fauna can cross the conveyor alignment through measures such as underpasses.	Compliant	Where the width of the watercourse allowed, one continuous span (with the exception of the Overland Conveyor 1 and 2 crossings that have cement stilts with footings within the wetland), was implemented. There fauna will be able pass under the conveyor crossings. Photographic evidence and aerial imagery showed that the entire length of the conveyor is fenced in with access control for community safety and security purposes.

Condition number	Condition	Finding	Observation/ Audit Evidence
10.	During the construction of a rail loop, soil to a depth of 150mm must be stripped from the area directly beneath the rail line in the rail loop and this must only apply to flat areas that will not require a cut or fill. Where the rail line needs to be constructed in a cutting, all usable soil must be stripped from these areas for use during rehabilitation.	Not Applicable	Construction phase activities are not applicable as the activity is currently in the operational phase.
11.	There must be a regular cleaning of spilled coal material adjacent to railway tracks and in the vicinity of the loading facilities and the surface of loading areas must be graded so that surface water and spilled material gravitates to a central point for collection and management.	Non-Compliant	<p>It was clear from the evidence collected during the site visit that cleaning of spilled coal material adjacent to railway tracks and in the vicinity of the loading facilities and the surface of loading areas are conducted via grading (see picture below).</p> <p>It was however noted that dirty storm water collected from the rail loop area is allowed to report to the nearby clean water environment placing an environmental risk on the clean water environment. Based on the mine's storm water management plan, dirty water from rail loop must report to Overland Dam 2.</p> <p>This risk as has been identified and included in the mine's latest IWWMP and Storm Water Management Plan and as a management measure, Mafube is investigating the adequacy of the capacity and the functionality of Overland Dam 1 and 2 and their silt traps that were designed and constructed to collect dirty water from the rail loop area. The corrective measures have been identified in the storm water management plan and will be implemented in phases. Progress with regard to the implementation of the plan will be reported in the next audit.</p>
12.	During the road re-alignment, culverts must be incorporated where the road crosses the drainage lines and must be sized such that they allow runoff to go through and prevent the damming of water upstream of the culvert.	Compliant	Culverts were incorporated where crossings of drainage lines occur.
13.	The pressure gauges on the pipeline must be installed so that they can alert the management in case of a spillage so that repair and remedial measures can be implemented immediately.	Compliant	Pipelines are fitted with flow meters to record the volume of water pumped and are fitted with pressure gauges to detect leaks. This is monitored by the Plant Team and a Dewatering team. Furthermore, a Scada system is in place to measure, monitor and record water balances.
14.	After construction, the road re-alignment must be handed over to the Mpumalanga Department of Roads and Transport which will manage impacts within their existing Environmental Management Framework.	Not Applicable	This condition is outside of the auditing period as the construction was done in 2005 and the road is currently being maintenance by the Mpumalanga Department of Roads and Transport.
15.	During the decommissioning of the conveyor route, once the structure has been removed, the servitude footprint must be ripped, and topsoil must be placed within the conveyor servitude to ensure that land capability targets are met. The area must be seeded and maintained until a suitable vegetation cover has been established.	Not Applicable	Decommissioning phase activities are not applicable as the activity is currently in the operational phase.
16.	On decommissioning of the rail loop, the area affected by the rail loop must be ripped and rehabilitated as described and documented in the Mafube Colliery Environmental Management Programme.	Not Applicable	Decommissioning phase activities are not applicable as the activity is currently in the operational phase.
17.	Topsoil must be removed from all areas to be disturbed by construction activities and be stockpiled at predesigned locations for the use during rehabilitation or landscaping.	Not Applicable	Construction phase activities are not applicable as the activity is currently in the operational phase.
18.	Stockpiles must not exceed heights of 2m and any stockpiles which are likely to remain for 12 months or more must be vegetated.		Topsoil stockpiles are, according to the mine, not stocked at the rail loop or along the conveyor.
19.	Rehabilitation must take place as soon as the construction activity or disturbance ceases.	Compliant	Based on the site observation, the construction sites have been successfully rehabilitated.
<i>Monitoring and Auditing</i>			
1.	A post-construction audit must be conducted to ensure that any shortcomings are identified and addressed.	Compliant	A post-construction audit formed part of the <i>Mafube Colliery Performance Assessment Report for the period ending 2006</i> conducted by Geovicon.
2.	Anglo Coal must ensure that the site is inspected at frequent intervals to determine the need for maintenance.	Compliant	Inspections along the length of the conveyor and at the railway loop are undertaken on a regular basis by the Plant team, a contractor 'Bundu' and the mine's environmental team. The engineer, Mr Mike de Beer and colleagues

Condition number	Condition	Finding	Observation/ Audit Evidence
			inspect the trenches and the conveyor weekly.
3.	Anglo coal must maintain a database for all records and information generated for the site.	Compliant	Documentation related to the environmental authorisation is kept on the Enablon system, Mafube Colliery environmental offices and the Mafube Colliery shared drive. But not all documented information could be provided at the time of the audit.
<i>Reporting</i>			
	This authority must be notified within 24 hours in the event of non-compliance with any of the conditions of this Authorisation and/or in the case of any event which results in the discharge of pollution.	Noted	No reportable non-compliances or incidents in relation to the EA have been identified that would require reporting. The mine understands and takes cognisance of this condition.
2.	Records relating to the compliance/non-compliance with the conditions of this Authorisation must be kept in good order. Such records must be made available to this Department within seven (7) workdays from the date of a written request by the Department for such records.	Noted	The holder of the EA is aware of and understands this condition. Mafube Coal undertakes annual audits in respect of the conditions of the EAs. The findings of the audit must be kept in good order and provided to the Department on request.
3.	Non-compliance with, or any deviation from the 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 Sections 29, 30 and 31 A of the Act.	Noted	The mine understands and takes cognisance of this condition.
4.	Any complaints regarding the said development must be brought to the attention of this Department within 24 hours after receiving the complaint. A complaint's register must be kept up to date for inspection by members of the Department.	Compliant	A complaints' register forming part of the mine's Enablon system is maintained. A hard copy of the register is kept with security at the mine's entrance gate. Complaints can be reported by completing the register, via email or other communication means such as telephone call. It was verified at the time of the audit that the rail loop, conveyor and pipeline components of the mine had no complaints on record related to them.

7.4 AMENDED ENVIRONMENTAL AUTHORISATION FOR THE BRIQUETTING PLANT, REF: 17/2/3 G NK21, DATED 05 DECEMBER 2012

CONDITION NO	CONDITION	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
Scope of authorization			
3.1.	Authorisation of the activity is subject to the conditions contained in this authorization, which form part of the environmental authorisation and are binding on the holder of the authorization.	Noted	The condition is well understood by Mafube Colliery Management.
3.2.	The holder of the authorization must ensure compliance with these conditions by any person acting on his or her behalf, including but not limited to, an agent, sub-contractor, employee or person rendering a service to the holder of the authorization.	Compliant	The Environmental superintendent of Mafube Colliery is appointed to ensure compliance with the conditions of the environmental authorisation. Compliance to the conditions of the environmental authorisation by the any agent, sub-contractor, employee or person rendering a service at the facility are ensured through monthly inspections, internal audits and annual external audits. Should any concerns (including non-compliance) be identified, such are recorded on the Enablon system as incidents for corrective auctioning.

CONDITION NO	CONDITION	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
3.2.	The activity which is authorized may only be carried out at the property indicated above.	Compliant	The Briquetting plant is situated within the coordinates as approved by this environmental authorisation.
3.3.	Any changes to, or deviations from, the project description set out in this authorization must applied for and be approved, in writing, by the Department before such changes or deviations 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 deviations and it may be necessary for the holder of the authorization to apply for further authorization in terms of the regulations.	Noted	No changes have been made on this environmental authorisation during the audit period. Mafube Colliery will ensure that any changes to the project description are approved in writing by the Department of Mineral Resources and Energy before such changes are made.
3.4.	In the event that the predicted impacts exceed the significance as predicted in the Section 24G NEMA application report, the authorization may be withdrawn after proper procedures have been followed.	Noted	Based on the desktop assessment and interview with the mine personnel, it is of our opinion that the impacts in the environmental impact report have not been exceeded. The condition is well understood by Mafube Colliery Management. The condition is well understood by Mafube Colliery Management.
3.5.	In the event of any dispute concerning the significance of a particular impact, the opinion of the Department in respect of its significance will prevail.	Noted	The condition is well understood by Mafube Colliery Management.
3.6.	The Department may change or amend any of the conditions of this authorization if, in the opinion of the Department, it is environmentally justified.	Noted	The condition is well understood by Mafube Colliery Management.
3.7.	Where any of the applicant's contact details change, including the name of the responsible person, the physical or postal address and/ or telephonic details, the applicant must notify the Department as soon as the new details become known to the applicant.	Not Applicable	This condition is not applicable, since no change has been made to this authorisation.
3.8.	The holder of this authorization is responsible for compliance with the provisions for Duty of Care and Remediation of Environmental Damage contained in Section 28 of the National Environmental Management Act, 1998 (Act 107 of 1998) as amended.	Compliant	Mafube Colliery is aware of the Duty of Care as provided for in terms of section 28 of the NEMA as well as section 19 of the NWA. The reasonable measures implemented by Mafube Colliery in order to prevent pollution or degradation of the environment from occurring, continuing or reoccurring include, amongst others, (i) the continuous monitoring of the mining operations' impacts on the environment in accordance with the approved EMPr and other authorisations such as the water use licences granted in terms of the NWA, (ii) informing and educating employees regarding the environmental risks associated with the activities and the manner in which the tasks must be performed in order to avoid significant pollution or degradation of the environment, (iii) the implementation of policies and procedures, based on the impacts and risks associated with the mining operations, and (iv) the management of environmental incidents in accordance with Mafube Colliery's emergency and incident procedures.
3.9.	This authorization does not negate the holder of the authorization's responsibility to comply with any other statutory requirements that may be applicable to the undertaking of the	Noted	The condition is well understood by Mafube Colliery Management.

CONDITION NO	CONDITION	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
	activity.		
4. Appeal of authorisation			
4.1.	The holder of the authorization must notify every registered interested and affected party, in writing and within fourteen (14) days of the date of this decision, of the outcome of the application.	Not Applicable	No evidence of notification, of approval of the authorisation, to the interested and affected parties was provided, as the authorisation was approved years back (2012). Therefore, in the absence of proof of notification to the interested and affected parties and the fact that the authorisation was approved years back and this non-compliance is administrative in nature and does not pose any significant risk to the environment, the condition is not applicable.
4.2.	<p>The notification referred to above, must –</p> <p>a) Specify the date on which the authorization was issued;</p> <p>The notification referred to above, must –</p> <p>b) Inform the interested and affected party of the appeal procedure provided for in Chapter 7 of the Regulations;</p> <p>The notification referred to above, must –</p> <p>c) Advise the Interested and Affected Parties to the manner in which the decision can be accessed; and</p> <p>The notification referred to above, must –</p> <p>d) be published in the newspapers contemplated in Regulation 54(2) (c) and which newspaper was used for the placing of advertisements as part of the public participation process.</p>	Not Applicable	<p>No proof of notification was provided to determine if the following are included in the notice given to the registered interested and affected party of the outcome of the decision:</p> <ul style="list-style-type: none"> Specify the date on which the authorization was issued Inform the interested and affected party of the appeal procedure provided for in Chapter 7 of the Regulations. Advise the Interested and Affected Parties to the manner in which the decision can be accessed. <p>This non-compliance is administrative in nature and does not pose any significant risk to the environment, therefore it is no longer applicable.</p>
5. Management and Monitoring of the activity			
5.1.	The Environmental Management Programme (EMP) is hereby approved and must be implemented and adhered to throughout the lifecycle of the activity.	Compliant	<p>Mafube Colliery ensures implementation/adherence of the EMPr through the following:</p> <ul style="list-style-type: none"> Conducting internal and external environmental audits to check compliance with the commitments outlined in the EMPr. Monthly inspections to ensure that the activities are undertaken according to the EMPr. <p>Furthermore, if non-compliances are identified from the audits and monthly inspections conducted, action plans are compiled and implemented to ensure continual compliance with such specific commitments.</p>
5.3.	The Mine's Environmental Personnel will have the responsibility of monitoring and reporting on compliance with the conditions of this environmental authorization as well as monitoring	Compliant	Ingrid Sithole is appointed as the Environmental Coordinator to ensure compliance with the conditions of this environmental authorization as well as

CONDITION NO	CONDITION	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
	and reporting on the implementation of the approved (EMP).		monitoring and reporting on the implementation of the approved Environmental Management Programme.
5.4.	The Mine's Environmental Personnel must oversee and monitor the success of all rehabilitation activities.	Not Applicable	The briquetting plant is under operational phase, therefore, this condition is not applicable.
• 5.5.	<ul style="list-style-type: none"> The Mine's Environmental Personnel must maintain the following on site: A site diary Copies of all reports submitted to the Department A complaint register of all public complaints and the remedies applied to such complaints. 	Compliant	<p>All documentations related to the Briquetting plant are kept at Mafube Colliery Environmental office/Mafube share drive. This includes the following:</p> <ul style="list-style-type: none"> Copies of the EAs and Licences Copies of reports submitted to the Competent Authorities. <p>A complaints register is available at the security office at the main entrance of Mafube Colliery, as well at the Plant and Mining Control Rooms.</p> <p>All complaints are recorded on the Enablon system to be assigned to the responsible person for investigation, actioning and close-out.</p>
5.6.	The holder of the authorization must submit an environmental audit report to the Department during the operation of the proposed briquetting plant. The environmental audit report must be compiled by an independent environmental auditor and must indicate the date of the audit, the name of the auditor and the outcome of the audit in terms of compliance with the conditions of this authorization as well as the requirements of the EMP.	Compliant	<p>This audit report serves the purpose of the required environmental audit report contained in this condition. This audit report is compiled by Geovicon Environmental (Pty) Ltd and it contains the following:</p> <ul style="list-style-type: none"> The date of the audit. The name of the auditor(s). The outcome of the audit.
5.7.	The Department retains the right to monitor and/ or inspect the development during both construction and operational phases.	Noted	The condition is well understood by Mafube Colliery Management.
6. Commissioning and operation of the activity			
6.1.	<p>Fourteen (14) days written notice must be given to the Department that the activity will commence. Commencement for the purposes of this condition includes site preparation and the notice must include a date on which it is anticipated that the activity will commence.</p> <p>The holder of the EA takes note of this condition</p>	Not Applicable	It is noted that the authorisation was granted in terms of Section 24G of the NEMA. It is assumed that construction of the briquetting plant commenced before the application for rectification was submitted to the Department. Therefore, this condition is not applicable.
6.2.	The existing mine roads must be used in order to gain access to the said site.	Compliant	It was confirmed during site visit conducted that the existing mine roads are used to access to the briquetting plant.
6.3.	Construction activities must remain within the defined construction area.	Not Applicable	The briquetting plant is under operational phase, therefore this condition is not applicable.
6.4.	No activity, such as temporary housing, construction camps, temporary ablution, storing of equipment, stockpiling of topsoil or any other activity, may take place below the 1:100-year flood line, or within a horizontal distance of 32m of a watercourse.	Not Applicable	The briquetting plant is under operational phase, therefore this condition is not applicable.

CONDITION NO	CONDITION	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
6.5.	Waste management at the briquetting plant will form part of the overall waste management system of Mafube Colliery. Any hazardous waste produced as part of either the construction or operational phase, the said waste must be removed by a contractor to the Holfontein/Rietfontein hazardous waste sites.	Compliant	Waste management at the briquetting plant forms part of the Mafube Colliery waste management system, which is managed in accordance with the Waste Management and Monitoring Procedure. Hazardous waste generated on site is collected by TL Ideas and disposed of at Holfontein landfill site. However, since the briquetting plant was not operating during the audit period, no waste was generated.
6.6	The mixing of cement, chemicals or other noxious materials must be undertaken in designated areas on an impermeable layer such as a concrete slab or in a container suitable for this.	Not Applicable	No mixing of cement, chemicals or other noxious material was noted during the site visit. Therefore, this condition is not applicable.
6.7.	The Briquetting Plant must be checked and maintained regularly to ensure that there is no environmental contamination as a result of oil, fuel or hydraulic fluid leakages.	Compliant	Weekly inspections are undertaken on the plant by Mafube Colliery and also the Environmental team to identify any issues/concerns. However, the plant was not operating during the audit period, and inspection and maintenance of the briquetting plant is mostly done when the plant is being operated.
6.8.	The pollution of adjacent areas due to improper storage of construction materials or any hazardous substances is prohibited.	Not Applicable	The briquetting plant is under operational phase. Therefore, this condition is not applicable.
6.9.	The use of waste oils as a fuel oil is prohibited.	Compliant	Old (waste) oil at Mafube Colliery is collected and taken off-site by an oil-recycling company (Emalahleni Oil). No re-use of waste oils as fuel oil is undertaken at Mafube Colliery.
6.10.	A watering management program must be implemented throughout the lifecycle of the activity and must achieve a dust suppression efficiency of at least 75%.	Compliant	Mafube Colliery uses water bowsers to suppress dust emitted around the briquetting plant. Mafube Colliery conducts Air Quality Management Audits on an annual basis to evaluate the adequacy and effectiveness of the controls within the Environmental Air Quality Management Process to provide reasonable assurance that the key risks associated with this process are being managed effectively. Monthly Dust Fall-out monitoring is conducted by Aquatico Scientific (Pty) Ltd to monitor particulate concentrations and maintain a dust fallout network in and around Mafube Colliery.
6.11.	The existing ablution facilities at the existing control room (no.10; plant) and existing green room (no.11; plan 10 must be used by the personnel for the proposed briquetting plant. Ablution facilities may not be located within 100m from any watercourse or wetland and may not cause pollution. The use of septic tanks and soakaways or pit latrines (unimproved or ventilated) on site is strictly prohibited.	Compliant	Personnel working at the briquetting plant use existing ablution facilities at the Mafube Colliery Plant area. During site visit, it was confirmed that the ablution facilities are located at the briquetting plant control room. Assessment of the current position of the briquetting plant control room against the positions of the delineated wetlands (Aquatic and Wetland Environmental Impact Report for the Mafube Colliery Pans (dated July 2009), the control room is not located within the identified wetlands areas.

CONDITION NO	CONDITION	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
6.12.	Chemical toilets must be maintained and cleaned regularly, and effluent must be disposed of off-site into an approved municipal sewage system.	Not Applicable	No chemical toilets are located at the Briquetting plant area. Therefore, this condition is not applicable.
6.13.	Increased runoff due to vegetation clearance and/ or soil compaction must be managed, and steps must be taken to ensure that storm water does not lead to bank instability and excessive levels of silt entering any watercourse.	Compliant	An assessment of the Google Earth Image and the approved layout plan, the briquetting plant is constructed within the approved footprint area. According to the Water Balance Model (dated October 2019), all dirty water from the briquetting plant is diverted to PCD1 via trenches to avoid contamination to the environment.
6.14.	Soils that become compacted through the activities of the development must be loosened to an appropriate depth to allow seed germination.	Not Applicable	No soil compaction is undertaken at the briquetting plant. Therefore, this condition is not applicable.
6.15.	No surface storm water generated as a result of the development may be channelled or piped directly into any watercourse. All surface runoff generated during both construction and operation phases must be managed prior to entering any natural drainage system or wetland so as not to impact on the natural hydrology and morphology of the watercourse.	Compliant	The briquetting plant falls within the footprint area of the Mafube Colliery plant area. A detailed affected storm water management system has been implemented at Mafube Colliery to prevent the storm water (from briquetting plant) from reporting to the clean water environment. Effective separation of clean and affected water at Mafube Colliery is committed to in the Integrated Water and Waste Management Plan dated 2016. Affected water runoff from the plant area is collected in trenches and conveyed to PCD1 for containment and reuse.
6.16.	Storm water management must be designed to slow the release of runoff into wetlands and watercourses.	Compliant	Affected water runoff from the plant area is collected in trenches and conveyed to PCD1 for containment and reuse. No release of dirty water from the briquetting plant to the wetlands and watercourses is undertaken and was noted during the site visit.
6.17.	Mechanisms for dissipating water energy must be implemented at the inception of the construction phase to prevent erosion	Not Applicable	The briquetting plant is under operational phase. Therefore, this condition is not applicable.
6.18.	The rate of storm water runoff must be reduced by using mechanisms such as the construction of earth berms and grassed swales, and the construction of energy breakers a\ storm water outlet structures.	Not Applicable	The briquetting plant is under operational phase. Therefore, this condition is not applicable.
6.19.	Where erosion at the base of swales or channels and at outlets from piped systems is likely to occur, inverts must be armoured to obviate scour, and where appropriate, swales must be grassed or lined.	Not Applicable	The briquetting plant is under operational phase. Therefore, this condition is not applicable.
6.20.	Surface water rich in sediments and other pollutants must be prevented from entering any watercourse.	Compliant	Affected water runoff from the plant area is collected in trenches and conveyed to PCD1 for containment and reuse. No release of dirty water from the briquetting plant to the natural environmental is undertaken and was noted during the site visit.
6.21.	Noise as a result of the construction and operation of the proposed briquetting plant must	Compliant	No complaints as a result of noise from the Briquetting plant were received

CONDITION NO	CONDITION	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
	not impact on resident of any farmsteads.		during the audit period. It must be noted that the briquetting plant was not operating during the audit period.
6.22.	The proposed Briquetting must comply in terms of the National Environmental Management: Air quality act (Act No.39 of 2004), such proposed Briquetting plant requires an Atmospheric Emission License in terms of this Act.	Compliant	Mafube Colliery has an Atmospheric Air Emissions Licence ("AEL") for the briquetting plant (Licence No: NDM/AEL/MP313/14/06, dated 15 December 2014) which was amended and approved in August 2019.
6.23.	The holder of the authorisation must constantly monitor and record the effectiveness of the storm water model throughout the lifecycle of the activity.	Compliant	A detailed affected storm water management system has been implemented at Mafube Colliery to prevent affected storm water the Briquetting plant area from reporting to the clean water environment. The storm water management system at the briquetting plant is monitored on weekly basis by Mafube Colliery Environmental Department in order to check the effectiveness of the storm water management system. Furthermore, IWWMP for Mafube Colliery is updated on an annual basis for the purpose of identifying all the matters which require attention in relation to the management of storm water, to also formulate measures to address the identified matters of concern and to compile strategies and action plans to address the potential matters of concern. An updated IWWMP was provided for review during the audit period (dated 04 February 2021).
6.24.	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 underground water.	Compliant	Any source of pollution emanating from the briquetting plant is rectified through monitoring of dust, air, surface water and groundwater. Surface and groundwater monitoring is undertaken to determine pollution of surface and ground water. Furthermore, to prevent pollution of surface and ground water, all affected water runoff from the briquetting plant is collected in trenches and conveyed to PD1 for containment and reuse.
6.25.	Measures must be taken to remove alien vegetation and control new alien vegetation recruitment on the property throughout the lifecycle of the activity.	Compliant	<p>The Mafube Coal Alien and Invasive Plant Management Plan, dated 2016 was presented. The purpose of an Alien and Invasive Plant Management Plan is to provide a framework for the management of alien and invasive plant species during the operational phase for Mafube Coal. The broad objectives of this plan include the following:</p> <ul style="list-style-type: none"> • Ensure alien plants do not become dominant in parts or the whole site through the control and management of alien and invasive species presence, dispersal and encroachment; • Initiate and implement a monitoring and eradication plan; and • Promote the natural re-establishment and planting of indigenous

CONDITION NO	CONDITION	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
			species. No alien vegetation was found around to the briquetting plant.
6.26.	All disturbed areas must be fully rehabilitated and protected from erosion. Rehabilitation measures must be aimed at the prevention of soil erosion and the re-establishment of vegetation.	Not Applicable	The briquetting plant is under operational phase and no rehabilitation activities are undertaken as yet, therefore this condition is not applicable.
6.27.	Only species indigenous to the area may be used for rehabilitation.	Not Applicable	The briquetting plant is under operational phase and no rehabilitation activities are undertaken as yet, therefore this condition is not applicable.
6.28.	The uses of gravel, and/ or, sand from borrow/ gravel pits, must adhere to all applicable legislation in terms of authorisation and permits.	Not Applicable	The briquetting plant is under operational phase. Therefore this condition is not applicable.
6.29.	No construction material or any other waste material may be dumped into any watercourse or surrounding area.	Not Applicable	The briquetting plant is under operational phase. Therefore this condition is not applicable.
6.30.	All general waste generated on the site must be disposed of at an official registered landfill site or as directed by any other relevant authority.	Compliant	TL Ideas collect general waste and dispose of the waste at a licenced waste disposal site. Disposal certificates were provided for review during the audit.
6.31.	All hazardous waste must be disposed of at an official registered site or be removed by registered hazardous waste contractors.	Compliant	Hazardous waste is collected by TL Ideas and is disposed of at Holfontein landfill site. Safe disposal certificates were provided for review during the audit.
6.32.	Construction personnel must be sensitized to the requirements of the South African Heritage Resource 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 accordingly.	Not Applicable	The briquetting plant is under operational phase; therefore this condition is not applicable.
6.33.	Any complaints received from the public during the construction and operational phases of the activity must be attended to as soon as possible and addressed to the satisfaction of all concerned.	Compliant	All complaints reported are logged on the Enablon system and the Environmental Superintendent is informed as soon as a complaint has been lodged so that the mine can respond to the complainant within 48 hours. Investigations are undertaken, corrective and preventative actions are also taken and all incidents are closed-out within 14 days of the complaint/incident received. This is done in accordance with the Mafube Incident Management Procedure. No complaints were reported during the audit period.
7.1.	A copy of this authorization must be kept at the property where the activity will be undertaken. The authorization must be produced to any authorized 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.	Compliant	The copy of this Environmental Authorisation is kept on site by the Environmental Department. The mine will also if and when applicable produce the authorisation to any authorized 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.
7.2.	Non-compliance with a condition of this authorization may result in criminal prosecution or other actions provided for in the National Environmental Management Act, 1998 and the	Noted	The condition is well understood by Mafube Colliery Management.

CONDITION NO	CONDITION	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
	regulations.		
7.3.	National government, provincial government, local authorities or committees appointed in terms of the conditions of this authorization 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 construction or operation subsequent to construction be temporarily or permanently stopped for reasons of non-compliance by the applicant with the conditions of authorisation as set out in this document or any other subsequent document emanating from these conditions of authorization.	Noted	The condition is well understood by Mafube Colliery Management.


7.5 ENVIRONMENTAL AUTHORISATION FOR THE UNDERGROUND STORAGE TANKS, REF: 17/2/2/3 MP-30, DATED 20 MARCH 2009

CONDITION NO	CONDITION	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
Scope of authorization			
1.	Authorization of the activity is subject to the conditions contained in this authorisation, which form part of the environmental authorisation and are binding on the holder of the authorisation.	Noted	The condition is well understood by Mafube Colliery Management.
2.	The holder of the authorisation must ensure compliance with the conditions by any person acting on his or her behalf, including but not limited to, an agent, sub-contractor, employee or person rendering a service to the holder of the authorisation.	Compliant	The Environmental superintendent of Mafube Colliery is appointed to ensure compliance with the conditions of the environmental authorisation by any person acting on his or her behalf, including but not limited to, an agent, sub-contractor, employee or person rendering a service to the holder of the authorisation. Compliance to the conditions of the environmental authorisation by the any agent, sub-contractor, employee or person rendering a service at the facility are ensured through monthly inspections, internal audits and annual external audits. Should any concerns (including non-compliance) be identified, such are recorded on the Enablon system as incidents for corrective auctioning.
3.	The activity which is authorized may only be carried out at the property indicated above.	Compliant	The above storage tanks are situated on the coordinates as approved by this environmental authorisation.
4.	Any changes to, 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. 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 deviations and it may be necessary for the holder of the authorisation to apply for further authorisation in terms of the regulations.	Noted	No changes have been made to this environmental authorisation during the audit period. Mafube Colliery will ensure that any changes to the project description are approved in writing by the Department of Mineral Resources and Energy before such changes are made.
5.	This activity must commence within a period of two (2) years from the date of issue. If commencement of the activity does not occur within that period, the authorisation lapses	Not Applicable	It could not be determined if the Above Ground Storage Tanks were commenced within a period of two years from the date of issue of this environmental

CONDITION NO	CONDITION	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
	and a new application for environmental authorisation must be made in order for the activity to be undertaken.		authorisation since no documentary proof was provided. However, this non-compliance is administrative in nature and does not pose any significant risk to the environment. Therefore is not applicable.
6.	This authorization does not negate the holder of the authorization, responsibility to comply with any other statutory requirements that may be applicable to the undertaking of the activity.	Noted	The condition is well understood by Mafube Colliery Management.
Appeal of authorisation			
7.	The holder of the authorisation must notify every registered interested and affected party, in writing and within 10 (Ten) calendar days, of receiving notice of the Department's decision to authorize the activity.	Not Applicable	It could not be determined if the registered interested and affected parties were notified within a period of 10 (ten) calendar days of receiving notice of the Department's decision since no notification was provided. This non-compliance is administrative in nature and does not pose any significant risk to the environment. Therefore is not applicable.
8.	The notification referred to in 7 must –	Not Applicable	It could not be determined if the notice include the following since no notification was provided: <ul style="list-style-type: none">Specify the date on which the authorisation was issued.Inform the interested and affected parties of the appeal procedure provided for in chapter 7 of the regulations. This non-compliance is administrative in nature and does not pose any significant risk to the environment. Therefore is not applicable.
8.1	Specify the date on which the authorisation was issued;		
8.2.	Inform the interested and affected parties of the appeal procedure provided for in chapter 7 of the regulations; and		
8.3.	The notification referred to in 7 must – Advise the interested and affected party that a copy of the authorisation and reasons for the decision will be furnished on request.		
Management of the activity.			
9.	The Environmental Management Plan ("EMP") which fulfils the requirements of this authorization must be compiled and submitted to the Department for approval The EMP must:	Compliant	The EMPr for the above ground storage tanks forms part of the Aligned EMPr.
9.1.	Contain all the information specified in regulation 34 of the regulation;		
9.2.	Be approved by the Department before the commencement of any construction activities and		
9.3.	Be adhered to during the commencement, operation and closure of the activity.		
10	An independent Environmental Control Officer must be appointed to ensure compliance with the conditions of this Environmental Authorisation.	Not Applicable	The Environmental Co-ordinator for the mine is appointed to take the role of the ECO for the project and is responsible to monitor and report on compliance to the conditions of the EA. It must however be noted that the condition indicated that the ECO must be independent, which was not the case with this appointment.

CONDITION NO	CONDITION	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
			<p>This condition is however no longer applicable as the Above Ground Storage Tanks are already constructed and are in its operational phase.</p> <p>It must be added as well that the mine, despite appointing its own environmental officer, have complied with the purpose and intention of the condition in that a suitably qualified person was appointed to ensure compliance with the condition of the environmental authorization and the approved EMP.</p>
11.	<p>The holder of the authorization must submit a post-construction environmental audit report to the department.</p> <p>The audit report must be compiled by an independent auditor.</p>	Not Applicable	<p>It could not be determined if a post-construction environmental audit report was submitted to the department since no post-construction environmental audit report was provided. Mafube Colliery submitted a letter (dated 03 December 2018) to the Department of Mineral Resources and Energy informing them of the corrective actions related to the non-compliances from the external legal audit of the Mafube Colliery Environmental Authorisations about the submission of construction phase related documentations. The letter informs the Department that all construction work related to the above ground tanks have been completed in 2012 although no post-construction environmental audit reports are available.</p>
12.	The Department retains the right to monitor and/or inspect the proposed project during both construction and operational phases.	Noted	The condition is well understood by Mafube Colliery Management.
Commissioning and Operation of the activity			
13.	Fourteen (14) days written notice must be given to the department that the Activity will commence. Commencement for the purposes of this condition include Site preparation. The notice must include a date on which it is anticipated that the activity will commence.	Not Applicable	<p>It could not be determined if fourteen (14) days written notice was submitted to the Department of Agriculture and land Administration and that the notice include a date on which it is anticipated that the activity will commence since no notification was provided. This non-compliance is administrative in nature and does not pose any significant risk to the environment. Therefore is not applicable.</p>
14..	All construction activities must be limited to the said site. No activities must be allowed on adjacent agricultural land.	Not Applicable	The Above Ground Storage Tanks is under operational phase. Therefore, this condition is not applicable.
15.	No development must take place below the 1:100-year flood line of any watercourse.	Compliant	According to the assessment of the Google Earth Image and the approved layout plan and the wetland delineation plans, the Above Ground Storage Tanks are not situated within wetland areas and below the 1:100-year flood line.
16.	The applicant must ensure that all the steep slopes are avoided to prevent all the negative impact that might arise.	Compliant	It was confirmed during the site visit that the tanks are situated within a levelled, cement and bunded area and therefore there are no steep slopes that may result in any impacts.
17.	All reasonable measures must be undertaken to prevent and manage soil erosion during	Compliant	It was confirmed during the site visit that the tanks are situated within levelled, cement lined and bunded area, the area adjacent thereto is level so as to limit

CONDITION NO	CONDITION	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
22.	<p>A three-level containment system must be installed with the tank to ensure that spills and leaks are managed and possibly eliminated.</p> <p>If the spill occurs in a secondarily contained area or within a bund, it must be cleaned up manually using a pump or an absorbent material which must then be disposed of into a hazardous waste bin.</p>	Compliant	<p>A three-level containment system is installed for managing of spills and leaks. The tanks are fitted with a sump and a hydrocarbon separator.</p> <p>Mafube Colliery developed a Chemical Spill Clean-Up Procedure, which indicates that when a leakage/spill occurs, the spill is contained using the correct absorbent material and/or sawdust to collect the spilt material. The contaminated absorbent material is then completely removed and disposed of in a hazardous waste skip as per the Waste Management Procedure. Oil contaminated material is disposed of as hazardous waste and collected by a contractor (TL Ideas for disposal at Holfontein). Safe disposal certificates were provided for review.</p>
23.	Shell must also ensure that there is a provision of spill response trailers and contact details for trained spill response contractors.	Compliant	Spill response trailers are available on site and proof of training of the spill response contractors.
24.	The proposed storage facility must be designed and constructed in accordance with SANS 1089 Part 1.	Compliant	The storage tanks are designed and constructed in accordance with SANS 1089 Part 1.
25.	Disturbance to natural vegetation must be restricted to the absolute minimum and areas disturbed as a result of construction activities must be rehabilitated as soon as possible to the satisfaction of the Department.	Compliant	<p>According to the assessment of the Google Earth Image and the approved layout of where the Above Ground Storage Tanks, the tanks are constructed within the approved footprint area.</p> <p>All construction activities have been completed and compliance to this condition can no longer be determined.</p>
26.	No exotic plant species must be used for rehabilitation purposes. Only plants indigenous to the area must be used.	Not Applicable	The Above Ground Storage Tanks is under operational phase and no rehabilitation activities are undertaken as yet, therefore this condition is not applicable.
27.	Appropriate measures must be taken to remove alien vegetation and control new alien vegetation recruitment on the property.	Not Applicable	The Above Ground Storage Tanks is under operational phase and no rehabilitation activities are undertaken as yet, therefore this condition is not applicable.
28.	Appropriate measures must be implemented to prevent and control veldfires.	Compliant	Fire extinguishers are available and around the fuel storage area and a firebreak plan has been implemented at Mafube Colliery.

CONDITION NO	CONDITION	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
			 <p>Fire extinguishers available at the storage tanks</p>
29.	Stringent measures must be applied to suppress dust emanating from the construction site.	Not Applicable	The Above Ground Storage Tanks is under operational phase and no construction activities are undertaken. Therefore, this condition is not applicable.
30.	No surface or ground water may be polluted due to any activity on the property or site. The relevant requirements of the National Water Act, 1998 (Act No. 36 of 1998) must be complied with at all times.	Compliant	According to the Water Quality Monitoring Report, two groundwater monitoring localities have been implemented. These monitoring localities include one monitoring point upstream of the workshops and associated fuel storage area (AGM-W1) and one monitoring point downstream of the workshops and associated fuel storage area (AGM-W2). According to the Water Quality Monitoring Report, no exceedance was recorded. The mine also complies with the relevant requirements of the National Water Act, 1998 at all times insofar as reasonably possible.
31.	Mafube Colliery must monitor the tanks on monthly basis as it is stipulated within the EMP.	Compliant	An environmental team led by the Mafube Colliery conducts weekly inspections for the entire Mafube Colliery and this include the inspections of the Above Ground Storage Tanks area. Weekly inspection reports were provided for review during the audit period.
32.	The tank installation must be according to the SANS 10089, which stipulates the installation standards.	Not Applicable	The Above Ground Storage Tanks is under operational phase and no construction activities are undertaken. Therefore, this condition is not applicable.
33.	An SABS approved leak detection system must be installed to ensured early detection of possible leakage.	Not Applicable	The storage tanks are constructed above ground and no leak detection system is required. Therefore, this condition is not applicable.
34.	The loading area must consist of concrete surfacing with a sump draining to an on-site separator.	Compliant	The fuel storage area and above ground storage tanks are constructed within cement lined and bund walls to retain 110% of the capacity of the tanks. Furthermore, the fuel storage area has been fitted with a sump and hydrocarbon separator. The oil / hydrocarbons are collected by an external contractor (Oilkol)

CONDITION NO	CONDITION	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
			and the affected water is diverted to PD 2 via a silt trap. Safe disposal certificates were provided for review during the audit period.
35.	The fuel supply company is responsible for the removal and appropriate disposal at a registered landfill site of all maintenance waste produced during the operational phase.	Compliant	Oils and hydrocarbons are collected by an external contractor (Oilkol) for recycling. Safe disposal certificates were provided for review during the audit period.
36.	In case of tank leaking, it must be removed, and the area must be rehabilitated to the satisfaction of this Department and comply with section 19 of the National Water Act, 1998 (Act 36 of 1998).	Not Applicable	No leaking tank was reported during the audit period, therefore this EMPr commitment is not applicable. The mine also notes this condition and will comply in the event of a tank leak.
General			
37.	A copy of this authorization 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.	Compliant	The environmental authorisation is kept in hardcopy and electronically at the Mafube Colliery environmental office. The electronic copy of the authorisation is also kept on the mine's database system and is accessible on all computers located across the mine. A copy of the EA is made available upon request.
38.	Where any of the applicant's contact details change, including the name of the responsible person, the physical or postal address and/ or telephonic details, the applicant must notify the Department as soon as the new details become known to the applicant.	Noted	No changes of the applicant's contact details change, including the name of the responsible person, the physical or postal address and/ or telephonic details have been made to this environmental authorisation. The condition is well understood by Mafube Colliery Management.
39.	The holder of the authorisation must notify the Department, in writing and within 24 (twenty-four) hours, if conditions of this authorisation are not adhered to. Any notification in terms of this condition must be accompanied by reasons for the non-compliance.	Not Applicable	No non-compliance of any condition of this authorization was reported during the audit period, therefore this condition is applicable.
40.	Non-compliance with a condition of this authorization may result in criminal prosecution or other actions provided for in the National Environmental Management Act, 1998 and the regulations	Noted	The condition is well understood by Mafube Colliery Management.


7.6 ENVIRONMENTAL AUTHORISATION FOR THE AMENDED ABOVE GROUND STORAGE TANKS, REF: 17/2/1/7 MP-12, DATED 15 MAY 2012


CONDITION NO	CONDITION	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
Scope of authorization			
1.1.	Authorization of the activity is subject to the conditions contained in this authorisation, which form part of the environmental authorisation and are binding on the holder of the authorisation.	Noted	The condition is well understood by Mafube Colliery Management.

CONDITION NO	CONDITION	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
1.2.	The holder of the authorisation must ensure compliance with the conditions by any person acting on his or her behalf, including but not limited to, an agent, sub-contractor, employee or person rendering a service to the holder of the authorisation.	Compliant	The Environmental superintendent of Mafube Colliery is appointed to ensure compliance with the conditions of the environmental authorisation. Compliance to the conditions of the environmental authorisation by the any agent, sub-contractor, employee or person rendering a service at the facility are ensured through monthly inspections, internal audits and annual external audits. Should any concerns (including non-compliance) be identified, such are recorded on the Enablon system as incidents for corrective auctioning.
1.3.	The activity which is authorized may only be carried out at the property indicated above.	Compliant	According to the coordinates of this environmental authorisation which were plotted on Google earth imagery, the Above Ground Storage Tanks are situated on the coordinates as approved by this environmental authorisation.
1.4.	Any changes to, 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. 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 deviations and it may be necessary for the holder of the authorisation to apply for further authorisation in terms of the regulations.	Noted	No changes have been made on this environmental authorisation during the audit period. Mafube Colliery will ensure that any changes to the project description are approved in writing by the Department of Mineral Resources and Energy before such changes are made.
1.5.	This activity must commence within a period of two (2) years from the date of issue. If commencement of the activity does not occur within that period, the authorisation lapses and a new application for environmental authorisation must be made in order for the activity to be undertaken.	Not Applicable	It could not be determined if the Above Ground Storage Tanks were commenced within a period of two years from the date of issue of this environmental authorisation since no documentary proof was provided. This non-compliance is administrative in nature and does not pose any significant risk to the environment. Therefore, this condition is not applicable.
1.6.	This authorization does not negate the holder of the authorization of the responsibility to comply with any other statutory requirements that may be applicable to the undertaking of the activity.	Noted	The condition is well understood by Mafube Colliery Management.
Appeal of authorization			
1.7.	The holder of the authorisation must notify every registered interested and affected party, in writing and within 10 (Ten) calendar days, of receiving notice of the Department's decision to authorize the activity.	Not Applicable	It could not be determined if the registered interested and affected parties were notified within a period of 10 (Ten) calendar days of receiving notice of the Department's decision since no notification was provided. This non-compliance is administrative in nature and does not pose any significant risk to the environment. Therefore, this condition is not applicable.
1.8.	The notification referred to in 1.7 must -	Not Applicable	It could not be determined if the notice include the following since no notification was provided: <ul style="list-style-type: none"> Specify the date on which the authorisation was issued. Inform the interested and affected parties of the appeal procedure provided for in chapter 7 of the regulations.
1.8.1.	Specify the date on which the authorisation was issued;		
1.8.2.	Inform the interested and affected party of the appeal of the appeal procedure provided for in chapter 7 of the regulations; and		

CONDITION NO	CONDITION	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
1.8.3.	Advise the interested and affected party that a copy of the authorisation and reasons for the decision will be furnished on request.		This non-compliance is administrative in nature and does not pose any significant risk to the environment. Therefore, this condition is not applicable.
Management of the activity			
1.9.	The Environmental Management Plan ("EMP") which fulfils the requirements of this authorization must be compiled and submitted to the Department for approval. The EMP must:	Compliant	The above ground storage tanks are managed in accordance with the Environmental Management Plan as included in the Basic Assessment submitted in support of this Environmental Authorisation application which was approved.
1.9.1.	Contain all the information specified in regulation 34 of the regulation;		
1.9.2.	Be approved by the Department before the commencement of any construction activities and		
1.9.3.	Be adhered to during the commencement, operation and closure of the activity		
1.9.4.	An independent Environmental Control Officer must be appointed to secure compliance with the conditions of this Environmental Authorisation.	Not Applicable	<p>The Environmental Co-ordinator for the mine is appointed to take the role of the ECO for the project and is responsible to monitor and report on compliance to the conditions of the EA.</p> <p>It must however be noted that the condition indicated that the ECO must be independent, which was not the case with this appointment.</p> <p>This condition is however no longer applicable as the Above Ground Storage Tanks are already constructed and are in its operational phase.</p> <p>It must be added as well that the mine, despite appointing its own environmental officer, have complied with the purpose and intention of the condition in that a suitably qualified person was appointed to ensure compliance with the condition of the environmental authorization and the approved EMPr.</p>
1.9.5.	The holder of the authorization must submit a post-construction environmental audit report to the department. The audit report must be compiled by an independent auditor.	Not Applicable	It could not be determined if a post-construction environmental audit report was submitted to the department since no post-construction environmental audit report was provided. Mafube Colliery submitted a letter (dated 03 December 2018) to the Department of Mineral Resources and Energy informing them of the corrective actions related to the non-compliances from the external legal audit of the Mafube Colliery Environmental Authorisations about the submission of construction phase related documentations. The letter informs the Department that all construction work related to the above ground tanks have been completed in 2012 although no post-construction environmental audit reports are available.
1.9.6.	The Department retains the right to monitor and/or inspect the proposed project during both construction and operational phases.	Noted	The condition is well understood by Mafube Colliery Management.

CONDITION NO	CONDITION	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
Commissioning and Operation of the activity			
1.10.	Fourteen (14) days written notice must be given to the Department that the activity will commence. Commencement for the purposes of this condition includes site preparation. The notice must include a date on which it is anticipated that the activity will commence.	Not Applicable	It could not be determined if a fourteen (14) days written notice was submitted to the Department of Agriculture and land Administration and that the notice include a date on which it is anticipated that the activity will commence since no notification was provided. This non-compliance is administrative in nature and does not pose any significant risk to the environment. Therefore, this condition is not applicable.
1.11.	All construction activities must be limited to the said site. No activities must be allowed on adjacent agricultural land.	Not Applicable	The Above Ground Storage Tanks is under operational phase; therefore, this condition is not applicable.
1.12.	No development must take place below the 1:100-year flood line of any watercourse.	Compliant	According to the assessment of the Google Earth Image and the approved layout plan and the wetland delineation plans, the Above Ground Storage Tanks are not situated within wetland areas and below the 1:100-year flood line.
1.13.	The applicant must ensure that all the steep slopes are avoided to prevent all the negative impacts that might arise	Compliant	It was confirmed during the site visit that the tanks are situated within a levelled, cement and bunded area and therefore there are no steep slopes that may result in any impacts.
1.14.	All reasonable measures must be undertaken to prevent and manage soil erosion during and after construction.	Compliant	It was confirmed during the site visit that the tanks are situated within levelled, cement lined and bunded area, the area adjacent thereto is level so as to limit erosion potential. It must be noted that all construction activities for the Above Ground Storage Tanks are completed.
1.15.	Adequate storm water management system must be implemented on site and storm water structures must be properly maintained to ensure their effectiveness.	Compliant	The fuel storage area and above ground storage tanks are constructed within cement lined and bund walls to retain 110% of the capacity of the tanks. Furthermore, the fuel storage area has been fitted with a sump and hydrocarbon separator. The oil / hydrocarbons are collected by an external contractor (Oilkol) and the affected water is diverted to PD 2 via a silt trap.
1.16.	The mixing of chemicals and hazardous substances must take place either on a tray or on an impermeable surface and waste must be disposed of at a registered landfill site	Compliant	No mixing of chemicals and hazardous substances was observed at the Above Ground Storage Tanks.
1.17.	Construction vehicles and equipment must also be checked and maintained regularly to ensure that there is no environmental contamination as a result of oil, fuel or hydraulic fluid leakages.	Not Applicable	The Above Ground Storage Tanks is under operational phase. Therefore this condition is not applicable.
1.18.	All hazardous and risk areas must be clearly indicated with signs and	Compliant	Signage is displayed at the storage tanks. This was confirmed during the site visit.
	The employees must be trained on occupational, health and safety aspects.	Compliant	Proof of training of employees on occupational, health and safety aspects was provided during the audit.
1.19.	A three-level containment system must be installed with the tank to ensure that spills and leaks are managed and possibly eliminated. If the spill occurs in a secondary	Compliant	A three-level containment system is installed for managing of spills and leaks. The tanks are fitted with a sump and a hydrocarbon separator.

CONDITION NO	CONDITION	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
	contained area or within a bund, it must be cleaned up manually using a pump or an absorbent material which must then be disposed of into a hazardous waste bin.		<p>Mafube Colliery developed a Chemical Spill Clean-Up Procedure, which indicates that when a leakage/spill occurs, the spill is contained using the correct absorbent material and/or sawdust to collect the spilt material. The contaminated absorbent material is then completely removed and disposed of in a hazardous waste skip as per the Waste Management Procedure. Oil contaminated material is disposed of as hazardous waste and collected by the contractor (TL Ideas for disposal at Holfontein. Safe disposal certificates were provided for review.</p>  <p>Sump and a hydrocarbon separator</p>
1.20.	The proposed storage facility must be designed and constructed in accordance with SANS 1089 Part 1.	Compliant	<p>SANS 1089 Part 1 outline the storage and distribution of petroleum products in aboveground bulk installations. As per the SANS 10089, the following must be considered when installing and constructing the above ground storage tanks:</p> <ul style="list-style-type: none"> • The volume of the largest tank must be fully contained- The volume of the tanks is displayed. • The bund should also contain of fire fighting water to prevent an environmental incident. –Fire extinguishers are available at the storage tanks. • The bund wall height be reviewed in light of the code or additional safety measures be introduced-The height of the bunded wall accommodate the size of the tanks.
1.21.	Disturbance to natural vegetation must be restricted to the absolute minimum and areas disturbed as a result of construction activities must be rehabilitated as soon as possible to the satisfaction of the Department	Not Applicable	<p>According to the assessment of the Google Earth Image and the approved layout of where the Above Ground Storage Tanks, the tanks are constructed as per the approved footprint area.</p> <p>All construction activities have been completed and compliance to this condition can no longer be determined.</p>
1.22.	No exotic plant species must be used for rehabilitation purposes. Only plants indigenous to the area must be used.	Not Applicable	The Above Ground Storage Tanks is under operational phase and no rehabilitation activities are undertaken as yet, therefore this condition is not applicable.
1.23.	Appropriate measures must be taken to remove alien vegetation and control new alien	Not Applicable	The Above Ground Storage Tanks is under operational phase and no rehabilitation

CONDITION NO	CONDITION	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
	vegetation recruitment on the property.		activities are undertaken as yet, therefore this condition is not applicable.
1.24.	Appropriate measures must be implemented to prevent and control veldfires.	Compliant	<p>Fire extinguishers are available around the fuel storage area and a firebreak plan has been implemented at Mafube Colliery.</p>  <p>Fire extinguishers available at the storage tanks</p>
1.25.	Stringent measures must be applied to suppress dust emanating from the construction site.	Not Applicable	The Above Ground Storage Tanks are under operational phase and no construction activities are undertaken. Therefore, this condition is not applicable.
1.26.	No surface or ground water may be polluted due to any activity on the property or site. The relevant requirements of the National Water Act, 1998 (Act No. 36 of 1 998) must be complied with at all times.	Compliant	According to the Water Quality Monitoring Report, two groundwater monitoring localities have been implemented. These monitoring localities include one monitoring point upstream of the workshops and associated fuel storage area (AGM-W1) and one monitoring point downstream of the workshops and associated fuel storage area (AGM-W2). According to the Water Quality Monitoring Report, no exceedance was recorded that would have resulted in pollution to surface and groundwater, though there were some few chemicals which had a high concentration that exceeded the RWQO limit.
1.27.	Mafube Colliery must monitor the tanks on a monthly basis as it is stipulated within the EMP.	Compliant	An environmental team led by the Mafube Colliery conducts weekly inspections for the entire Mafube Colliery and this include the inspections of the Above Ground Storage Tanks area. Weekly inspection reports were provided for review during the audit period.
General			
1.25.	A copy of this authorization 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.	Compliant	The environmental authorisation is kept in hardcopy and electronically at the Mafube Colliery environmental office. The electronic copy of the authorisation is also kept on the mine's database system and is accessible on all computers located across the mine. A copy of the EA is made available upon request.
1.26.	Where any of the applicant's contact details change, including the name of the responsible person, the physical or postal address and/ or telephonic details, the applicant must notify the Department as soon as the new details become known to the	Not Applicable	No changes of the applicant's contact details change, including the name of the responsible person, the physical or postal address and/ or telephonic details have been made to this environmental authorisation.

CONDITION NO	CONDITION	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
	applicant.		
1.27.	The holder of the authorisation must notify the Department, in writing and within 24 (twenty-four) hours, if conditions of this authorisation are not adhered to. Any notification in terms of this condition must be accompanied by reasons for the non-compliance.	Compliant	Mafube Colliery submitted a letter (dated 03 December 2018) to the Department of Mineral Resources and Energy informing them of the corrective actions related to the non-compliances from the external legal audit of the Mafube Colliery Environmental Authorisations about the submission of construction phase related documentations. The letter informs the Department that all construction work related to the above ground tanks have been completed in 2012 although no post-construction environmental audit reports are available.
1.28.	Non-compliance with a condition of this authorization may result in criminal prosecution or other actions provided for in the National Environmental Management Act, 1998 and the regulations.	Noted	The condition is well understood by Mafube Colliery Management.
Amended conditions			
1.	The Department would like to grant an amendment to the existing Authorisation by adding another activity for increasing fuel storage capacity by installing an additional tank within the same property and within the bund area housing the two existing AST's authorized by environmental authorisation issued on the 24th July 2007.	Noted	The condition is well understood by Mafube Colliery Management.
2.	The proposed infrastructure, installation and design as well as the operation of the tank must be in accordance with the relevant South African National Standards (SANS).	Compliant	It was confirmed during the site visit that the Storage facility complies with the SANS 10234:2008 Globally Harmonized System of classification and labelling of chemicals (GHS) which includes the following: <ul style="list-style-type: none"> ➤ MSDS ➤ The name, address and business telephone number of the manufacture or importer ➤ The identity and proportion disclosed for the chemical ingredient ➤ Hazard pictogram consistent with the correct classification of the chemical ➤ Hazard statement signal word and precautionary statement that are consistent with the correct classification(s) of the chemical ➤ Information about hazards, the first aid and emergency procedures for the chemical
3.	Please note that all the other conditions, environmental management plan and key factors that are stipulated in the Environmental Authorisation dated 24th July 2007 remain in force and are not amended in any way.	Noted	The condition is well understood by Mafube Colliery Management.


7.7 ENVIRONMENTAL AUTHORISATION FOR THE AMENDED ABOVE GROUND STORAGE TANKS, REF: 17/2/1/7 NK-11, DATED 15 MAY 2012

CONDITION NO	CONDITION	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
Amended above ground storage tanks Environmental Authorisation Conditions			
Scope of authorization			
3.1.	Authorization of the activity is subject to the conditions contained in this authorisation, which form part of the environmental authorisation and are binding on the holder of the authorisation.	Noted	The condition is well understood by Mafube Colliery Management.
3.2.	The holder of the authorisation must ensure compliance with the conditions by any person acting on his or her behalf, including but not limited to, an agent, sub-contractor, employee or person rendering a service to the holder of the authorization.	Compliant	The Environmental superintendent of Mafube Colliery is appointed to ensure compliance with the conditions of the environmental authorisation. Compliance to the conditions of the environmental authorisation by the any agent, sub-contractor, employee or person rendering a service at the facility are ensured through monthly inspections, internal audits and annual external audits. Should any concerns (including non-compliance) be identified, such are recorded on the Enablon system as incidents for corrective auctioning.
3.3.	The activity which is authorized may only be carried out at the property indicated above.	Compliant	The Above Ground Storage Tanks are situated on the coordinates as approved by this environmental authorisation.
3.4.	Any changes to, 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. 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 deviations and it may be necessary for the holder of the authorisation to apply for further authorisation in terms of the regulations.	Compliant	An amendment to the EA was applied for and approved. The EA for the above ground storage tanks was approved on 09/06/2011 with the amendment thereto being approved on 15/05/2012.
3.5.	This activity must commence within a period of two (2) years from the date of issue. If commencement of the activity does not occur within that period, the authorisation lapses and a new application for environmental authorisation must be made in order for the activity to be undertaken.	Not Applicable	It could not be determined if the Above Ground Storage Tanks were commenced within a period of two years from the date of issue of this environmental authorisation since no documentary proof was provided. This non-compliance is administrative in nature and does not pose any significant risk to the environment. Therefore, this condition is not applicable.
3.6.	This authorization does not negate the holder of the authorization, responsibility to comply with any other statutory requirements that may be applicable to the undertaking of the activity.	Noted	The condition is well understood by Mafube Colliery Management.
Appeal of authorization			
3.7.	The holder of the authorisation must notify every registered interested and affected party, in writing and within 10 (Ten) calendar days, of receiving notice of the Department's decision to authorize the activity.	Not Applicable	It could not be determined if the registered interested and affected parties were notified within a period of 10 (Ten) calendar days of receiving notice of the Department's decision since no notification was provided. This non-compliance is administrative in nature and does not pose

CONDITION NO	CONDITION	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
			any significant risk to the environment. Therefore this condition is not applicable.
3.8.	The notification referred to above must -	Not Applicable	It could not be determined if the notice include the following since no notification was provided: <ul style="list-style-type: none">Specify the date on which the authorisation was issued.Inform the interested and affected parties of the appeal procedure provided for in chapter 7 of the regulations. This non-compliance is administrative in nature and does not pose any significant risk to the environment. Therefore this condition is not applicable.
3.8.1.	specify the date on which the authorisation was issued;		
3.8.2.	inform the interested and affected party of the appeal procedure provided for in Chapter 7 of the regulations; and		
3.8.3.	Advise the interested and affected party that a copy of the authorisation and reasons for the decision will be furnished on request.		
Management of the activity			
3.9.	The Environmental Management Plan ("EMP") submitted with the application for Environmental Authorisation is hereby approved and must be implemented and adhered to throughout the lifecycle of the project.	Compliant	The EMPr for the above ground storage tanks forms part of the Aligned EMPr.
3.10.	An independent Environmental Control Officer must be appointed to ensure compliance with the conditions of this Environmental Authorisation.	Not Applicable	The Environmental Co-ordinator for the mine was appointed to take the role of the ECO for the project and was responsible to monitor and report on compliance to the conditions of the EA. It must however be noted that the condition indicated that the ECO must be independent, which was not the case with this appointment. This condition is however no longer applicable as the Above Ground Storage Tanks are already constructed and is in its operational phase. It must be added as well that the mine, despite appointing its own environmental officer, have complied with the purpose and intention of the condition in that a suitably qualified person was appointed to ensure compliance with the condition of the environmental authorization and the approved EMPr.
3.11.	The holder of the authorization must submit a post-construction environmental audit report to the department. The audit report must be compiled by an independent auditor.	Compliant	Mafube Colliery submitted a letter (dated 03 December 2018) to the Department of Mineral Resources and Energy informing them of the corrective actions related to the non-compliances from the external legal audit of the Mafube Colliery Environmental Authorisations about the submission of construction phase related documentations. The letter informs the Department that all construction work related to the above ground tanks have been completed in 2012 although no post-construction environmental audit reports are available.
3.12.	The Department retains the right to monitor and/or inspect the proposed project during both construction and operational phases.	Noted	The condition is well understood by Mafube Colliery Management.
3.13.	The Environmental Control Officer must ensure that all environmental activities delegated to contractors operating on site are implemented and ensure that all conditions of the Environmental Management Plan are adhered to.	Not Applicable	The construction activities with regards to Above Ground Storage Tanks are completed, therefore this environmental condition is not applicable.
3.14.	The applicant must ensure that there is an induction to all contractors in	Compliant	All contractors are required to undergo compulsory induction that includes social issues and no

CONDITION NO	CONDITION	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
	relation to environmental and social issues and awareness training to build capacity of staff regarding the management of the environment.		work is allowed to be undertaken by the contractors without attending the compulsory induction.
Operation of the activity			
3.15.	Fourteen (14) days written notice must be given to the Department that the activity will commence. Commencement for the purposes of this condition includes site preparation. The notice must include a date on which it is anticipated that the activity will commence.	Not Applicable	It could not be determined if fourteen (14) days written notice was submitted to the Department of Agriculture and land Administration and that the notice include a date on which it is anticipated that the activity will commence since no notification was provided. This non-compliance is administrative in nature and does not pose any significant risk to the environment. Therefore this condition is not applicable.
3.16.	All construction activities must be limited to the said site. No activities must be allowed on adjacent properties.	Not Applicable	The construction activities with regards to Above Ground Storage Tanks are completed, therefore this condition is not applicable.
3.17.	Chemical toilets must be provided to be used by site workers. These must be serviced on a regular basis. No pit latrines are allowed.	Not Applicable	The construction activities with regards to Above Ground Storage Tanks are completed, therefore this condition is not applicable.
3.18.	Potable water must be made available for site workers.	Not Applicable	The construction activities with regards to Above Ground Storage Tanks are completed, therefore this condition is not applicable.
3.19.	Construction work must be restricted from 07h00 to 18h00 from Monday to Friday, 07h00 to 13h00 on Saturday with operations being prohibited on Sundays and public holidays.	Not Applicable	The construction activities with regards to Above Ground Storage Tanks are completed, therefore this condition is not applicable.
3.20.	The provision of SASS Code of Practice 0103 – 1994 must comply with the recommended sound and noise levels for different areas of occupancy and activities for non-residential indoor spaces.	Noted	The condition is well understood by Mafube Colliery Management.
3.21.	There must be no refuse or rubble generated on the premises; placed, dumped or deposited on adjacent/surrounding properties including road verges, roads or public places and open spaces during or after the construction period.	Compliant	No refuse or rubble were noted on the premises, placed, dumped or deposited on adjacent/surrounding properties during the site visit.
3.22.	The underground tanks and pipelines must be monitored regularly to detect leaks and unnatural discharges as soon as possible.	Not Applicable	No underground tanks and pipeline exist; therefore, this condition is not applicable. An amendment of the environmental authorisation was submitted to the Department indicating that the diesel tanks are above ground not underground tanks and this amendment application was approved.
3.23.	Relevant authorities must be kept informed of spills and contingency plans must be in place to minimize pollution should a spill occur.	Not Applicable	No spillages were noted during the site visit. Therefore, this condition is not applicable.
3.24.	Groundwater monitoring wells must be installed in the tank area to act as future groundwater monitoring points.	Not Applicable	The storage tanks are above ground not underground, therefore this condition is not applicable.
3.25.	Manhole sections must be fitted with an overfill protection device and self-contained manhole which is impervious to hydrocarbons and is sealed to prevent contamination to the surrounding environment.	Not Applicable	The storage tanks are above ground not underground, therefore this condition is not applicable.
3.26.	The installation must further be fitted with monitoring wells on each end to	Not Applicable	The storage tanks are above ground not underground, therefore this condition is not applicable.

CONDITION NO	CONDITION	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
	allow sampling of groundwater to take place to detect contamination.		
3.27.	If and when contamination is detected in the monitoring wells, a rehabilitation plan must be compiled and implemented.	Not Applicable	The storage tanks are above ground not underground, therefore this condition is not applicable.
3.28.	The groundwater quality of the site must be monitored bi-annually and records of such monitoring must be kept on site.	Compliant	According to the groundwater monitoring report, two groundwater monitoring localities have been implemented. These monitoring localities include one monitoring point upstream of the workshops and associated fuel storage area (AGM-W1) and one monitoring point downstream of the workshops and associated fuel storage area (AGM-W2).
3.29.	The applicant must comply with policies and guidelines of the South African Bureau of Standards (SASS) that addresses environmental issues associated with the installation, construction, use and decommissioning of tanks and pumps for filling stations; SABS 0131: 1977.	Noted	The condition is well understood by Mafube Colliery Management.
3.30.	No concrete or gravel must be allowed to remain on any site after the construction phase.	Not Applicable	All construction activities have been completed. Therefore, this environmental condition is not applicable.
3.31.	All cement used during the construction period must be housed in properly protected sheds that will prevent spilling into the receiving environment.	Not Applicable	All construction activities have been completed. Therefore, this environmental condition is not applicable.
3.32.	If any archaeological remains are exposed during the construction phase, the South African Heritage Resources Agency (SAHRA) must be notified.	Not Applicable	All construction activities have been completed and Mafube Colliery indicated that no archaeological remains were exposed during the construction phase, therefore this environmental condition is not applicable.
3.33.	Contractors must ensure that construction vehicles are in a good condition and do not leak oil or transmission fluid onto the site and do not produce excessive smoke.	Not Applicable	All construction activities have been completed. Therefore, this environmental condition is not applicable.
3.34.	Soil contaminated by oil from leaking vehicles must be collected and disposed of at a hazardous waste disposal site.	Compliant	The contaminated soil generated as a result of oil from leaking vehicles is disposed of as hazardous waste into the red hazardous waste bins or skips and collected for disposal by a waste contractor (Holfontein). Safe disposal certificates were provided for review during the audit period. This is undertaken in accordance with the Chemical spill clean-up Procedure developed for Mafube Colliery.
3.35.	Waste generated at the proposed development must be disposed of at a registered waste disposal site.	Not Applicable	All construction activities have been completed; therefore, this environmental condition is not applicable.
3.36.	Solid waste generated by the construction teams must not be burned on site or the surrounding areas.	Not Applicable	All construction activities have been completed; therefore, this environmental condition is not applicable.
3.37.	Solid waste must be kept in bins from where it will be removed by the municipal waste disposal site operated by STLM on weekly basis.	Not Applicable	No solid waste is generated at the above ground diesel storage area, this environmental condition is not applicable.
3.38.	The cleared vegetation must not be burned on site but removed to a licensed waste disposal site on a regular basis.	Not Applicable	All construction activities have been completed; therefore, this environmental condition is not applicable.
3.39.	The fire safety design of the development must satisfy the requirements of SANS 10400 Code of Practice as well as SANS 10090 community protection	Compliant	Site observations confirmed that fire extinguishers are available on site and near the above ground storage tanks area

CONDITION NO	CONDITION	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
	against fire.		
3.40.	Fire extinguishers must be installed in areas that are easily accessible in the event of fire.	Compliant	<p>Site observations confirmed that fire extinguishers are available on site and near the above ground storage tanks area.</p>  <p>Fire Extinguisher located on site</p>
3.41.	Mafube Coal Mining (Pty) Ltd is responsible for the removal and appropriate disposal at a landfill site of all maintenance waste produced during the operational phase.	Compliant	Domestic waste generated from the above ground storage tanks area is collected by TL Ideas and disposed of at a licenced waste disposal site.
3.42.	Mafube Coal Mining (Pty) Ltd must ensure that the material generated during the decommissioning phase is cleared from the site and disposed of at a registered landfill site.	Not Applicable	The above ground storage tanks are still in use; therefore, this condition is not applicable.
3.43.	The developer must abide by the National Laws and Steve Tshwete Local Municipalities by-laws.	Noted	The condition is well understood by Mafube Colliery Management.
General			
3.44.	A copy of this authorization 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.	Compliant	The environmental authorisation is kept in hardcopy and electronically at the Mafube Colliery environmental office. The electronic copy of the authorisation is also kept on the mine's database system and is accessible on all computers located across the mine. A copy of the EA is made available upon request.
3.45.	Where any of the applicant's contact details change, including the name of the responsible person, the physical or postal address and/ or telephonic details, the applicant must notify the Department as soon as the applicant knows the new details.	Not Applicable	No changes of the applicant's contact details change, including the name of the responsible person, the physical or postal address and/ or telephonic details have been made to this environmental authorisation.
3.46.	The holder of the authorisation must notify the Department, in writing and within 24 (twenty-four) hours, if conditions of this authorisation are not adhered	Not Applicable	It could not be determined if a post-construction environmental audit report was submitted to the department since no post-construction environmental audit report was provided. Mafube

CONDITION NO	CONDITION	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
	to. Any notification in terms of this condition must be accompanied by reasons for the non-compliance.		Colliery submitted a letter (dated 03 December 2018) to the Department of Mineral Resources and Energy informing them of the corrective actions related to the non-compliances from the external legal audit of the Mafube Colliery Environmental Authorisations about the submission of construction phase related documentations. The letter informs the Department that all construction work related to the above ground tanks have been completed in 2012 although no post-construction environmental audit reports are available.
3.47.	Non-compliance with a condition of this authorization may result in criminal prosecution or other actions provided for in the National Environmental Management Act, 1998 and the regulations.	Noted	The condition is well understood by Mafube Colliery Management.
Amended conditions			
1.1.	The requested amendments are as follows: • The request is to change the installation from being overfill device and self-contained Manhole to Self-Bunded Tank.	Noted	The above ground storage tanks that were implemented at Mafube Colliery are self-bunded storage tanks. The mine further constructed a cement lined and bunded area on which these tanks were placed. The cement lined and bunded area was fitted with a sump and oil separator to further mitigate against any spillages.
1.2.	The requested amendments are as follows: • The trans tanks will allow for easy relocation should the current site be decommissioned.		
1.3.	The requested amendments are as follows: • In addition, the trans tanks require less civil works than standard AST's during construction thus reducing any negative environment impacts Associated with this phase.		
1.4.	The requested amendments are as follows: • There is no rehabilitation that needs to be undertaken when the tanks are moved to another site.		
1.5.	The requested amendments are as follows: • The self-bunded tanks also reduce negative environmental impact in the event of any accidental spillages.		
2.1.	The request for amendment has been considered and the amendments must be read in conjunction with the Record of Decision dated 2011/06/ 09. The concerns are as follows: • The proposed amendment must not alter the development footprint.	Compliant	The Above Ground Storage Tanks were situated on the coordinates as approved by this environmental authorisation.
2.2.	The request for amendment has been considered and the amendments must be read in conjunction with the Record of Decision dated 2011/06/ 09. The concerns are as follows: • The applicant is responsible for compliance with the provisions for "Duty of Care" and remediation of damage contained in Section 28 of the National	Noted	The condition is well understood by Mafube Colliery Management.

CONDITION NO	CONDITION	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
	Environmental Management Act.		
2.3.	Please take note that the onus rests on the applicant/developer to ensure that this amendment of the Record of Decision is brought to the attention of all Interested and Affected Parties.	Not Applicable	It could not be determined if the interested and affected parties were notified of the decision of this amendment of the Record of Decision since no notification was provided. This non-compliance is administrative in nature and does not pose any significant risk to the environment. Therefore this condition is not applicable.
2.4.	All the other conditions and key factors that are stipulated in the Record of Decision dated 9 June 2011 remain in force and are not amended in any way.	Noted	The condition is well understood by Mafube Colliery Management.

7.8 ENVIRONMENTAL MANAGEMENT PROGRAM: SPRINGBOKLAAGTE MAIN ALIGNED (REF: MP 30/5/1/2/2/172 MR), DATED 12 NOVEMBER 2019

Section 39(3)(D) and Regulation 50 (E)(F) and (I) and Regulations 51 (B)(I)(II) and (III): Construction Phase

Component	Condition	Finding	Observation / Audit evidence
Geology	No mitigation measures can be undertaken for the predicted impact. However, the mine will use removed material to backfill the opencast voids, access ramps, the shafts portals. All carbonaceous material from the overburden will be placed at the bottom of the mining pits/shafts and should be backfilled with the rest of the overburden material. This will reduce the exposure of the carbonaceous material to free oxygen, hence limiting the formation of acid mine generation.	Compliant	<p>According to Mafube Colliery Closure Plan (2021), rehabilitation of the opencast pits were undertaken throughout the mining operation i.e. concurrent rehabilitation whereby all material removed during mining (topsoils, softs and hards overburden) were replaced over the mined out opencast pits.</p> <p>During the site visit it was noted that with the exception of the East pit all mined out opencast pits have been backfilled. Through site observations at the east pit it is clear that carbonaceous material are placed at the bottom of the pits.</p> <p>The mine has also employed a rehabilitation officer who ensures that rehabilitation is in line with the EMP recommendations. The rehabilitation officer works hand in hand with the mine environmental department.</p>
Topography	The topsoil will be stripped to a depth of 300mm over the surface infrastructure area and stockpiled in a berm to the north of the area. All usable soil will be stripped from the box-cut area and stockpiled adjacent to the position of the final void. The overburden spoils will be placed adjacent to the position of the formal void, shaped, top soiled and re-vegetated to create stable 16° slopes.	Compliant	All overburden material including topsoil removed from the initial box cut have been used for the rehabilitation of the mined out opencast workings. The only topsoil stockpiles from the opencast mining remaining at the mine are the Pan 1 and pan 2 topsoil. No sign of erosion at the stockpiles were noted during the site visit.
Soils	The topsoil will be stripped to a depth of 300mm over the surface infrastructure and stockpiled in a berm ± 1.5m high to the north of the area. All usable soil (A-Horizon and Non-Piinthic B-Horizon) will be stripped from the box-cut area, during the winter months, and stockpiled adjacent to the position of the final void. The overburden spoils will be placed adjacent to the	Compliant	Topsoils stripped from the surface infrastructure has been placed as berms and stockpiles in close proximity of the mine surface infrastructure i.e. plant area, office/workshops, MRD facility, overland conveyor belt and the hard park areas. A plan showing the positions of the topsoil berms/stockpiles was provided during the audit. Some of the stockpiles were conform on site through site observation during

Component	Condition	Finding	Observation / Audit evidence
	position of the final void, shaped, top-soiled and re-vegetated to create stable 16° slopes, using specifications provided by Anglo Coal Environmental Services.		<p>the audit site visit. Based on visual observations berms were within the recommended height limits.</p> <p>With exception of topsoil for the Pan 1 and Pan 2 rehabilitation and topsoil and overburden adjacent to the east pit (final void), no topsoils and overburden material from the opencast mining remains. The above topsoils and overburden material were noted on site during the audit site visit.</p> <p>The topsoil and overburden material were also naturally vegetated.</p>
Land Capability	The record of the pre-mining land capability established prior to the commencement of mining, will be used as a guideline for re-establishing land capability during rehabilitation of the spoils. Land capability will be preserved through the proper management of soils and vegetation.	Not Applicable	The construction activities are completed at Springboklaagte; therefore, this commitment is no longer applicable. It must be note however that land capability studies were conducted and formed part of the mining licence/right application. The mine has been aligning the latest legislation to the 'Anglo Way' (the Biodiversity Assessment Tool), and since then, a land capability assessment was conducted during 2016 and 2017. Additional to this, a Rehabilitation Audit are undertaken, which are used to assess the status quo regarding rehabilitative measures undertaken and to determine rehabilitation needs going forward. A copy of the latest rehabilitation audit will be requested from the mine.
Land Use	Buy out or compensate farmers.	Compliant	The Mafube Mine had bought out required land from farmers and owns the land. Farm dwellers were also relocated during the early 2000s. Quarterly engagements are held with the relocated dwellers and they also have a grievances platform in place in accordance with the mine's procedure for grievances.
Natural vegetation	<p><u>Rescue of Threatened Plants</u></p> <p>A suitably qualified botanist will conduct a thorough examination of all areas of natural vegetation within the mining and surface infrastructure boundary, before site establishment commences, and mark out threatened plants for relocation. The botanist should be familiar with the target threatened and protected species and the relevant habitats in which they may occur. The most appropriate time to conduct the examination would be when the plants are in flower. The following actions will be undertaken for any threatened/protected plants specimens found:</p> <p>The locality of the specimens will be mapped and notes made on the micro-environment in which the specimen is located;</p> <p>A co-ordinate reading of the site will be taken using a Global Positioning System (GPS) so that the site can be found at a later stage if necessary; and</p>	Not Applicable	<p>The construction activities are completed at Springboklaagte; therefore, this commitment is no longer applicable. It must be note however that the mine's implements a Biodiversity Plan, which requires that floral walkthroughs and threatened plant relocations be undertaken. An on-site nursery has been established where such plants are maintained. The plants will be transplanted back to the Pan 1 Pan 2 reconstruction areas.</p> <p>Appointed external specialists, namely EkoInfo, undertake land capability, wetlands assessment and their rehabilitative methodologies.</p> <p>Data of plant localities are mapped and kept on record.</p>

Component	Condition	Finding	Observation / Audit evidence
	<p>At the appropriate time, qualified organisations will be contracted to remove the plants and carefully transplanted into an area outside the construction area, ensuring that the original micro-environment is replicated.</p> <p>It is essential that the flora experience as little disturbance as possible during the transplantation phase, to increase their chances of survival. An experienced and knowledgeable person should conduct transplantation.</p> <p><u>Revegetation of stockpiles</u></p> <p>The soil used to cap the stockpiles will be protected from erosion and compaction and revegetated as soon after construction as possible. Revegetate the berms as follows:</p> <p>Place the topsoil and spread evenly over the top and sides of the stockpiles;</p> <p>Harrow the area using a large disc harrow. If the soils are stripped in their dry state it will not be necessary to cultivate the topsoil. However if the soils are stripped when wet then ripping and discing of the topsoil will be undertaken prior to the seeding of the soils in order to break up any clods.</p> <p>Add a fertilizer using an industrial spreader.</p> <p>Harrow the area again to ensure that adequate mixing has occurred.</p> <p>Seed during late spring/early summer to yield the optimum germination and growth.</p> <p>A standard seed mix used by Anglo Coal for all rehabilitation activities will be used.</p> <p>The following maintenance has to be undertaken:</p> <p>All grazing animals will be kept off the area until the vegetation is self-sustaining;</p> <p>Newly seeded areas will be protected against compaction and erosion. Traffic over the area will be limited while the vegetation is establishing itself;</p> <p>Plants will be watered and weeded when necessary;</p> <p>Plants will be checked for pests and diseases at least once every two weeks during establishment and treated if necessary;</p> <p>Unhealthy or dead plant material will be replaced;</p> <p>Grassed areas will be fertilized with 200 kg/ha LAN (28) 4-6 weeks after germination, and</p> <p>Any erosion damage will be repaired and reseeded.</p>		<p>Based on site observations, the only overburden stockpile remaining at Springboklaagte are those close to the east pit (final void). These stockpiles, which include only softs with most of the hards having being used for backfilling the final void, have revegetated naturally.</p> <p>Material moved into Pit 1 and Pit 2 have been (clay material) stockpiled for return to the pans. It was noted that no need to vegetate these stockpiles are required at this stage, the topsoil stockpiles has naturally revegetated.</p> <p>It was reported that no hydroseeding had been done – only natural vegetation is left to re-establish. Site observations confirmed that the overburden at the East pit shows good regrowth.</p>

Component	Condition	Finding	Observation / Audit evidence
	Monitor the vegetation until at least 10% basal cover is achieved.		
Animal Life	Any form of hunting, poaching, snaring or trapping will be prohibited within the mine area. Environmental education will be provided to the workforce.	Not Applicable	Although this requirement complies with the decommissioning phase of the sites, numerous examples of biodiversity conservation is practised at the mine. Examples include: fencing in place, grass owl awareness and conservation and snaring is a serious offence and not tolerated at the mine.
Surface water	<u>Separation of clean and dirty water</u> Channeling of clean runoff around those areas that may affect water quality. This will include the construction of berms and canals around the workings and crusher areas, sized for the 1:100 year flood event.	Compliant	With the exception of the east pit that is in its decommissioning phase, no active opencast workings currently exist at Mafube Colliery's Springboklaagte section. Perimeter berms have been constructed around the pit to prevent entrance of clean water into the opencast pit.
	Construction of the Water Management Dam to contain affected runoff from the crusher and workshop areas.	Compliant	Mafube has constructed the following dirty water dams i.e. Raw Water Dam, Emergency Slimes Dam, Pollutions Control Dam (PD1), Pollution Control Dam 2 (PD2), Overland 1 dam, Overland 2 dam, T1 Storage tank, T2 Storage tank and Fire water tank. This dams collects water from the mine's dirty water areas and are authorised under the water use licence and indicated in the approved EMPR.
	The water quality of seepage from the initial overburden stockpiles of material from the box-cut will be monitored to ensure the water quality is acceptable, and either stored and evaporated or directed to the dirty water system.	Not Applicable	None of the initial overburden stockpiles exists, hence the commitment is no longer applicable.
	Separation of material excavated from the box-cut, with topsoil placed separately to the hard rock material, and carbonaceous material placed within dirty water areas as far as is practical, or contained.	Not Applicable	
	The infrastructure will be outside the 1:100 year flood lines, and mining will be outside of the 1:50 year flood lines during the construction phase.	Non-Compliant	According to the mine's IWWMP and the approved EMPR, PCD1 and the discard facility are situated within the 1:50 and 1:100 year flood lines. The mine is hence not complying with the commitment on placing infrastructure will be outside the 1:100 year flood lines. Contrary to the above, some parts of the approved EMPR has indicated that these facilities are situated within the 1:50 and 1:100 year flood lines. Further to the above, these facilities have been authorised via the mine's water use licence, however the water use licence is only a 21(g) and not a 21(c) and 21(i). Regarding these infrastructure that are occurring within the 1:50 and 1:100 flood line, it is clear that the commitment contradicts the baseline information that has been provided in the EMPR. It is therefore our recommendation that this commitment is either removed from the EMPR or amended to align with the relevant conditions of the water use licence.

Component	Condition	Finding	Observation / Audit evidence
	The haul road from the site will traverse the un-named tributary in the south east. This will be covered by a separate licence application.	Not Applicable	The opencast workings within the southeast has been rehabilitated hence it is assumed that the haul road would have been rehabilitated as well. The commitment on haul road crossing is hence no longer applicable.
	Borrow for the dam wall will as far as possible, be taken from the box-cut areas. A silt trap below the mining area will be constructed if required.	Not Applicable	The dams are already constructed, hence the commitment is no longer applicable.
	Silt and oil traps will be installed below the workshop and re-fuelling bays.	Compliant	Silt and oil traps were constructed at the workshop area. Silt traps were constructed at PD2 and oils traps are constructed at the workshop facilities. This was confirmed during the site visit.
	Maximised reuse of dirty water. The water make from the initial box-cuts will not be discharged, but will be stored in the Water Management Dam for reuse (primarily dust suppression).	Not Applicable	The box cut was constructed and rehabilitated during the construction phase hence the commitments on the box cut are no longer applicable. Note also that the dams are already constructed.
Ground-water	All unwanted water accumulating in the primary box-cut will be discharged into the pollution control dams constructed for the Mafube Colliery mining sections. Material excavated from the box-cut will be selectively placed either into general fill (non-carbonaceous material) or into a carbonaceous material stockpile.	Not Applicable	The construction activities (excavation of the box cut) are completed at Springboklaagte. This include the placement and use of the overburden material. This commitment is therefore no longer applicable.
	Water quality monitoring will be implemented prior to construction around the box-cut, and this will continue post-construction.	Compliant	Mafube Colliery, which is in its operational phase, developed and is implementing a water quality-monitoring programme.
Air Quality	The van der Merwe family as well as a number of farm worker homes located east of the van der Merwes will be relocated. The implementation of dust control measures at the construction sites will include: The revegetation of idle stockpiles and berms ; Maintaining vegetation cover in active areas for as long as is practically possible ; and Constant watering (with water trucks) in areas where materials removal, placement or manipulation is occurring. A dust fall out monitoring program at the remaining residences in the area will be initiated prior to the commencement of construction or mining.	Not Applicable	The construction activities are completed at Springboklaagte. This commitment is therefore no longer applicable. The following is however noted: <ul style="list-style-type: none"> The van der Merwe family and farm workers were relocated prior to 2004. Dust suppression is currently implemented at the mine using return water from the pits and wash out water. Water is collected from the admin tank 'Andru water tank' and T2 dust suppression water. Water is collected by bowser and trucks. Suppression is also undertaken during night shifts. Dust fall out monitoring is conducted on a monthly basis by Aquatico where PM10 and PM2.5 is also determined. Currently, the 'Anglo Air Quality way' is instilled but yet to be completed.
Vibration and Noise	The van der Merwe family located east of the surface infrastructure, and the farm workers living due east of the van der Merwe farmstead, will have to be relocated to avoid noise, vibration and fly rock impacts Vibration impacts from	Not Applicable	Blasting ceased in November 2018 and the van der Merwe family had been relocated prior to 2004.

Component	Condition	Finding	Observation / Audit evidence
	<p>blasting will be managed by :</p> <p>Maintaining a distance of 500 m from structures outside the mining boundary ;</p> <p>Blast designs for limiting vibrations to below 7dB, air blast to below 125 dB and fly rock at the remaining receptor sites;</p> <p>The use of sufficient and good quality stemming material;</p> <p>The use of an accurate initiation system;</p> <p>Limit blasting to daylight working hours during the week whenever possible, and under adverse weather conditions (i.e. overcast or strong winds)</p> <p>Blast monitoring to be undertaken as specified points around the site, and buildings to be investigated by qualified engineer on a regular basis;</p> <p>Closing the roads during blasting operations closer than 500 m from the roads. Relaxation of the 500-m blasting limit and road closure will be negotiated with the Mining Engineer and National Roads Agency ; and</p> <p>Conducting a crack survey of the remaining inhabited buildings in the vicinity of the mine prior to establishment of the mine.</p>		
Social Impacts	<p><u>Impact on Non-land owning resident</u></p> <p>Farms will be purchased on a willing buyer- willing seller basis.</p> <p>A viable and sustainable relocation plan will be developed with the full participation of the households concerned and in accordance with ESTA.</p> <p>If possible the households will be relocated to a rural location possessing similar resources, employment and access to land.</p> <p><u>Impacts on maize production and OTK silos</u></p> <p>Leasing of non-mining land for maize production</p> <p><u>Impacts on local roads</u></p> <p>Mine management will work with Mpumalanga Roads Department to ensure ongoing road maintenance and traffic management.</p> <p><u>Impacts on local retailers</u></p> <p>Labour, will be sourced in the surrounding area, where feasible with a transparent, well planned recruitment process.</p> <p>Facilitating local business participation in provision of mine services.</p>	Not Applicable	<p>The construction activities are completed at Springboklaagte. This commitment is therefore no longer applicable. The following is however noted:</p> <ul style="list-style-type: none"> • The Mafube Mine bought out required land from farmers and owns the land. Farm dwellers were also relocated during the early 2000s. • Some of the farms owned by the mine are leased to farmers. Farming remain in surrounding areas and continues around the silos. • The mine's social department liaise with the Department of Roads on regular basis via meetings with the mine's SIB team. • Recruitment and procurements are undertaken in line with the Anglo Social Way Procedure, which promotes sourcing labour in the surrounding area and local business participation.
Social Impacts	<p><u>Social Responsibility</u></p> <p>No housing of staff on-site;</p> <p>Working with local agencies to combat HIV/Aids;</p> <p>Co-operation in local security aspects;</p>	Not Applicable	<p>The construction activities are completed at Springboklaagte. This commitment is therefore no longer applicable. The following is however noted:</p> <ul style="list-style-type: none"> • According to the latest Social and Labour Plan for the mine, no housing is

Component	Condition	Finding	Observation / Audit evidence
	Maintenance of open communication; and Tasking the Mine Manager with the responsibility of cultivating good neighbour relations.		<p>made available on site for staff. Instead, all employees receive a housing allowance and provide for their own accommodation.</p> <ul style="list-style-type: none"> The town of Middleburg is close by for workers and Mafube-owned houses are available at Aloe Ridge and Hlalamnandi. The mine is involved in a number of campaigns and the include those earmarked for the combating of HIV/Aids. The mine co-operates with the local police and security agencies in a bid deal with security aspects. Mafube Colliery conducts community meetings with the surrounding communities in order to maintain an open communication with the surrounding communities. Copies of the presentations and minutes from some of the meetings held with the public was provided during the audit.
Archaeological & Cultural Sites	<u>No actions required.</u>	Noted	Not assessed.
Visual Effects	No actions required.	Noted	Not assessed.
Sensitive Landscape	No actions required.	Noted	Not assessed.
Geology	<u>Plant and Associated Rail Loop, Conveyor and Pipeline</u> No mitigation is required for geology during construction.	Noted	Not assessed.
Topography	<u>Plant and Associated Rail Loop, Conveyor and Pipeline</u> Reduce earth works to a minimum where possible, and retain optimal footprint area with decommissioning and closure planned for on an ongoing basis. <u>Discard Facility</u> No mitigation recommended.	Not Applicable	This condition applies to the design phase of the associated infrastructure already constructed.
Soils	All soil stockpiles, in whatever form they may be present, will be re-vegetated as soon as practically possible and will be grassed with a pasture seed mix and fertilised. This will reduce the erosion potential of the stockpile material by water and wind, by consolidating sediment and reducing the surface velocity of water or wind. Stockpiles will not be located near watercourses. <u>General stockpile management</u> Topsoil stockpiles should be reseeded with an appropriate mix of grasses to	Compliant	<p>The only topsoil stockpiles created during the construction of the mine and that is currently in existence at Mafube Colliery's Springboklaagte section include the pan reconstruction topsoil stockpiles. The stockpiles are located in close proximity of the areas of pan reconstruction area and away from the mine surface infrastructure areas.</p> <p><u>General stockpile management</u></p> <p>This have topsoil in the form of mostly clays that were stripped at depths of 300mm</p>

Component	Condition	Finding	Observation / Audit evidence
	<p>prevent erosion.</p> <p>Stockpiling of soil types will take place in a manner that will not cause excessive compaction.</p> <p>Soil stockpiles will be restricted to less than 2 m in height.</p> <p>Soil stockpiles will be placed upslope of any immediate construction activity that could result in dirty water runoff and protected against erosion by a storm water diversion bund.</p> <p>If soil is stockpiled for longer than 12 months, the stockpile must be stabilised by seeding with commercially available grass seed and must include at least one stoloniferous grass species (e.g. Cynodon dactylon).</p>		<p>and deeper from the mined pans. During the site visit it was noted that the topsoil stockpiles are sloped such that erosional activity is minimised. Based on site observations, the remaining soils are not compacted and photographic evidence at the time of the audit suggested that the stockpiles are revegetated. This is despite the stockpiles not being reseeded.</p> <p>Height of the stockpiles could not be determined during the site visit and audit interview.</p>
	<p><u>Plant Area</u></p> <p>A minimum depth of 300 mm soil must be stripped from the plant area.</p>	Not Applicable	The construction of the coal washing plant is complete and hence the commitment is no longer applicable.
	<p><u>Plant Area</u></p> <p>Remaining soils are not to be heavily compacted and are to be protected from contamination through development of an impervious (concrete) base in the plant.</p> <p>Fuel storage facilities will be bunded to SANS specifications to reduce risks of impact on soils.</p> <p>In the event of fuel or hydrocarbon spillage, bioremediation will be undertaken by using recognised products for this purpose.</p>	Compliant	<p>It was confirmed through site observation that the plant floor has been constructed to have a concrete base and the fuel storage facilities are bunded.</p> <p>Weekly inspections on the structures are undertaken by Mafube Colliery Environmental Department to determine any pollution or spillages.</p> <p>Pollution of and disposal/ spillage of any material are reported as incidents on the Enablon system which are handled in accordance with the Mafube Colliery “Coal Spillage and Clean Up Procedure” and “Incident Management Procedure”.</p>
	<p><u>Rail Loop</u></p> <p>Soil to a depth of 150 mm will be stripped from the area directly beneath the rail line in the rail loop.</p> <p>Soil will be stripped to a depth of 150 mm in any flat areas that do not require a cut or fill, and areas where the rail line will be built up by using fill/ballast material.</p> <p>Where the rail line needs to be constructed in a cutting, all usable soil will be stripped from these areas for later rehabilitation. This useable soil will be kept separate from any additional subsoil material that is removed from the cutting.</p> <p>Around the silo all useable soil will be removed and stockpiled for later rehabilitation.</p>	Not Applicable	The construction of the rail loop was completed and hence the commitment is no longer applicable.

Component	Condition	Finding	Observation / Audit evidence
	<p><u>Conveyor</u></p> <p>No soil be stripped from beneath the conveyor</p> <p>Weekly inspections of the conveyor route will be conducted to identify and conduct immediate clean-up of any coal spills beneath the conveyor</p> <p>The service road for the conveyor will have 150 mm of soil stripped from it. If any rock fill is required along the service road, the soil will be stripped to 300 mm in these areas so that, if the rock is pushed into the soil below these areas, they will still retain grazing capability when covered with 300 mm of topsoil at closure.</p>	Not Applicable	<p><u>Conveyor</u></p> <p>No stripping was allow and hence no topsoil stockpiles created, hence the commitment is no longer applicable.</p>
	<p><u>Discard Facility</u></p> <p>Soils will be stripped according to soils stripping guidelines contained under the development of the opencast section above.</p> <p>Useable soil, defined as all A horizon and the non-plinthic B horizon material, must be stripped from the discard footprint. These soil horizons can be mixed and co-handled.</p> <p>Stripped topsoil is to be stockpiled upslope of the footprint area, if not replaced immediately, and not within the drainage path of any areas containing materials with potential to pollute the environment</p>	Compliant	<p><u>Discard Facility</u></p> <p>It was confirmed through Google Earth imagery (December 2010) that indeed topsoil was stripped during the construction of a portion of the discard dump facility.</p> <p>Mafube Colliery provided a plan showing the location of all remaining topsoil stockpiles within the Springboklaagte section. Assessment of the plan indicated a topsoil stockpile in close proximity to the plant and MRD facilities, which the mine indicated that the soils were stripped from the plant and MRD facilities.</p>
Natural vegetation	<p><u>Plant and Associated Rail Loop, Conveyor and Pipeline</u></p> <p>Wetland systems will not be destroyed during the construction of the infrastructure.</p> <p>No endangered species have been identified at the proposed plant site. In the event that endangered species are identified during construction, they will not be destroyed. If required, these species will be relocated and protected.</p> <p>Local residents from the area will be allowed to remove unprotected plants of nutritional or medicinal value for relocation and use.</p> <p>The population of Red Hot Pokers (<i>Kniphofia sp cf ensifolia</i>) at CL2 must be relocated to suitable natural habitat in the local area, but clear of any impact. The relocation should be conducted under the supervision of an experienced ecologist/botanist after due consultation with Anglo-Eyesizwe and the relevant contractors</p>	Not Applicable	<p>The construction activities are completed at Springboklaagte. This commitment is therefore no longer applicable. The following is however noted:</p> <p><u>Plant and Associated Rail Loop, Conveyor and Pipeline</u></p> <ul style="list-style-type: none"> No wetlands were affected by the construction of the plant and associated rail loop, conveyor and pipeline without the necessary authorisations. No endangered species have been identified at the proposed plant site Threatened plant species were identified prior to construction activities. Where relevant these plants were removed for care at the onsite plant nursery and transplanted in other areas. <p><u>Discard Facility</u></p> <ul style="list-style-type: none"> According to the recent wetland assessment undertaken for the MRD expansion project, it is possible that a portion of a seepage wetland was destroyed during the construction of the current MRD facility. It is however

Component	Condition	Finding	Observation / Audit evidence
	<p><u>Discard Facility</u></p> <p>No endangered species have been identified at the proposed discard site. In the event that endangered species are identified during construction, they will not be destroyed. If required, these species will be relocated and protected.</p> <p>Local residents from the area will be allowed to remove unprotected plants of nutritional or medicinal value for relocation and use.</p>		<p>possible that at the time of the establishment of the MRD facility the wetlands were not identified as such hence no restriction would have been imposed.</p> <ul style="list-style-type: none"> No endangered species have been identified at the proposed discard site.
Land Use and Capability	<p><u>Plant and Associated Rail Loop, Conveyor and Pipeline</u></p> <p>Through the soil conservation measures proposed above, the land capability will be restored if possible to arable capability in the areas of the plant. The land will be returned to grazing potential as a minimum. Wetland areas will remain of wetland capability. Land capability along the conveyor and rail loop will be restored to a combination of grazing and arable land capability.</p> <p><u>Discard Facility</u></p> <p>The discards will become a permanent landscape feature. The land capability will therefore change from arable/grazing to wilderness.</p> <p>Rehabilitate to cap the discards as described under closure.</p> <p>Consistently plan and conceptualise closure requirements during design and construction.</p> <p>Retain a buffer zone around the facility as required for the decommissioning, closure and rehabilitation of the facility.</p> <p>Remove all useable soil from the footprint down to the ferricrete formation level.</p> <p>Ensure that the ferricrete formation integrity is retained during soil removal, through consideration of tyre and track impact from excavator and removal machinery as well as potential breaching of the layer through extraction.</p> <p>Prepare the base of the discard facility by inspecting the underlying ferricrete formation and supplementing the layer where required.</p> <p>The subsoil layer removed will be re-compacted on the footprint of the discard facility.</p> <p>On top of the re-compacted soil layer a discard/fines mixture will be placed to reduce seepage.</p>	Not Applicable	<p>These conditions apply to rehabilitations conducted once these areas are no longer in use and was therefore not applicable at the time of the audit.</p>

Component	Condition	Finding	Observation / Audit evidence
	<p>Above the discard/fines layer, a 200 mm coarse material (sand/aggregate) layer will be placed to induce preferential horizontal seepage flow towards cut-off trenches that surround the facility. The layer will be equipped with main and toe drains of 150 mm diameter slotted geo-piping wrapped in bideem and encased in 100 mm of inert aggregate.</p> <p>The cut-off trenches will not breach the ferricrete layer.</p> <p>Trenches will be monitored in terms of flow and water quality. Monitoring boreholes will be drilled between the cut off trenches and streams. Water quality data from the trenches and boreholes will be compared through a water and salt balance to determine loads escaping the pollution control system.</p> <p>Phyto-remediation measures will be implemented from the construction phase with <i>Rhus pendulina</i> and <i>Combretum erythrophyllum</i> trees being planted between the streams and dump to reduce seepage potential, take up salts and metals, screen visual impacts and to act as a wind break to reduce dust generation potential. If required, phyto-remediation can be stepped up with the controlled use of Eucalyptus trees.</p>		
Animal Life	<p><u>Plant and Associated Rail Loop, Conveyor and Pipeline</u></p> <p>Contractors and employees will be instructed not to disturb, hunt or kill natural fauna.</p> <p>The habitat of the Grass Owl (<i>Tyto capensis</i>), particularly the wetland at N4D4 along the road realignment of the P154, will be protected by minimising impacts at wetland crossings.</p> <p>Security and surveillance resources will be used to prevent poaching and to remove snares or trapping equipment.</p> <p>Employees and contractors will be alerted and educated about the penalties enforced by law in South Africa with regard to illegal hunting and trapping.</p> <p>Watercourse crossings to implement the measures outlined under surface water below.</p> <p><i>Discard Facility</i></p> <p>The above measures apply. Rehabilitation measures will be discussed under closure objectives.</p>	Not Applicable	Prior to and during construction of the sites, numerous examples of biodiversity conservation is practised at the mine. Examples include: fencing in place, grass owl awareness and conservation and snaring is a serious offence and not tolerated at the mine.

Component	Condition	Finding	Observation / Audit evidence
Land use	<p><u>Plant and Associated Rail Loop, Conveyor and Pipeline</u></p> <p>Through the soil conservation measures proposed and land capability measures proposed above the land capability will be restored to pre-mining land capability in the areas of the plant and other infrastructure. Wetland areas will remain of wetland capability.</p> <p><u>Discard Facility</u></p> <p>Through the soil conservation measures proposed above and under topography. The long-term land use will be as wilderness land protected from livestock grazing.</p>	Not Applicable	The construction activities are completed at Springboklaagte. These commitment also applies to the rehabilitation to be conducted once these areas are no longer in use and was therefore not applicable at the time of the audit.
Surface Water	<p>Water that has come into contact with coal during washing activities, or from precipitation on the discard facility, can have a significant impact on surface water quality.</p> <p><u>Plant and Associated Rail Loop, Conveyor and Pipeline</u></p> <p>Storm water measures will be implemented to separate clean and dirty water systems. All water falling in the plant area will be contained and directed to the mine water circuit.</p> <p>The systems will be audited on an annual basis.</p>	Compliant	<p>The construction activities are completed at Springboklaagte. Parts of this commitment is therefore no longer applicable, however the following that is applicable were noted during the audit i.e.:</p> <p>According to the mine's latest IWWMP, the mine is divided into clean and dirty water management areas.</p> <p><u>Plant and Associated Rail Loop, Conveyor and Pipeline</u></p> <p>Storm water from the plant and workshop area and is drained into PD 1, PD 2. Storm water from the conveyor belt is drained into Overland dam 2 and Overland dam 2.</p> <p>A storm water management plan compiled for Mafube Colliery was provided during the audit. Based on the plan it was clear that the current storm water management system has been looked at and measures to correct issues identified provided. Of concern was the fact that the rail loop, which is concern was note mentioned in the plan.</p>
	<p>The proposed conveyor will cross watercourses in six locations while the road realignments will cross a further four watercourses.</p> <p>Conveyor footings should be sited outside the floodline of watercourses and bridge the watercourse in one continuous span where the width of the watercourse allows.</p> <p>Where the conveyor crosses a watercourse, it will be lined with metal sheeting to contain any spillage that may affect water quality</p> <p>Weekly monitoring and inspection of the conveyor will be conducted to</p>	Compliant	<p>Where the width of the watercourse allowed, one continuous span (with the exception of the Overland Conveyor 1 and 2 crossings that have cement stilts with footings within the wetland), was implemented. It was also confirmed on site that where the conveyor crosses a watercourse the conveyor is lined with metal sheeting to contain any spillage that may affect water quality.</p> <p>Weekly monitoring and inspections of the conveyor belt are undertaken by the plant foremen, supervisors and environmental staff, as well as a contractor (Ngundu) hired to assist with spillages. Spilled coal is loaded and transported to the plant.</p> <p>No construction activities within wetland/watercourse areas were conducted during</p>

Component	Condition	Finding	Observation / Audit evidence
	<p>identify and clear coal spillages. Cleared coal will be returned to the plant for reprocessing.</p> <p>The tributary of the Klein Olifants and associated wetland immediately south of the N4 is too wide to bridge in a single span. Therefore the conveyor must cross the floodplain on elevated footings to minimise the impact to wetland hydrodynamics.</p> <p>No clear stripping of vegetation should be allowed within the construction servitude in wetland/watercourse areas.</p> <p>Tyre-mounted vehicles should access sites along a single track over vegetation.</p> <p>Vehicle passes must be limited.</p> <p>All surface disturbance within wetland areas will be rehabilitated by infilling with removed soils and replacement of removed vegetation.</p> <p>Rehabilitation within riparian areas must be signed off by an experienced ecologist.</p> <p>Culverts for road and conveyor crossings must be designed and sized so that flow during high discharge periods does not dam upstream of the crossing.</p> <p>Minimise unnecessary excavation of beds and banks of watercourses during construction.</p> <p>Disturbed soil on embankments adjacent to culverts, etc. must be protected from erosion by a rip-rap lining</p> <p>Construction activities within the floodline must be limited to the road/conveyor servitude. No contractor access will be permitted outside of the designated servitude.</p>		<p>the audit period.</p> <p>No activities or signs of such activities that would have lead to disturbance of the watercourses were noted at the stream crossings during the site visit.</p> <p>As built designs for the culverts for road and conveyor, crossings were provided. No new designs were developed for the current facilities where streams are crossed.</p>
	<p><u>Discard Facility</u></p> <p>Stripped soil from the discard footprint will be stockpiled outside the final toe line of the dump.</p>	Compliant	<p><u>Discard Facility</u></p> <p>It was confirmed through Google Earth imagery (December 2010) that indeed topsoil was stripped during the construction of a portion of the discard dump facility. Mafube Colliery provided a plan showing the location of all remaining topsoil stockpiles within the Springboklaagte section. Assessment of the plan indicated a topsoil stockpile in close proximity to the plant and MRD facilities, which the mine indicated that the soils were stripped form the plant and MRD facilities.</p>

Component	Condition	Finding	Observation / Audit evidence
	<p>Subsoils in the discard footprint will be reworked to develop low permeability layers to impede vertical movement of seepage and direct it laterally to interception trenches along the margins of the facility.</p> <p>A high permeability layer (drainage layer) will be installed above the low permeability reworked subsoils within the dump footprint to provide a preferential flow path for seepage to move laterally to the interception trenches.</p>	Not Applicable	All construction activities at the discard dump has been completed. These include the stripping and handling of subsoils and the construction of the foundations and drainage from the dump, hence the commitment is no longer applicable.
	<p>A clean water cut-off will be developed upslope of the discards on the edge of the operational area and reformed after every topsoil strip.</p> <p>Dirty water/seepage interception trenches will be developed on the west and south sides of the facility. The trenches will extend to a depth that will facilitate interception of laterally moving groundwater seepage within the zone between the ground surface and the top of the underlying bedrock.</p> <p>A lined dirty water collection dam will be situated at the southwest (downslope) corner of the discards.</p> <p>The capacity of the dirty water collection/containment dam must be sufficient to contain runoff from the final extent of the facility, the required peak storm runoff flow and anticipated seepage from the interception trenches.</p> <p>Clean water diversion will be provided around the perimeter of the dam and associated infrastructure</p>	Non-Compliant	<p>Storm water management at the discard dump is undertaken via a clean and dirty water trenches. The dirty water trench collect dirty water from the dump into (part PCD) PD 1 and the clean water trench diverts the water to the clean water environment.</p> <p>According to Mafube Colliery's Storm Water Management Plan, the discard dump is drained via the gravel dirty canal. The canal is used for intercepting the seepage water from the dump to PD1.</p> <p>PD 1, which was inspected during the site visit is not lined and has been silted with coal fines.</p> <p>According to Mafube Colliery's Storm Water Management Plan, the existing Plant PCD (PD 1) does not have enough capacity to cater for the dirty water from the site including the water from a 1:50 year storm event.</p> <p>According to the observations made on site, clean water around PD1 is diverted via a trench/berm.</p> <p>According to the storm water management plan, Mafube Colliery has investigated and recommended measures to address the above issues and this include rehabilitation of PD1 to a clean attenuation dam and construction of a new dam with sufficient capacity and designing and construction of lined storm water diversion trenches.</p>
	<p>Discards will be spread and compacted to minimise void spaces and infiltration.</p> <p>The degree of compaction of the discards will be monitored. Monitoring will comprise DCP measurements, bulk density, void spaces and gas and temperature testing.</p> <p>The facility will be progressively rehabilitated as portions develop to final</p>	Compliant	<p>Watco Consulting has been appointed by the mine to monitor the dump to ensure that the discard dump compaction levels are satisfactory and that internal conditions are monitored for possible heating of the material. According to the report produced by the appointed consultant, the average compaction test results were found to be inside the specifications for discard facilities. A copy of the report was provided during the audit.</p>

Component	Condition	Finding	Observation / Audit evidence
	<p>profile.</p> <p>Rehabilitation will comprise of cladding with a 500 mm thick compacted sub-soil layer covered by a 300 mm thick topsoil layer (uncompacted) that will be vegetated.</p>		<p>It was also confirmed on site that the rehabilitation of the discard facility is being undertaken whereby soils are used for the cladding of the facility.</p>
Ground-water	<p><u>Plant and Associated Rail Loop, Conveyor and Pipeline</u></p> <p>To prevent groundwater contamination from storm water, storm water management as discussed under surface water will apply.</p> <p><u>Discard Facility</u></p> <p>The measures discussed under surface water will apply.</p> <p>Two groundwater monitoring boreholes should be installed down gradient of the discard facility during construction of the facility and before discard deposition commences. The decision on location of the boreholes will be taken in conjunction with an experienced hydrogeologist.</p> <p>Groundwater levels and sampling should be conducted on a quarterly basis but monthly for the first 12 months. Analytical parameters to be included are listed in the groundwater report.</p> <p>Mafube Colliery will commission an independent hydrogeologist to develop a mathematical contaminant transport groundwater model for the mine and discard dump. The model input should include data from the monitoring boreholes, and the model should be run on an annual basis to predict and determine seepage volumes and pollution plumes.</p> <p>If the proposed mitigation measures set out under surface water do not contain pollution, and the model and the monitoring of the stream indicate a threat to water users, including the aquatic ecosystem, then Mafube will:</p> <p>Step up phyto-remediation techniques using <i>Eucalyptus camaldulensis</i> and;</p> <p>Equip monitoring boreholes to become scavenging boreholes and a well field. Contaminated groundwater recovered by this system will initially be recycled through the beneficiation plant. On plant decommissioning, the water will be pumped to the proposed treatment plant.</p> <p>The interception trench system at the discard facility will be upgraded and deepened to capture further fugitive water.</p>	Not Applicable	<p>The construction activities are completed at Springboklaagte. This commitment is therefore no longer applicable.</p>

Component	Condition	Finding	Observation / Audit evidence
Air Quality	<p><u>Plant and Associated Rail Loop, Conveyor and Pipeline</u></p> <p>During construction, roads and excavation areas will be kept moist by means of a water bowser to prevent dust generation.</p> <p>Speed limits will be imposed to reduce dust generated from vehicles.</p> <p>A dust monitoring station will be established at each conveyor transfer point and the coal silo at the rail loop</p> <p>The dust monitoring programme will be extended to include an additional fallout dust monitoring bucket located to the southwest of the discard facility.</p>	Not Applicable	The construction activities are completed at Springboklaagte. This commitment is therefore no longer applicable.
Noise	<p><u>Plant and Associated Rail Loop, Conveyor and Pipeline</u></p> <p>Consider relocation of residences within the potential zone of influence of noise impacts from construction at the plant site and discard facility. Relocation to be conducted as described in the agreed Relocation Action Plan currently under development at the time of writing of this EMP.</p> <p>Vehicle exhaust and baffle systems will be maintained and checked on a daily basis to prevent undue noise generation.</p> <p>All noise generating crushers, load out facilities, machinery and compressors will be sheltered and screened where practically possible to reduce and sound transmission.</p>	Not Applicable	The construction activities are completed at Springboklaagte. This commitment is therefore no longer applicable. Relocation of residences within the potential zone of influence of noise impacts from construction at the plant site and discard facility was also undertaken during the construction phase of the plant and MRD facility.
Sensitive Landscapes	<p><u>Plant and Associated Rail Loop, Conveyor and Pipeline</u></p> <p>The discard facility will not be constructed within 100 m of the wetlands identified at the site.</p> <p>The 100 m exclusion zone around the wetlands will be fenced off during construction.</p> <p>Crossings of watercourses by the conveyor and road realignments will be conducted as indicated under surface water.</p> <p>Discard Facility</p> <p>The discard facility will not be constructed within 100 m of wetlands identified at the site.</p> <p>Detailed footprint design will allow for the 100 m separation distance.</p>	Non-Compliant	<p>According to the wetland study conducted by Geovicon in 2019, it was noted that the MRD facility and portions of the coal washing facility is currently situated less than 100 meters from the edge of the closest wetland system. It must be noted that that this study was undertaken after the approval of the mine's EMP, hence the commitment was decided on before the current knowledge of the wetlands was available to the mine.</p> <p>No fencing of the wetlands within the 100-meter zone were noted during the site visit conducted during the audit.</p> <p>Since these activities are already in existence and have been authorised under the water use licence, it is our recommendation that this commitment be amended to align with the mine's water use licence/application.</p>
Visual	<p><u>Plant and Associated Rail Loop, Conveyor and Pipeline</u></p>	Not Applicable	The construction activities are completed at Springboklaagte. This commitment is

Component	Condition	Finding	Observation / Audit evidence
	<p>During construction visual impact mitigation will be required through dust suppression.</p> <p><u>Discard Facility</u></p> <p>During construction visual impact mitigation will be required through dust suppression.</p> <p>A tree screen will be planted on the south side of the D684 realignment in the construction phase with <i>Rhus pendulina</i> and <i>Combretum erythrophyllum</i> to screen visual impacts from the N4 highway and to act as a wind break to reduce dust generation potential. The controlled use of <i>Eucalyptus</i> trees may be considered if seepage impacts need to be mitigated, as discussed under the proposed groundwater management actions in the operations section.</p>		therefore no longer applicable.
Socio-Economic	<p><u>Plant and Associated Rail Loop, Conveyor and Pipeline</u></p> <p>To ensure training in skills associated with minerals processing and export.</p> <p>Replace grazing land and food plots/gardens at alternative resettlement site(s) or provide cash compensation for loss.</p> <p>Construct adequate access points to land across the conveyor. These access points are to be identified in consultation with the land-owners.</p> <p>Compensate landowners for the conveyor servitude and construct replacement access roads before construction begins.</p> <p><u>Discard Facility</u></p> <p>To train previously disadvantaged individuals as operators in discard facility construction and operation.</p> <p>Terminate tenants lease agreement prior to start of construction.</p> <p>Initiate development of a RAP, and execute the RAP, before construction commences in order to relocate homesteads at the plant and discard site and along conveyor route. Fence plant and discard site, conveyor servitude and rail loop areas for security. Plant and discard site will be fenced with 6-foot chain link fence or similar. Conveyor and rail loop will be fenced with 6-strand agricultural fence or “bonox” type large aperture security fence.</p> <p>Contractors must adhere to traffic safety standards at all times.</p>	Compliant	<p>Mafube Colliery provides skills to their employees in accordance with the approved Social and Labour Plan. According to the Social and Labour plan for the period 2019 – 2023, skills will be provided in the following fields of work i.e. core business training (mining and coal processing) and artisans training. Strict training for all individuals operating and using equipment applies at the mine. Examples are on record of local dwellers having been recruited to the mine – some of which have achieved higher positions at the mine.</p> <p>It was confirmed during the site visit that Mafube Colliery mining area is fenced.</p> <p>Relocation processes were fulfilled as required by the Relocation Action Plan.</p> <p>Alternative access points to land across the conveyor belt were constructed.</p> <p>All landowners were compensated for the conveyor servitude.</p>

Component	Condition	Finding	Observation / Audit evidence
Interest and Affected Parties	<p><u>Plant and Associated Rail Loop, Conveyor and Pipeline</u></p> <p>A Resettlement Action Plan (RAP) will be set up through negotiations with affected parties. This plan was under development as of the writing of this EMP, and will be completed by mid-2006.</p> <p>Regular interaction will be maintained with key stakeholders in the area.</p> <p>Negotiations will be initiated and statutory requirements fulfilled for the relocation of four identified gravesites two adjacent to the plant/discards and two along the proposed conveyor route.</p> <p>Dust and noise suppression measures will be maintained and audited on an annual basis.</p> <p><u>Discard Facility</u></p> <p>Regular interaction will be maintained with key stakeholders in the area.</p> <p>Dust and noise suppression measures will be maintained and audited on an annual basis.</p>	Not Applicable	The construction activities are completed at Springboklaagte. This commitment is therefore no longer applicable.
Submission of Information	<p>Surface water and groundwater monitoring data from boreholes and streams surrounding the mine will be submitted to DWAF on a quarterly basis at least, or as directed in the conditions of the water use licence. Monitoring will take place on a monthly basis for surface water and on a quarterly basis for boreholes.</p> <p>In addition to the groundwater-monitoring network already established for Springboklaagte, additional two boreholes down gradient of the discard facility will be monitored.</p> <p>Water samples will be analysed for the determinants as indicated in the EMP.</p> <p>Flow will be measured in the water pipelines to and from the mine, plant and discard facility, the interception trenches around the plant and discard facility and the two streams downstream of the plant.</p> <p>Water and salt balances for the mine, plant and discard facility as well as the local river system can be drawn up as management tools and for the verification of models</p> <p>Gravimetric dust fall monitoring will take place at the current monitoring stations and around the discard facility and plant on a monthly basis until 2</p>	Not Applicable	The construction activities are completed at Springboklaagte. This commitment is therefore no longer applicable.

Component	Condition	Finding	Observation / Audit evidence
	<p>years after mining closure. Results will be sent to DME and MDALA on a quarterly basis. Dust buckets complying to SANS standards will be used and buckets will be equipped with bird rings and nets.</p> <p>Minutes of public forum meetings will be submitted to DME, MDALA and DWAF.</p> <p>Biomonitoring, SASS5 and fish surveys in the streams draining from the plant area will be carried out. Summer and winter surveys will be undertaken for a 3 year period but this frequency will be revised after 3 years in consultation with DWAF.</p>		
Maintenance	<p><u>Plant and Associated Rail Loop, Conveyor and Pipeline</u></p> <p>Annual report on status of land (degradation, erosion, weed prevalence) to DME and MDALA.</p> <p><u>Discard Facility</u></p> <p>Annual report on ongoing rehabilitation to be submitted to DME. Lower compacted areas to be ameliorated, fertilised and seeded as specified for rehabilitation. Weed control progress to be reported in same report.</p>	Not Applicable	The construction activities are completed at Springboklaagte. This commitment is therefore no longer applicable.

Section 39(3)(D) and Regulation 50 (E)(F) and (I) and Regulations 51 (B)(I)(II) and (III): Operational Phase

Component	Condition	Finding	Observation / Audit evidence
Geology	No specific management possible.	Not Applicable	Not assessed.
Topography	Reshape the spoils to ensure a free drainage topography toward the existing watercourses. Monitor the mining area for subsidence on an annual basis and reshape and rehabilitate any subsided areas that result in ponding to ensure that they are free draining.	Compliant	<p>With the exception of Pan 1 and Pan 2 area and the East pit all mined out opencast areas have been backfilled and the area shaped to be free draining. It was noted during the site visit that a few areas still require work on shaping however in general the mined out opencast pit area has been shaped to be free draining.</p> <p>Pan 1 and Pan 2 areas are currently being shaped to have topography that is in line with the approved rehabilitation plans.</p>
Soils	All usable soil (A-Horizon and Plinthic B-Horizon) will be removed and replaced	Compliant	With the exception of Pan 1 and Pan 2 area and the East pit all mined out

Component	Condition	Finding	Observation / Audit evidence
	on levelled spoils for rehabilitation. The wet based soils will be stripped and stockpiled separately from the dry, more sandy loams. The depth –limiting horizon for most of the soils on the site is either the saprolitic “C” horizon, or the soft plinthic B-horizon closer to streams. The depth of the soft plinthic B horizon will vary from as little as 300 mm to approximately 700 mm from the soil surface, while the saprolitic/rock base varies from 400mm to 1400mm.		<p>opencast areas have been backfilled and the area shaped to ne free draining. A number of areas within the rehabilitated areas that were not conforming to the overall rehabilitation plan are being reshaped to align with the mine rehabilitation plan.</p> <p>Topsoil stripped from the opencast mining have been used for levelling spoils during rehabilitation. With the exception of topsoil (wet based soils) striped from Pan 1 and Pan 2, no topsoil stockpiles remains at the Springboklaagte mining section.</p>
	Vegetation should not be cleared from the site prior to stripping. The maintenance of the vegetative matter will provide additional organic nutrients to the soil, which will aid the soils during the rehabilitation process, and will help to preserve the soil structure while stockpiled.	Not Applicable	Since mining of the target coal reserves at Springboklaagte section has been completed, no stripping including vegetation clearance has taken place during the audit period. This commitment is hence no longer applicable.
	<p><u>Soil replacement and land preparation</u></p> <p>Stones and boulders, encountered on the site, during the stripping operation should be stockpiled with the overburden, and will be buried, as deep in the soft overburden as possible, so that they do not interfere with the preparation of the seed bed during either the stockpiling stage, or the rehabilitation stage.</p> <p>The action of soil stripping causes the material to expand in volume, a process known as bulking. This is followed by a degree of natural compaction as the material settles after replacement. Induced compaction may lead to the following problems :</p> <p>Differential subsidence causing the development of hollows where water may collect and result in the waterlogging of materials ;</p> <p>Drainage impedence leading to a high water table, restricted rooting depth, waterlogging and an increased potential for flooding; and</p> <p>Prevention of proper root development.</p> <p>Induced compaction may be reduced by limiting the access of vehicles onto the rehabilitated land. Tracked vehicles or those with high floatation tyres should be used in preference to normal wheeled vehicles in the levelling operations. The effects of over-compaction may also be alleviated by ripping prior to planting.</p> <p>The area will be reshaped to be free draining, and soils should ideally not be placed on slopes with a gradient greater than 6 % to limit the potential for erosion. A shallow slope is preferable to enhance sub-surface drainage. Adequate sub-surface drainage will limit the potential for salinisation of the soils</p>	Compliant	<p><u>Soil Preparation:</u></p> <p>With the exception of east Pit, replacement of overburden from stockpiles and levelling of spoils have already been conducted over most of the mined out opencast workings.</p> <p>According to the mine rehabilitation team, topsoil spreading at the levelled spoils is undertaken to comply with the mine’s rehabilitation plan.</p> <p>No spreading of the topsoil over the Pan 1 and Pan 2 reconstruction site has been conducted as yet.</p> <p>Fertilizer applications are done according to Hydromulch’s method statement.</p> <p><u>Plant and Associated Rail Loop, Conveyor and Pipeline</u></p> <p>These facilities are still in their operational phases and hence no rehabilitation has been conducted as yet. This commitment is therefore not applicable to these facilities.</p> <p><u>Discard facility</u></p> <p>Watco Consulting has been appointed by the mine to monitor the dump to ensure that the discard dump compaction levels are satisfactory and that internal conditions are monitored for possible heating of the material. According to the report produced by the appointed consultant, the average compaction test results were found to be inside the specifications for discard facilities. A copy of the report was provided during the audit.</p>

Component	Condition	Finding	Observation / Audit evidence
	<p>and should enhance the agricultural potential of the soils. Areas of subsidence will be reshaped to be free draining or filled in with excess material.</p> <p>In order to further limit erosion, prior to the establishment of vegetation, it is recommended that erosion controls be placed at intervals over the rehabilitated land, using contour ridges. This should limit the effect of uncontrolled run -off onto the unconsolidated soils.</p> <p>Soil will be prepared according to the following methodology :</p> <p>Replace overburden from stockpiles and level</p> <p>Spread the soils evenly over the area to achieve pre-mining topography;</p> <p>In the case of the wet soils (Avalon/Bainsvlei/Westleigh/Kroonstad/Katspruit etc.) the leveled area must be ripped and disked to break up any induced structure (soil clods). Ripping is <i>only</i> recommended for the wet based and clay rich soils (dark or grey structured soils). A moderately deep rip is recommended as this helps to break up any compacted layers and clods, improves water infiltration and drainage, increases root penetration and aerates the soil. However , care must be taken not to rip the soils excessively since over- ripping may hasten the oxidation of organic material in the soil and may break down stable soil aggregates;</p> <p>Add fertilizer using a standard fertilizer spreader. The fertilizer should be applied in small quantities at regular intervals. The composition of the fertilizer will be based on a soil analysis conducted prior to application.</p> <p>The area is now ready for seeding.</p> <p><u>Fertilizers and soil nutrition</u></p> <p>Fertilizer requirements reported are based on sampling of the soils at the time of the baseline survey. These levels will change during the stockpiling period due to a number of physical and chemical processes. The fertilizer requirements should thus be re-evaluated at the time of rehabilitation. Soil sampling should be carried out by a qualified person to establish lime and fertilizer requirements prior to the starting of the rehabilitation process.</p> <p>Application of fertilizers should be carried out in small quantities at regular intervals so as to avoid any contamination of the groundwater and surface water environs.</p>		<p>It was also confirmed on site that the rehabilitation of the discard facility is being undertaken whereby soils are used for the cladding of the facility.</p>
Natural vegetation	<p>Revegetation will occur as follows:</p> <p>Soil handling and treatment should be as specified above under the soil action plan.</p> <p>Seed with the standard Anglo Coal seed mix.</p> <p>Maintain the vegetation as set out in construction mitigation measures until the</p>	Compliant	<p>The mine's appointed external rehabilitation specialists developed plans and strategies to achieve best possible rehabilitation outcomes.</p> <p>Based on site observation all backfilled, levelled and topsoiled areas have been seeded and a satisfactory vegetation cover were noted during the site visit.</p>

Component	Condition	Finding	Observation / Audit evidence
	unit is self-sustaining and at least 10% basal cover is achieved.		
Animal Life	Any form of poaching, hinting, snaring or trapping will be prohibited within the lease area. Environmental education will be provided for employees to promote awareness.	Compliant	Mafube Colliery undertakes induction for all employees, contractors and visitors. During the induction the attendees are made aware of the importance of the environmental management and compliance with the legal requirements to be met by the mine. Mafube Colliery's awareness programme, which form part of the mine's induction, includes the issues regarding prohibition of hunting, poaching, snaring or trapping will be prohibited within the mine area.
Surface Water	<p><u>Managing Impacts on Catchment Yield</u></p> <p>This impact will be managed by the following measures:</p> <p>All spoils will be rehabilitated and made free-draining as soon as possible after placement.</p> <p>Spoils will be placed to line and level within approximately 200m of the mining operation, and top-soiled within 300m. The full depth of available soils and subsoils will be placed on to the spoils.</p> <p>Note that with the British Box Cut method the area that will comprise the active mining area is relatively small, due to the zigzag nature of the mining operation, with the active face being only around 100m wide.</p> <p>Grassing of the top-soiled and reshaped spoils will be undertaken on a seasonal basis, that is, around early spring, to ensure germination of the grass species. However, by the start of the rainy season all topsoil areas will have been seeded to ensure maximum drainage of clean water from these areas back into the catchment system without excessive suspended solids.</p>	Compliant	<p>All spoils with the exception of the East Pit, Pa 1 and pan 2 reconstruction areas have been levelled and topsoiled. Note that all active coal mining operation were ceased in 2018 and only rehabilitation has been conducted from then at the opencast mine workings.</p> <p>Grassing of the top-soiled and reshaped spoils were conducted over the rehabilitated areas. Site observation during the site visit confirmed the above and a good vegetation cover were noted over the seeded areas.</p>
	Clean runoff will flow via a settling dam (if required) back to the clean catchment. The nature of the mining operation and location of the ramps has been considered to both simplify rehabilitation of the spoils, and to ensure that all of the rehabilitated spoils can be drained back to the catchment.	Compliant	The mined out areas are rehabilitated to conform to the after mining landform plan. A copy of the plan was attached as part of the approved EMPr.
	The footprint of the dirty areas (such as the crusher) has been minimised as far as possible, so as to limit the impact on catchment yield.	Compliant	<p>Storm water is managed within the dirty water areas of the mine. These areas were divided into catchments that drains into different dirty water dams i.e. PD1, PD2, Overland dam 1 and Overland dam 2. Water from PD1 and PD2 is returned to the plant. Water from Overland dam 1 and Overland dam 2 is used for dust suppression and water from Void 3 is used for the irrigation trials.</p> <p>It must be noted that the only water released from Springboklaagte ultimately is treated sewage water.</p>
	<u>Managing Impacts on Surface Water Quality</u>	Compliant	An application for the exemption for activities undertaken against the

Component	Condition	Finding	Observation / Audit evidence
	<p>The impacts will be managed as follows:</p> <p><u>Legal issues</u></p> <p>Compliance with all relevant legislation will be achieved. Where exemptions are required from (for example) Regulation 704 of the National Water Act, this has been set out in this document. An exemption from Regulation 704 is required for the mining through of the un-named stream in the north-western corner.</p> <p>Submission of the necessary water use licences timeously. Licences required to date include those associated with:</p> <p>The mining through of the un-named stream in the north-western corner.</p> <p>Dewatering of groundwater that may enter the box-cut.</p> <p>Storage and reuse of water generated through the mining operation.</p> <p>Crossing of the un-named tributary in the south-east by the haul road.</p> <p>Sewage treatment plant.</p> <p>These measures will be largely constructed during construction phase. However as mining progresses, the clean water canals will be progressively mined through and relocated up the slope.</p>		<p>requirements of the regulations under the GN 704 formed part of the Integrated Water Use Licence (IWUL) applications for the mine. IWULs and the exemptions were granted to Mafube Colliery.</p> <p>Since no audit in terms of the GN 704 regulations was provided, it could not be determined if the mine is complying with the GN 704 regulation.</p> <p>All existing activities listed below were conducted under water use licences granted to Mafube Colliery. Mafube Coal Mining (Pty) Limited has also submitted an application for the expansion or creation of a mineral residue depos together with its associated infrastructure.</p>
	<p><u>Minimisation of dirty water make</u></p> <p>All available soft materials will be used for the covering of the spoils to minimise the ingress of clean water to the spoils. Mining will occur in the southern section from the low lying areas on the coal seam to the higher areas. This will allow some of the dirty water make to be left behind as mining progresses. The British Box mining methodology will allow minimisation of the active mining and ramp areas, since each access ramp is backfilled as mining progresses from the west back towards the east.</p>	Compliant	<p>According to the mine's rehabilitation statistics, approximately 320 000 m³ of overburden material have been moved during the audit period. This include the softs material that were used to cover the spoils. From site observations (Pan 1 rehabilitation) it was evident that softs are used to cover the spoils.</p> <p>In view of the above the mine is undertaken in compliance with the prescribed mining methodology.</p>
	<p><u>Maximised reuse of dirty water</u></p> <p>The water make will be pumped to the Water Management Dam, and reused primarily for dust suppression on the site and at the crusher.</p>	Compliant	<p>Since no active mining is conducted, no water is pumped from the mine workings to any of the mine's dirty water dams. Water from the current pits (East Voids) is however pumped to the irrigation trails and for dust suppression at the overland conveyor belt to Nooitgedacht Section.</p>
	<p><u>Treatment</u></p> <p>The mine is committed to treatment of the mine water as and when required. At this stage, it appears likely that the treatment plant will be required for part of the operational phase (between Year 6 and 17), and then again post closure. However, this will be monitored during the operational phase, and the plant constructed timeously to avoid unplanned spillages.</p>	Compliant	<p>No treatment of mine water is undertaken at the Springboklaagte section. Excess water from the Springboklaagte section is pumped to the current treatment plant at the Nooitgedacht Section.</p> <p>According to the mine's latest IWWMP, development of a detail water treatment strategy for the mine is one of management measures that were committed to. Delta H (an independent groundwater consulting company) has been appointed</p>

Component	Condition	Finding	Observation / Audit evidence
	<p>The treatment technology to be applied is uncertain at this stage, but could be a combination of neutralization and sulphate reduction. The expected low sodium concentrations are favorable for technologies such as the <i>ThioPiques</i> system that do not generate a brine.</p> <p>A commitment is also made that no acidic water will be stored in the above ground dams that is, should the water from the mining operation become acidic, it will be neutralized before being placed into the Water Management Dams. Current predictions are that it is likely that this water will become acidic during the operational phase. The target pH after treatment will be between 6 and 9.</p> <p>Any treatment process will be preceded by the required Environmental Impact Assessment to address issues such as the preferred process, and sludge and brine disposal if required.</p> <p>It should also be noted that sewage treatment will be by Biodisc, and the necessary licences for this system will be applied for.</p>		<p>to investigate options for the after mining water management including treatment for Springboklaagte section.</p> <p>According to the mine water balance, water from PD2 is limed before stored at the Raw Water Dam. However, no liming is undertaken before storage at other dirty water dams.</p> <p>Dirty water from the workshops is directed to PD2.</p> <p>Mafube Colliery's Springboklaagte operation has a single sewage treatment facility. Primary treatment takes place by means of a septic tank (primary settlement tank). The biological treatment of primary effluent is undertaken by means of the Bio-Filter rotating disc units. Humus removal occurs by means of a secondary settlement tank. Disinfection of final effluents is by means of a chlorine contact tank.</p>
	<p><u>Potential impact of workshops and coal handling facilities</u></p> <p>These areas will be isolated from the catchment, with facilities designed to divert the 1:100 year flood event from the clean catchment above them. All dirty water from these areas will be directed to the Water Management Dam via an oil and silt trap system</p> <p>The design of this dam has made allowance for these inflows, and the risk of spilling is discussed.</p> <p>Note that groundwater monitoring below all of the dirty water facilities will be implemented during the operational phase as discussed in the groundwater section.</p>	Compliant	<p>According to the updated IWWMP, the workshops and coal handling facilities are situated outside the 1:50 and 1:100 year flood lines.</p> <p>All dirty water from these areas is directed to PD 2. Hydrocarbon contaminated water from the workshop passes through oil separator before being directed to PD2. PD 2 has been equipped with a silt trap. The above was confirmed during the site visit.</p> <p>A number of monitoring boreholes are sited below the plant and workshop area for groundwater monitoring.</p>
	<p><u>Potential impact of the watercourse alterations on water quality</u></p> <p>The un-named watercourse in the north -western corner will be mined through from upstream towards the downstream end. By implication, there will at no time be a clean catchment upstream of mining. The runoff from the rehabilitated spoils will be directed past the active mining areas, so that no impact on the water quality within the un-named watercourse is expected. Monitoring is detailed in Part 6.2.16.8 to validate the above.</p> <p>More details on this canal will be provided in the licence application, which will be submitted concurrently with the EMPR documentation.</p>	Not Applicable	<p>The mining un-named watercourse in the north -western corner at Springboklaagte has been completed and hence the commitment is no longer applicable.</p>

Component	Condition	Finding	Observation / Audit evidence
	<p><i>Re-establishing the pans</i></p> <p>Pan 1 and 2 will be rehabilitated. The method for re-establishing the pans affected by mining is as follows:</p> <p>All pans will be profiled to determine their topography and soil characteristics;</p> <p>The size of each pan 's catchment area will be accurately determined;</p> <p>All thick weathered soils from the catchment areas of the pans will be stockpiled separately specifically for their rehabilitation, during stockpiling the soils will be seeded. The soils to be used will be typically Katspruit or Rensburg soils;</p> <p>Depressions will be created within the spoils to the same specifications as determined during the pan profiling with their low point at least three metres above the decant elevation;</p> <p>The stockpiled soils will be returned to the shaped depression and levelled to emulate the original pan profile;</p> <p>The elevation of the pan will be such that, should the researchers indicate that the pan is not functioning as intended, the area can be made free draining;</p> <p>The soils will be revegetated with seed collected from surrounding pans. Where necessary, organic material will also be introduced into the base of the pans, the aim is rehabilitate the pans to their pre-mining level of biodiversity;</p> <p>Monitoring will be instituted to quantify the recharge through the pan floor back to the mining operation. This will involve moisture measurement techniques as well as water balance monitoring, recharge from the pans is estimated to be between 30 and 50 Ml/day.</p> <p>The water balance has been based on no water contribution to the pan from the pit, so that it is clear that the pan re-establishment is intended as a mitigating measure for the mining through of the pan, and not as a form of evaporation to manage the water balance; and</p> <p>Presently the pans make use only of direct rainfall with a very small contribution from surface runoff and groundwater and the intention is that to be sustainable, the re- established pans should preferably not require additional water from the mining operation. It is noted that the existing pans are not perennial, but that once vegetation has established, the pans will be sustainable in terms of long term erosion and wind impacts</p> <p>Anglo Coal is determined to make every effort to ensure that pans are successfully rehabilitated, however should recharge from the pans be excessive (more than 10% of total water make of 1.1Ml/day) they will be made free-draining.</p> <p><i>Managing the Water Balance</i></p> <p>The water management strategy in Part 4.1.1 0 has been indicated previously in terms of separation of clean and dirty water, minimisation of the dirty water make, maximisation of dirty water reuse, and treatment if required. Specific</p>	Compliant	<p><u>Re-establishing the pans</u></p> <p>The mine has completed the designs for the reconstruction of Pan 1 and Pan 2. A copy of the designs drawings and reconstructed pan profile designs were made available to the auditors for review.</p> <p>Pan 1 is in its final stage of profiling. Profiling of pan 2 has not commenced as yet. The returning of the topsoil has not commenced as yet.</p> <p>Topsoil were stockpile separately. The stockpiles have seed naturally. The area is inspected by an independent service provided. A copy of the inspection report was made available during the audit.</p> <p>The above was confirmed during the audit site visit.</p> <p><u>Managing the Water Balance</u></p> <p>An annual water balance is updated by Golder Associates. These water balances are communicated to the DWS as per WUL communication requirements too. The mine has a comprehensive Scada System that monitors, measures, calculates and records the flow of water on the mine, between different facilities and ultimately what volumes of water are used on the mine and how much is released back to the environment.</p> <p>Water flow meters are of electronic type and are not calibrated but verified instead. Records of these verifications are kept.</p> <p>The mine has also established a "Rain readiness" spreadsheet towards remaining prepared for rain events in close collaboration with the Scada system data. The mine's "Live" system established via Scada is more aimed at the mine's water balance.</p>

Component	Condition	Finding	Observation / Audit evidence
	<p>points to be noted include:</p> <p>At the start of the project, the mine will construct the Water Management Dam with a storage capacity of 300MI. Oil skimming and settling facilities will also be constructed upstream of this dam.</p> <p>A key component in the management of the water balance will be the storage available within the spoils by mining uphill on the coal seam. However, this can result in management difficulties in that as available storage increases so to do the predicted water inflows. More extreme rainfall can result then in flooding of the workings. This will be managed by the following:</p> <p>Calibration of the water balance will be undertaken during the mining to ensure that the system is adequately sized. The management may be modified to take account of:</p> <p>The actual rainfall experienced over the mining period;</p> <p>The actual usage achieved;</p> <p>The extent to which the modelled water balance is verified over the life of the mine;</p> <p>Possible changes in mine planning and mine sequencing over the life of the mine; and</p> <p>The risk of higher than expected groundwater inflows during the operational phase.</p> <p>Provision has been made to construct a treatment plant at some point in the life of the mine, probably for the operational phase and also post closure. Usage of the treatment plant may not be required for a long time after closure and it may thus be a mobile plant that can be removed off site once it is not required.</p> <p>However, the plant could also remain on site to provide suitable potable water on site. Post closure is likely to require a permanent treatment installation a number of years of closure. Water efficiency practices will be installed to minimise the consumption of water, particularly potable and imported raw water.</p> <p>All of the above highlight the fact that the water management will be a dynamic and ongoing process, aimed at ensuring compliance with the legal requirements and good environmental practice over the life of the mine.</p> <p>Further, treatment is committed to as a management strategy, being potentially both neutralisation and sulphate reduction</p>		

Component	Condition	Finding	Observation / Audit evidence
	It is important to note that the above measures have been designed to have a 2% risk of spilling in any one year without Controlled Releases. The mine does not intend applying for Controlled Releases.		
	<p><u>Managing Flood Events</u></p> <p>The mine infrastructure will be located outside the 1:100 year floodlines, except at the headwaters to the un-named tributary in the north-west (which will be mined through). Flood protection measures will involve:</p> <p>Initially, providing suitably sized culverts where the haul road crosses the unnamed tributary in the south-east. These will be sized for 1:50 year rainfall events.</p> <p>The clean catchment will be directed around the mining area via a series of canals, each canal sized for the 100 year rainfall event. This will prevent spillage into the workings.</p> <p>As these canals are mined through temporary sumps for the small catchment downstream of each canal will be constructed to collect clean runoff, which will then be pumped back to the clean water system.</p> <p>Once mining progresses over the watershed, mining will be downhill and storm water management ahead of mining will not be required.</p> <p><u>Managing Stream Alterations</u></p> <p>The watercourse alteration has been discussed as part of the operational phase. No further measures are proposed.</p> <p><u>Maintenance</u></p> <p>All surface water pollution control structures will be inspected on a monthly basis and maintenance work carried out as required. Furthermore, all structures (e.g. dams) registered in terms of the Water Act will be maintained in accordance with the Act.</p> <p><u>Monitoring</u></p> <p>The objective of the surface water monitoring system is to ensure that the water management systems perform according to specifications, to act as a pollution early warning system, to check compliance with license requirements and for reporting purposes. The objectives of these systems will be achieved if there is no impact (attributable to the mine) on the in-stream and downstream fitness for use criteria.</p> <p>The sampling points are based on the points used to establish the baseline conditions, while additional points on the mine (for dirty water) will be added as required. Data will be presented in graphic and tabular form indicating</p>	Compliant	<p><u>Managing Flood Events</u></p> <p>With the exception of the PD 1 and PD 2 all infrastructure falls outside the 1:50 and 1:100 year flood lines.</p> <p>The un-named tributary in the north-west of the mine has been mined out and the area rehabilitated, hence commitment regarding the stream is no longer applicable.</p> <p>The mine has a comprehensive Scada software system in place that measures, monitors and assists in balancing water volumes on the mine, whilst an appointed specialist services provider "Mpumamanzi" is also responsible for assuring that surface and groundwater sampling and monitoring is conducted frequently i.e. surface water is monitored and reported on a monthly frequency and groundwater on a quarterly frequency.</p> <p>Inspections are undertaken on a regular basis (weekly) by the Plant team and the mine's environmental team.</p> <p>Mafube Colliery developed an environmental management procedure titled Integrated Water Management Procedure (dated February 2016) for enabling monitoring and assessment of the mine. The mine has in line with the procedure developed and has implemented a ground and surface water monitoring programme. This include sampling of water at strategically sited sampling points, analysis of the water samples and assessing the condition of the water resources and water management facilities based on the results of the water analyses. Water monitoring data is indeed presented in graphic and tabular form indicating maximum, minimum and average values.</p> <p>Monthly surface water and quarterly groundwater monitoring is conducted at the mine and the results are included in the quarterly report compiled by Mpumamanzi Group (dated March 2020). The Water quality monitoring reports are submitted to the Department on monthly basis. Proof of submission were provided for review during the audit period.</p>

Component	Condition	Finding	Observation / Audit evidence
	maximum, minimum and average values. Original data will also be provided, the information being submitted annually to DWAF or more frequently if required. Data will, however, be available on the mine for examination at any time. The environmental manager or his or her appointed assistant will undertake sampling.		
	<p><u>Monitoring and validation</u></p> <p>As for the construction phase, water quality monitoring downstream of the site will be undertaken. Again, upstream monitoring is not practical in most cases due to the streams being dry (close to the start of the catchment), but will be implemented where possible. The commitments to constituents and the frequency of sampling will be as specified in Section 9.3 of the 2004 EMPR.</p> <p>Potential impact due to the discharge of mine water.</p> <p>Management of the overall water balance together with detailed monitoring will prevent uncontrolled releases. As indicated previously, water management options to limit discharge of poor quality water include the following:</p> <p>Management of the water balance so as to prevent spilling for events up to 1:50 year flood event. This includes the re-use of dirty water discussed above.</p> <p>Provision of surface storage dam (called the water Management dam) to accommodate water make from extreme rainfall events (sized for the 1:50 year event or a 2% risk of spilling in any one year).</p>	Compliant	<p>The mine has a comprehensive Scada software system in place that measures, monitors and assists in balancing water volumes on the mine, whilst an appointed specialist services provider "Mpumamanzi" is also responsible for assuring that surface and groundwater sampling and monitoring is conducted frequently i.e. surface water is monitored and reported on a monthly frequency and groundwater on a quarterly frequency.</p> <p>An annual water balance is updated by Golder Associates. These water balances are communicated to the DWS as per WUL communication requirements too. The latest water balance update (2020) for the mine was made available to the auditors.</p>
Groundwater	<p>The mitigation strategies suggested during the operational phase for the strip mine is as follows :</p> <p>Management measures for the operational phase, relating to recharge potential, will focus on continuous rehabilitation as mining progresses. The recharge potential for un-levelled spoils is higher than that for levelled spoils, is higher than that of re-vegetated areas. Continuous, optimal rehabilitation will effectively minimize recharge to areas disturbed by strip mine mining.</p> <p>The increased influx of ground water into the strip mine during the operational phase, will be managed as part of the total water balance.</p> <p>Inter-mine flow during the operational phase and closure phase can be prevented by leaving barrier pillars intact, to prevent the migration of ground water to low-lying areas. The minimum thickness of such barrier pillars is site-specific, and the recommended thicknesses in Part 5.4.1.2 of the 2004 EMPR must be adhered to.</p> <p>A broad range of mitigation measures are recommended for the potential impact on ground water resources and the provision of alternative water supplies:</p>	Compliant	<p>Rehabilitation was undertaken during the active mining of the mined out opencast workings. The mine has completed the mining of the target coal seams and the opencast workings have been largely backfilled and levelled. Portions of the rehabilitated area have been revegetated.</p> <p>Regarding the inter-mine flow, the only mine immediately adjacent to Mafube Colliery is separated from the Mafube Colliery by the road. The road acts as a boundary pillar.</p> <p><u>Mitigation measures recommended for the potential impact on ground water resources and the provision of alternative water supplies</u></p> <p>Since active mining has ceased, no mine planning is necessary. The mine has however planned and is implementing the rehabilitation of the mined out workings.</p> <p>Stormwater drains off site and does not remain stagnant. Decant points have been identified for the East and West Pits (Delta H groundwater study) and the</p>

Component	Condition	Finding	Observation / Audit evidence
	<p>Mine planning personnel must determine the extent of strip mining for any given time during the operational phase. These areas, together with the additional areas covered by the virtual cone of depression, must be identified as the areas of potential depletion.</p> <p>Mine personnel must use the geohydrological information, as provided in Appendix 2, to determine the potential impact of strip mine mining on any given area (boreholes).</p> <p>All external users' boreholes within a 1 km radius of mining will be monitored for water level response.</p> <p>A structured compensation protocol, to be compiled in consultation with external users, will be commissioned for the Mafube Colliery mine areas. The yielding capacity of all boreholes potentially affected, must be mutually agreed on by the owner and mine authorities, according to Appendix 2, or through long-term geohydrological pump testing. The protocol will be initiated based upon a geohydrological interpretation of water level response and/or pumping test results.</p> <p>This protocol will control alternative water supply to external users in the event that their ground water resources have been detrimentally affected by Mafube Colliery mining activities.</p> <p>The infiltration of ground water from the coal handling facilities can only be minimized post-closure, by means of rehabilitation of the footprints of these facilities.</p> <p>The optimisation of mine planning can minimize a number of impacts. The same mitigation measures as for geology are proposed.</p> <p>For the monitoring of ground water during the operational phase, refer to Section 6.2. 16.9 of the 2004 EMPR of this report.</p> <p>Refer to Section 6.2.8 of the 2004 EMPR for the mitigation measures that will be implemented to manage all polluted surface water.</p> <p>Monitoring</p> <p>Monitoring of impact on the groundwater, relates to the following:</p> <p>Development of cones of depression around the strip mines. This will be achieved by including enough boreholes in a water-level monitoring system.</p> <p>Influxes of groundwater into the strip mine workings. This will be achieved by calibrating the operational phase water balance on a continuous basis.</p> <p>Possible impact on the yields of external users' boreholes and springs, for at least a 1-km buffer zone beyond any mining activity. This must form part of the implemented ground water monitoring system.</p> <p>Groundwater quality deterioration within the strip mine, in the shallow aquifers in</p>		<p>mine is able to determine a better understanding of the developments of its groundwater. A scavenger borehole will be sunk as part of the "Discard Dump Expansion Project". As part of this project, three additional boreholes at the Western Pit have been sunk towards forming a clearer understanding of the quality and quantity of groundwater. The mine survey department further monitors the level of groundwater in the remaining voids (East Void/Void 3). The monitoring is used to determine if the level of water in the voids have reached a decant level determined in the Delta H groundwater study and if it has the pumping of water from the void is initiated until safe levels are reached.</p> <p>Mafube Colliery developed an environmental management procedure titled Integrated Water Management Procedure (dated February 2016) for enabling monitoring and assessment of the mine. The mine has in line with the procedure developed and has implemented a ground and surface water monitoring programme. This include sampling of water at strategically sited sampling points, analysis of the water samples and assessing the condition of the water resources and water management facilities based on the results of the water analyses. Quarterly groundwater monitoring is conducted at the mine and the results are included in the quarterly report compiled by Mpumamanzi Group (dated March 2020). Groundwater monitoring include external user as well. The Water quality monitoring reports are submitted to the Department on monthly basis. Proof of submission were provided for review during the audit period..</p> <p>The mine has a comprehensive Scada software system in place that measures, monitors and assists in balancing water volumes on the mine, whilst an appointed specialist services provider "Mpumamanzi" is also responsible for assuring that surface and groundwater sampling and monitoring is conducted frequently i.e. surface water is monitored and reported on a monthly frequency and groundwater on a quarterly frequency.</p>

Component	Condition	Finding	Observation / Audit evidence
	<p>contact with all identified surface located pollution sources, as well as in external users' boreholes and springs. Possible pollution of ground water base flow into streams will also be monitored.</p> <p>A comprehensive groundwater-monitoring program will be commissioned at Mafube Colliery as soon as mining activities commences. The groundwater monitoring at Mafube Colliery mine must be done subject to monitoring guidelines contained in the document "Minimum Requirements for Monitoring at Waste Management Facilities", published by the DWAF. The monitoring philosophy to be adopted at Mafube Colliery mine, quoting from this document, will be: <i>"... the norm should be to conduct sufficient investigations and monitoring, to understand the short -, medium- and long term effect that waste management (in this case mining) may have on the ground water regime."</i></p> <p>The formalized groundwater monitoring system, will consist of the following:</p> <p>Dedicated monitoring localities, e.g. boreholes in/around rehabilitated mine workings, boreholes within potential impact zones of surface pollution sources (including below the dirty water management system), and selected external users' boreholes and springs. Care must be taken to ensure that the construction specifications of all additional boreholes (not yet drilled), are fully compliant with the Minimum Requirements of DWAF;</p> <p>Realistic monitoring frequencies, e.g. monthly for groundwater levels, and quarterly/six- monthly /annually for groundwater quality ;</p> <p>Applicable monitoring/sampling techniques, e.g. stratified sampling for monitoring holes, application sampling for external users' boreholes, and grab sampling for springs;</p> <p>Differentiated list of water quality variables, as applicable to the various sampling localities and frequencies;</p> <p>Laboratory analysis techniques will comply with SABS guidelines;</p> <p>Data storage protocols, e.g. data base, GIS;</p> <p>Information generation protocols, e.g. time series plots, compliance reports and maps, trend reports and maps, thematic maps on GIS, blending simulations, etc.</p> <p>Information submission protocols, including mode of communication, frequency of communication, etc. e.g. six-monthly compliance report to DWAF, and annual status report by independent geohydrologist; Monitoring response protocol , e.g. what will be done if monitoring information indicates that action is required</p>		
Air Quality	<p>The farm worker homes located between the farm boundary and the railway line will be relocated.</p> <p>The implementation of dust control measures during the construction phase will</p>	Compliant	Relocation processes were fulfilled as required by the Relocation Action Plan. A re-settlement area (Sikhululiwe Village) has been established whereby agricultural land was given to the municipality by Anglo to supply land for mine

Component	Condition	Finding	Observation / Audit evidence
	<p>include:</p> <p>The revegetation of idle stockpiles and berms</p> <p>Maintaining vegetation cover in active areas for as long as is practically possible; and</p> <p>Constant watering (with water trucks) in areas where materials removal, placement or manipulation is occurring.</p>		<p>workers post-closure.</p> <p>Dust fall out monitoring is conducted on a monthly basis by Aquatico where PM10 and PM2.5 is also determined. Monitoring reports show a decline in dust emissions which can potentially be attributed to changes in surrounding farming activities and the fact that blasting activities have ceased – the 'Dustwatch' monitoring station and the Plant dust watch monitoring station in the past would have yielded much higher dust particulate fallout results.</p> <p>Dust suppression is implemented at the mine using return water from the pits and wash out water. Water is collected by bowser and trucks. Suppression is also undertaken during night shifts.</p>
Vibration and Noise	<p>The farm worker homes located between the farm boundary and the railway line will be relocated. Blasting impacts will be managed by:</p> <p>Maintaining a distance of 500 m from structures outside the mining boundary ;</p> <p>Blast designs for limiting vibration to below 7dB, air blast to below 125dB and fly rock at the remaining receptor sites;</p> <p>The use of sufficient and good quality stemming material (not coal drillings) ;</p> <p>The use of an accurate initiation system;</p> <p>Limit blasting to daylight working hours during the week whenever possible, and under adverse weather conditions (i.e. overcast or strong winds);</p> <p>Blast monitoring to be undertaken as specified points around the site, and buildings to be investigated by qualified engineer on a regular basis;</p> <p>Closing the roads during blasting operations closer than 500 m from the roads. Relaxation of the 500-m blasting limit and road closure will be negotiated with the Mining Engineer and National Roads Agency ; and</p> <p>Conducting a crack survey of the remaining buildings in the vicinity of the mine prior to establishment of the mine.</p>	Not Applicable	The blasting activities have ceased since November 2018. This condition is not applicable at the time of the audit and was not assessed.
Archaeological & Cultural Sites	No cultural resources were found in the study area. However if human remains are encountered within the mining area they will be relocated in accordance with procedures laid out in the South African Heritage Resources Act (No 25 of 1999), Environmental Conservation Act (No 73 of 1989) and Ordinance on Excavations (Ordinance 12 of 1980).	Compliant	Graves were found at the eastern side of the mine area, and across the provincial road at Site 1 graves. These sites are marked and staff on the mine are aware of the restrictions of entering these areas and damaging the graves.
Sensitive Landscapes	Re-establishment of pans as discussed under surface water management.	Compliant	The Pan 1 and Pan 2 are yet to be fully re-established.

Component	Condition	Finding	Observation / Audit evidence
			See findings and observations under surface water.
Visual Aspects	No action required.	Not Applicable	Not assessed.
Socio-Economic Environment	<p><u>Impact on Non-land owning residents</u></p> <p>Farms will be bought on a willing buyer- willing seller basis.</p> <p>A viable and sustainable relocation plan be developed with the full participation of the households concerned and in accordance with ESTA.</p> <p>If possible, the households will be relocated to a rural location possessing similar resources, employment and access to land.</p> <p><u>Impacts on maize production and OTK silos</u></p> <p>Leasing of non-mining land for maize production.</p> <p><u>Impacts on local roads</u></p> <p>Mine management will work with the Mpumalanga Roads Department to ensure on-going road maintenance and traffic management.</p> <p><u>Impacts on local retailers</u></p> <p>Labour, will be sourced in the surrounding area, where feasible with a transparent, well planned recruitment process.</p> <p>Facilitating local business participation in provision of mine services.</p> <p><u>Social Responsibility</u></p> <p>No housing of staff on-site.</p> <p>Working with local agencies to combat HIV/Aids;</p> <p>Co-operation in local security aspects.</p> <p>Maintenance of open communication.</p> <p>Tasking the Mine Manager with the responsibility of cultivating good neighbour relations.</p>	Compliant	<p><u>Impact on Non-land owning residents</u></p> <p>The Mafube Mine bought out required land from farmers and owns the land. Farms have in the past been purchased from landowners for mining purposes in terms of willing buyer, willing seller scenarios. Farm dwellers were also relocated.</p> <p>Relocation processes were fulfilled as required by the Relocation Action Plan. A re-settlement area (Sikhululiwe Village) has been established whereby agricultural land was given to the municipality by Anglo to supply land for mine workers post-closure.</p> <p><u>Impacts on maize production and OTK silos</u></p> <p>Areas owned by the mine capable of offering farming activities and associated well-being have been and continue to be leased out to such individuals. Farming remain in surrounding areas and continues around the silos.</p> <p><u>Impacts on local roads</u></p> <p>The mine's social department liaise with the Department of Roads on regular basis via meetings with the mine's SIB team.</p> <p><u>Impacts on local retailers</u></p> <p>According to the mine's Social and Labour Plan 93% of employees are sourced from Mpumalanga Province.</p> <p>During the audit interview it was indicated by the mine that Mafube Colliery facilitates the growth and development of the area's small enterprise sector with the area. Recruitment and procurements are undertaken in line with the Anglo Social Way Procedure, which promotes sourcing labour in the surrounding area and local business participation.</p> <p><u>Social Responsibility</u></p> <p>According to the latest Social and Labour Plan for the mine, no housing is made available on site for staff. Instead, all employees receive a housing allowance and provide for their own accommodation.</p> <p>Mafube Colliery participates on programmes that are aimed at combating HIV /AIDS.</p>

Component	Condition	Finding	Observation / Audit evidence
			Mafube Colliery conducts community meetings with the surrounding communities in order to maintain an open communication with the surrounding communities. Copies of the presentations and minutes from some of the meetings held with the public was provided during the audit.
Surface Water	<p>Storm water management in plant and discard area.</p> <p>Upslope storm water diversion berms (clean water cut off) to be constructed above footprint area before commencement of topsoil stripping.</p> <p>Constructing a monitoring borehole in the rehabilitated mine spoils near the southern margin of the Springboklaagte coal reserve.</p> <p>Monitor pit water level throughout the life of mine until closure.</p> <p>Construct a plant to treat contaminated mine water as discussed under opencast surface water management OR pursue participation in regional initiatives to collectively treat mine water at a central location.</p>	Compliant	<p>The mine has clean and dirty water systems integral to the mine's design and physical infrastructure in place.</p> <p>Groundwater monitoring boreholes have been sunk for monitoring purposes.</p> <p>Mine water is treated at the Nooigedacht Water Treatment Plant.</p>
Ground Water	While the proposed change to the rate of mining may change the timing of groundwater impacts, it will not change the extent or significance of those impacts and the management measures proposed under opencast mining.	Noted.	The mine understands and takes cognisance of this condition.
Air Quality	<p>Implementation measures are the same as described under opencast mining above.</p> <p>In addition to these measures, the Anglo Coal-Eyesizwe joint venture will assess the feasibility of purchasing land adjacent to the mining operations to maintain a buffer zone of at least 1 km between the mining operations and the nearest sensitive receptors (residences).</p>	Compliant	<p>Dust suppression is implemented at the mine using return water from the pits and wash out water. Water is collected by bowser and trucks. Suppression is also undertaken during night shifts.</p> <p>Photographic evidence and induction material indicate that speeds in and around the mine are limited to 40km/h from the entrance to the mine to all workings and 60km/h between provincial roads and the main entrance. Speed monitoring is undertaken through a specialist program that monitors each driver's speed, collisions and visual monitoring through the mine's ENABLON system.</p> <p>Dust fall out monitoring is conducted on a monthly basis by Aquatico where PM10 and PM2.5 is also determined. All of the sampled industrial and residential localities complied with the limit stipulated by the National Dust Control Regulations (GN827) for industrial and residential areas.</p>
Noise	<p>The measures proposed under opencast mining above will apply. In addition:</p> <p>A crack survey will be conducted, supported by photographs of civil structures that may be affected by blasting within a 1 km radius of proposed mining operations. The survey should be conducted before the increased rate of mining is implemented. To address stakeholder issues raised during the EIA, the survey should include assessment of the grain silos at the Arnot Railway Station and the maize dryer on Springboklaagte.</p>	Not Applicable	<p>The blasting activities have ceased since November 2018. This condition is not applicable at the time of the audit and was not assessed.</p> <p>Complaints regarding cracks to structures have not been received by the mine.</p>
Maintenance	An annual report on ongoing rehabilitation will be submitted to DME. Mined areas will be reshaped, topsoiled, fertilised and seeded as specified in the Mafube Colliery EMPR. Weed control progress will be included in the same report.	Compliant	Annual Rehabilitation Reports are developed and communicated to the DMRE – the latest being for 2018 and 2019.

Section 39(3)(D) and Regulation 51: Decommissioning and Closure Phase

Section 39 of the MPRDA and regulation 51 of the MPRD Regulations have been repealed.

This section of the EMPr does not apply as yet since the Mafube Colliery is under operational phase. As such, this section of the EMPr could not be assessed and rated.

Section 39(3)(D) and Regulation 50(H) and Regulation 51(B): Monitoring of Environmental Impacts

Section 39 of the MPRDA and regulations 50 and 51 of the MPRD Regulations have been repealed.

During the impact assessment, potential impacts on the environment were identified. Mitigation measures as assessed in preceding sections of this audit report were also specified for prevention and management of the impact so as to minimise their effect on the environment. A monitoring programme was developed for the identified impacts and their mitigation measures. This monitoring programme will be undertaken and results thereof used to determine the effectiveness of the mitigation measures. The mine manager will ensure that all monitoring is conducted according to the approved EMPr.

As part of the general terms and conditions for a mining right, and in order to ensure compliance with the EMPr and to assess the continued appropriateness and adequacy of the EMPr the Mafube Colliery will:

- Conduct monitoring on a continuous basis.
- Conduct performance assessments of the EMPr once in two years.
- Compile and submit a performance assessment report to the minister in which compliance with the approved EMPr is demonstrated.

The table below summarises the monitoring requirements extracted from the EMPr:

Component	Condition	Finding	Observation / Audit evidence
Soils, topography and erosion	<p>Incidences of rill and gully erosion and/or excessive siltation in a specific area will be identified and impacted areas rehabilitated in terms of at least progressive in-filling of voids, shaping, topsoiling and grassing.</p> <p>Regarding the mineral residue deposit, regular inspections for erosion and formation of bare patches will be conducted. Where necessary, these will be repaired within 1 month of discovery. Erosion channels will be repaired, and vegetation cover re-established by the addition of fertilisers required.</p>	Compliant	The Mafube Colliery has comprehensive rehabilitation plans in place and monitored and updated by the mine's rehabilitation team. No erosion was noted during the site visit.
Natural vegetation	<p>The monitoring of natural vegetation will be conducted to determine whether concurrently established vegetation provides an effective cover and aids in controlling erosion, by undertaking the following:</p> <ul style="list-style-type: none"> Inspect rehabilitated areas to assess vegetation establishment and early detection of erosion in recently planted/seeded areas (for 3 months); and Assess rehabilitated areas by means of field inspections. During these assessments measurement of growth performance should be made of: <ul style="list-style-type: none"> Species present; Species abundance; Estimates of average plant basal cover, vegetation canopy and ground cover heights; Distribution, densities, growth, and survival of woody species; Dominant plant species (woody and herbaceous); Presence of exotic invasive species; and Occurrence of erosion, noting aspects such as type, severity, degree of sediment build-up. <p>Areas where invasive species have been previously eradicated and areas prone to invasive species (e.g. eroded/degraded areas, along drainage lines, etc.) will be visually inspected.</p> <p>Surveys will be conducted on relevant sites where bush encroachment has previously been identified, to determine the status quo of invasive vegetation.</p>	Compliant	<p>The Mafube Colliery has comprehensive rehabilitation plans in place. It was confirmed on site that with the exception of the east pit all mined opencast workings have been rehabilitated and a portion of the rehabilitated area have been revegetated.</p> <p>The mine has a rehabilitation teams under a supervisor that monitors and updates the mine's rehabilitation plans. The mine also uses external rehabilitation specialists to monitor and update the plans.</p> <p>According to the mine's rehabilitation status, approximately 95 hectares of rehabilitated areas have been revegetated during the audit period. The mine further plans to revegetate approximately 230 hectares before the end of 2021. A plan showing the areas seeded was provided during the audit interview.</p>
Land use and capability	The establishment and ability to maintain the established vegetation cover will be monitored.	Compliant	The Mafube Colliery has comprehensive rehabilitation plans in place and monitored and updated by external rehabilitation specialists.

Component	Condition	Finding	Observation / Audit evidence
Surface and groundwater	Mafube Colliery conducts surface and ground water monitoring at strategically place monitoring points within the catchments affected by the mining operation. The existing water quality monitoring program will be continued, until it can be shown that water quality (surface and groundwater) is both stable and within acceptable guidelines and limits, as determined by the relevant State Departments.	Compliant	Mafube Colliery has a surface water and groundwater monitoring programme in place as currently managed by Mpumamanzi, with surface water quality being monitored monthly and groundwater quality on a quarterly basis.
Bio-monitoring	Aquatic biomonitoring is conducted (twice annually) in tributaries of the Klein Olifants River consisting of perennial as well as non-perennial streams (unnamed spruits), situated to the north-west (Northern Tributary – NT) and the south-east (Southern Tributary – ST) of Mafube Colliery. Certain seepage zones (impoundments) and pans occurring adjacent as well as within the mining right area are also included in the assessment. Aquatic biomonitoring will continue through the decommissioning phase.	Compliant	Biomonitoring is conducted on by Digby Wells a bi-annual (seasonal) basis at Mafube Colliery to assess the impact of the mining activities on aquatic biota. Biomonitoring is undertaken upstream and downstream of the mining site. The downstream biomonitoring point (NT3) is at the same location as the preferred A1 site.
Air quality	The dust fall concentration and PM ₁₀ monitoring in the area around the mining activities are monitored at several monitoring stations on a monthly basis.	Compliant	Dust fall out monitoring is conducted on a monthly basis by Aquatico where PM10 and PM2.5 is also determined. All of the sampled industrial and residential localities complied with the limit stipulated by the National Dust Control Regulations (GN827) for industrial and residential areas.
Ground vibration and air blast	Ground vibration and air blast monitoring requires identified locations for monitoring. Monitoring of ground vibration and air blast is done to ensure that the generated levels of ground vibration and air blast comply with recommendations. Positions were selected to indicate the nearest points of interest at which levels of ground vibration and air blast should be within the accepted norms and standards as proposed in this report. The monitoring of ground vibration also qualify the expected ground vibration and air blast levels and assist in mitigating these aspects properly. This also contribute to proper relationships with the neighbours.	Not Applicable	Blasting activities have ceased since November 2018 rendering the ground vibration and air blast monitoring not applicable at the time of the audit.
Sensitive landscapes	The monitoring of the soils will be conducted as follows: Appoint an environmental control officer on the site to oversee stripping, handling and placing of soils according to the rehabilitation plan and other relevant specialist studies.	Compliant	An independent ECO (EkoInfo) was appointed and remains permanently on site. The ECO is to ensure that all EAs and EMPr requirements are undertaken by the colliery. The ECO also reports on the compliance to these requirements on a monthly frequency. As part of the ECO team, a rehabilitation specialist (Mr Willem de Frey) and the mine's Mr Jurie Human, form a rehabilitation consultation team to the mine.
	Conduct a dedicated land capability assessment on the post rehabilitation site through a soil scientist and ecologist. Aspects to be assessed are: <ul style="list-style-type: none"> Soil classification, mapping and penetrometer profiling on a detailed 	Not Applicable	Mafube Colliery has not completed the rehabilitation of the mined out opencast area hence are currently not in a position to undertake the land capability assessment on the post rehabilitation. A preliminary post mining landform plan together with the after mining

Component	Condition	Finding	Observation / Audit evidence
	<p>scale (100 m grid sampling)</p> <ul style="list-style-type: none"> Soil characteristics (chemical, physical, biological) through dedicate analysis of at least 1 topsoil and 1 subsoil sample per 4 ha area. Analysis include: pH, EC, Exchangeable cations and soluble ions (cations and anions), P Bray, Organic carbon (Walkley Black) and Texture. 		land use plan has however been provided for the Mafube Colliery. The land capability assessment on the post rehabilitation site will be developed under the guidance of the above plan and post rehabilitation land from assessment.
	<p><u>Vegetation Parameters</u></p> <p>The monitoring of the vegetation will be conducted as follows:</p> <p>Appoint an environmental control officer on the site to oversee the harvesting of plants and seeds, storage of such specimens and planting / establishment of the plants post mining.</p> <p>Appoint a site manager with an adequately strong ecological background to monitor the plants and plant communities over time.</p> <p>Dedicated removal of unwanted species should be conducted until the system reaches a state of dynamic equilibrium.</p> <p>Monitoring aspects are:</p> <p>Identification of land parcels / niches as per the land capability investigation outcome</p> <p>Determine management objectives based on site soil conditions and land capability survey results</p> <p>Identify monitoring units and monitor the following: Species composition changes in the management units, vegetation structure changes in the management units, basal cover changes in the management units, identify specific interventions required in the management units as challenges arise and identify opportunities for improvement not considered in the past</p> <p>Collection, structuring and communication of results in regular feedback reports.</p>	Compliant	<p>An independent ECO (EkoInfo) was appointed and remains permanently on site. The ECO is to ensure that all EAs and EMPr requirements are undertaken by the colliery. The ECO also reports on the compliance to these requirements on a monthly frequency. As part of the ECO team, a rehabilitation specialist (Mr Willem de Frey) and the mine's Mr Jurie Human, form a rehabilitation consultation team to the mine.</p> <p>Harvesting of plants and seeds before mining at Pan 1 and Pan 2 was undertaken and stored in seed banks. The appointed ECO (EkoInfo) together with the mine's environmental team are responsible for the monitor the plants and plant communities over time.</p> <p>The appointed ECO (EkoInfo) is responsible for the removal of alien plant species.</p>
	<p><u>Fauna Parameters</u></p> <p>The monitoring of the fauna will be conducted as follows:</p> <p>Appoint an environmental control officer on the site to oversee the assessment and introduction of specific faunal components – as a function of the outcome of the vegetation and wetland assessment components.</p>	Compliant	

Component	Condition	Finding	Observation / Audit evidence
	<p>Identify opportunities for the sourcing, introduction and monitoring of specific species depending on the developing site characteristics</p> <p>Appoint a site manager with an adequately strong faunal ecological background to monitor the species dynamics over time.</p> <p>Dedicated removal of unwanted species should be conducted until the system reaches a state of dynamic equilibrium.</p> <p>Monitoring aspects – as per vegetation with adaptation to fauna</p>		
	<p><u>Water Quality Parameters</u></p> <p>The water quality parameter monitoring will include:</p> <p>Placement of flow gauges on all overflow points to determine rates and volumes of flow.</p> <p>Water level indicators to be inserted within the pan storage area. Care should be taken not to puncture the constructed lining through injudicious auguring or insertion of pipes. As the lining is designed to prevent water ingress the instruments should be placed at the surface to monitor surface level fluctuation.</p> <p>Installation of suitable water monitoring infrastructure on the slopes, in the pan basins and on the overflow zones.</p> <p>Monitoring of water volumes, flow rates and fluxes and quality of water leaving the site at the lowest release point.</p> <p>Water samples to be collected monthly if water levels allow.</p> <p>Water samples to be subjected to detailed analysis as per the standard monitoring requirements of the broader mine area and licence conditions</p> <p>Water sampling regime to tie in with the existing regime conducted for the mine.</p>	Not Applicable	The commitment relates to the monitoring of water quality parameters at the reconstructed pan1 and pan 2. Since the reconstruction of the pans is not yet completed, the commitment is not applicable yet.
	<p><u>WET EcoServices Parameters</u></p> <p>The sediment trapping parameter monitoring will include:</p> <p>Identification sediment generation areas and potential sediment trapping areas (through establishment of vegetated swales) on site as an outcome of the land capability and vegetation assessment processes.</p> <p>Installation and vegetation of sediment trapping swales.</p>	Not Applicable	Since the reconstruction of the pans is not yet completed and the mine has not reached the final post rehabilitation stage for the Springboklaagte section. In view of the above, this commitment is not applicable yet.

Component	Condition	Finding	Observation / Audit evidence
	Monitor function and success as part of land capability and vegetation assessment.		
	<u>Pan Reconstruction and Rehabilitation Monitoring Programme</u> See report on mining and reconstruction of the two pans on the Mafube Colliery for the monitoring programme.	Not Applicable	The commitment relates to the monitoring of water quality parameters at the reconstructed pan1 and pan 2. Since the reconstruction of the pans is not yet completed, the commitment is not applicable yet.

7.9. ENVIRONMENTAL MANAGEMENT PLAN: THE OPERATION OF A BRIQUETTING PLANT AT MAFUBE COLLIERY, MIDDELBURG (DEDET REF. NO. 17/2/3 NK-47; 17/2/3 G NK21)

NO.	ASPECTS	MITIGATION MEASURE	FINDINGS	COMPLIANCE REVIEW AND RATING
5.2.1.	Topography	No mitigation required.	Noted	The condition is well understood by Mafube Colliery Management.
5.2.2.	Visual	No mitigation required.	Noted	The condition is well understood by Mafube Colliery Management.
5.2.3.	Noise	No mitigation required.	Noted	The condition is well understood by Mafube Colliery Management.
5.3.1.	Air quality	The plant will be operated in accordance with the National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004) and the Atmospheric Emission License.	Compliant	It was confirmed during the site visit that the briquette plant has not been in production. Mafube Colliery indicated that this is due to market related problems. However, when operational, the Briquetting Plant is operated according to Mafube Colliery's Briquette Plant Operating Manual, compiled by Enprotec (dated 18 December 2011). The Electrode Boiler is operated according to the Steam Boiler Plant Operating Maintenance Manual, developed by Allmech (dated 11 November 2011). These manuals outline procedures for start-up, operation, shut down, maintenance and troubleshooting. Furthermore, the briquetting plant and its equipment are included in the Mafube Colliery maintenance schedule.
		On commissioning of the PVA storage silo, a bag filter system/unit to be installed in order to control the emission of dust into the atmosphere.	Compliant	PVA dust is controlled by a dust extraction system built into the PVA storage silo of the briquetting plant.
		The effectiveness of this system to be monitored through the assessment of product lost during off-loading.	Compliant	Technical maintenance at the briquetting plant is conducted when the plant is operating at the mine, and during the last audit report the plant was not being inspected/ monitored since it was not operating.
		As a contingency measure, an alarm system and surveillance camera system to be installed in order to monitor the effectiveness of the bag filter system/unit.	Compliant	Sirens are used as alarm systems for monitoring the effectiveness of the bag filter system/unit.

NO.	ASPECTS	MITIGATION MEASURE	FINDINGS	COMPLIANCE REVIEW AND RATING
		In the event of the failure of the bag filter system, loading to be immediately ceased.	Noted	The condition is well understood by Mafube Colliery Management.
		Routine inspection of the dust extraction/filter system for visual signs of abnormal emissions to take place. If detected, immediate corrective action to be implemented.	Compliant	It was confirmed during the site visit that the briquetting plant was not operating during the audit period. However, when operational, the dust extraction/filter system is inspected by the plant manager on daily basis and by the Environmental Department on weekly basis to ensure effective dust extraction.
		Annual emission testing and reporting on the dust extraction/filter system to take place to ensure the minimum emission standard of 30 mg/Nm ³ is met and maintained.	Compliant	Emissions trends are reported to the Nkangala district Municipality as the licensing authority on an annual basis. Proof of submission of the annual monitoring report to the licensing authority was provided during the audit period. The AEL Annual Report and proof of submission the licensing authority were provided during the audit period.
		Visual inspection or monitoring of the binder off-loading process for fugitive emissions (PVA dust) to take place. If fugitive emissions are detected, corrective action to be immediately implemented.	Compliant	It was confirmed during the site visit that the briquetting plant was not operating during the audit period and no fugitive emissions were reported. However, when operational, visual inspections are undertaken by the plant manager on daily basis.
		Routine wetting of the unpaved surface at the binder off-loading facility and the area between the coal fines stockpile and the mixers to take place in order to reduce dust generation due to vehicle entrainment.	Compliant	The briquetting plant was not operating during the audit period. However, when operational, dust suppression is undertaken on the unpaved surface using water browsers.
		On-going monitoring of the moisture content of the coal fines stockpile to take place. If the moisture content falls below 8% then wetting to take place. (If the moisture content of the coal fines approaches 0%, then emissions during handling and from wind are possible.).	Not Applicable	The briquetting plant has not operating since 2017 and no coal fines stockpiles briquetting plant were available, therefore no monitoring of the moisture content of the coal fines stockpile was conducted during the audit period.
		Reclaiming of coal fines to take place during low wind speeds. Reclaiming to cease when dust emissions due to strong winds are observed.	Not Applicable	It was confirmed during the site visit that the briquetting plant was not operating during the audit period and no reclaiming of coal fines was undertaken.
		Visual inspection of the briquette stockpile to take place during windy conditions. When dust entrainment is observed, immediate intervention, i.e. spraying, to take place.	Not Applicable	It was confirmed during the site visit that the briquetting plant was not operating during the audit period and no stockpiles were available.
		Spillage of ultra-fine coal under the conveyor, feed hopper and/or briquetting plant must be removed on a daily basis and must be disposed of on the coal discard dump if this material cannot be reused as part of the briquetting process.	Compliant	No spillages under the conveyor feed hopper and the briquetting plant were noted during the site visit.
		The on-line weather prediction system and the real time data from	Compliant	An email from the Weather Station Report of Mafube Colliery (Mafube Coal

NO.	ASPECTS	MITIGATION MEASURE	FINDINGS	COMPLIANCE REVIEW AND RATING
		the Mafube Colliery meteorological station to be used by the environmental personnel to plan for dust control interventions during windy conditions.		CW99) is sent to the Environmental Co-ordinator of the current conditions of the windy situations. An email was provided during the audit period.
		The existing dust gauge network to be operated for the life of the plant. Seventeen (17) dust monitoring stations are in place at Mafube. Two sites are in close proximity to the proposed briquetting plant site (namely Site 14 (Mafube Plant) and Site 15 (Circular stockpile)) and could be used to monitor potential dust generation impacts as a result of the operation of the briquetting plant.	Compliant	Dust fallout monitoring is undertaken monthly at monitoring locations conducted by Aquatico to verify the efficiency of dust mitigation measures implemented on the mine. Dust fall-out exceedances are communicated and discussed during the various internal reviews and meetings held at Mafube Colliery.
		Annual reporting on the plant's performance to the relevant authority to be done for the life of the plant.	Compliant	An annual audit report compiled by Mafube Coal Mining (Pty) Ltd and proof of submission were provided for review during the audit period.
5.3.2.	Water	The surface water runoff from the briquetting plant area will be incorporated into the overall surface water management system of the existing coal washing plant and associated infrastructure. Water from this area drains towards the Pollution Control Dam no. 1 (PD1) located to the south of the coal washing plant. This pollution control dam receives water from the coal washing plant; the coal stockpiling and the coal discard dump areas. The said dam is located upstream of the Beestepan Dam, which is used for livestock watering.	Compliant	According to Integrated Water and Waste Management Plan (dated July 2019), it is indicated that the affected water runoff from the briquetting plant area is collected in trenches and is diverted to PD1 for containment and reuse.
		Storm water control measures will be provided as part of the overall briquetting plant site design. Plan 1 (Appendix 3) provides an indication of the general direction of surface water runoff in the vicinity of the proposed briquetting plant site. In addition, Plan 1 (Appendix 3) provides an indication of the proposed surface water management system to be implemented in order to separate clean water from dirty water.	Noted	The condition is well understood by Mafube Colliery Management.
		As indicated in Plan 1 (Appendix 3), the following existing water management structures are already in place:		
		Existing cut-off berm (no. 8; Plan 1) diverting clean water around the entire Mafube beneficiation (washing) plant area;	Noted	The condition is well understood by Mafube Colliery Management.
		Existing dirty water drain (no. 23; Plan 1);		
		Existing silt trap (no. 22; Plan 1);		
		Existing deflection berm (no. 30; Plan 1);		
		Existing deflection berm at substation (no. 37; Plan 1).		
		The following additional water management structures will be		

NO.	ASPECTS	MITIGATION MEASURE	FINDINGS	COMPLIANCE REVIEW AND RATING
		provided as part of the proposed briquetting plant design:		
		New clean water cut off berm (no. 3; Plan 1);		
		Dirty water drain concrete lined (no. 4; Plan 1); • Drift crossing dirty water drain (no. 26; Plan 1);		
		Dirty water culvert (no. 29; Plan 1).		
		The storm water management measures will be inspected on a regular basis in order to ensure that the structures are functional (not blocked) and not causing flooding of the surrounding roads, soil erosion or contamination of the clean storm water. This will be of particular importance at the start of the rainy season and during the rainy season.	Compliant	The stormwater management measures around the briquetting plant are inspected on weekly basis by Mafube Colliery Environmental Department. According to the weekly reports, no issues from the briquetting plant were reported. It must be noted that the briquetting plant was not operational during the audit period.
		The silt trap to be cleaned on a regular basis and the resulting silt to be disposed on the discard dump.	Compliant	It was confirmed during the site visit that the briquetting plant was not operating during the audit period and no silt was produced. However, the silt (if available) is cleaned and disposed of at the discard dump.
		The following additional measures should be implemented: debris and rubbish to be removed from kerb inlets and conduits during routine inspections; sediment to be removed especially after the first couple of months of installation as un-surfaced areas contribute a lot of sand/silt; debris, silt, etc. to be disposed of at an approved landfill site (if contaminated); check on structural integrity of kerb inlets after major storm events; damaged kerb inlets could lead to uncontrolled erosion downstream.	Compliant	Any coal material removed from the storm water management infrastructure is taken to the discard facility for disposal. Rubbish (as waste) is disposed in different waste bins (general and hazardous). Furthermore, weekly inspections are undertaken by Mafube Colliery Environmental Department to check for any damages. No major storm events have been recorded during the audit period. Further, any other form of waste removed from the storm water management infrastructure is disposed of in accordance to the Waste management and monitoring procedure.
		Stockpiling of coal fines and cured briquettes only to take place in the specifically demarcated areas. These stockpiling areas to be managed in order to prevent overflows into adjacent areas or adjacent storm water management measures.	Not Applicable	It was confirmed during the site visit that the briquetting plant was not operating during the audit period and no stockpiling of coal fines was undertaken.
		Coal, coal discard and broken/crushed briquettes removed from the storm water management measures must be disposed of on the coal discard dump if this material cannot be reused as part of the briquetting process.	Compliant	Any coal material removed from the storm water management infrastructure that cannot be reused as part of the briquetting process is taken to the discard facility for disposal.
		Spillage of ultra-fine coal under the conveyor, feed hopper and/or briquetting plant must be removed on a daily basis and must be disposed of on the coal discard dump if this material cannot be reused as part of the briquetting process	Compliant	No spillages under the conveyor feed hopper and briquetting plant were noted during the site visit.


NO.	ASPECTS	MITIGATION MEASURE	FINDINGS	COMPLIANCE REVIEW AND RATING
5.3.3.	Soil/land capability/agricultural potential	The surface water runoff from the briquetting plant area will be incorporated into the overall surface water management system of the existing coal washing plant and associated infrastructure as indicated in Section 5.3.2.	Compliant	According to Integrated Water and Waste Management Plan (dated July 2019), it is indicated that the affected water runoff from the briquetting plant area is collected in trenches and diverted to PD1 for containment and reuse. This forms part of the overall surface water management system of the existing coal washing plant.
		Storm water control measures will be provided as part of the overall briquetting plant site design as indicated in Section 5.3.2.	Noted	The condition is well understood by Mafube Colliery Management.
		The storm water management measures will be inspected on a regular basis in order to ensure that the structures are functional (not blocked) and not causing flooding of the surrounding roads, soil erosion or contamination of the clean storm water. This will be of particular importance at the start of the rainy season and during the rainy season.	Compliant	The stormwater management measures around the briquetting plant are inspected on weekly basis by Mafube Colliery Environmental Department to ensure that the structures are functional (not blocked) and not causing flooding of the surrounding roads, soil erosion or contamination of the clean storm water.
		The silt trap to be cleaned on a regular basis and the resulting silt to be disposed on the discard dump.	Compliant	It was confirmed during the site visit that the briquetting plant was not operating during the audit period and no silt was produced. However, the silt (if available) is cleaned and disposed of at the discard dump.
		The following additional measures should be implemented: debri and rubbish to be removed from kerb inlets and conduits during routine inspections; sediment to be removed especially after the first couple of months of installation as un-surfaced areas contribute a lot of sand/silt; debri, silt, etc. to be disposed of at an approved landfill site (if contaminated); check on structural integrity of kerb inlets after major storm events; damaged kerb inlets could lead to uncontrolled erosion downstream.	Compliant	Any coal material removed from the storm water management infrastructure is taken to the discard facility for disposal. Rubbish (as waste) is disposed in different waste bins (general and hazardous). Furthermore, weekly inspections are undertaken by Mafube Colliery Environmental Department to check for any damages. No major storm events have been recorded during the audit period. Further, any other form of waste removed from the storm water management infrastructure is disposed of in accordance to the Waste management and monitoring procedure.
		Coal, coal discard and broken/crushed briquettes removed from the storm water management measures to be disposed of on the coal discard dump if this material cannot be reused as part of the briquetting process.	Compliant	Any coal material removed from the storm water management infrastructure that cannot be reused as part of the briquetting process is taken to the discard facility for disposal.
		Spillage of ultra-fine coal under the conveyor, feed hopper and/or briquetting plant to be removed on a daily basis and must be disposed of on the coal discard dump if this material cannot be reused as part of the briquetting process.	Compliant	No spillages under the conveyor feed hopper and briquetting plant were noted during the site visit.
		Stockpiling of coal fines and cured briquettes only to take place in the specifically demarcated areas. These stockpiling areas to be managed in order to prevent overflows into adjacent areas or adjacent storm water management measures.	Not Applicable	It was confirmed during the site visit that the briquetting plant was not operating during the audit period and no stockpiling of coal fines was undertaken.



NO.	ASPECTS	MITIGATION MEASURE	FINDINGS	COMPLIANCE REVIEW AND RATING
5.4.	Overall management	Overall waste management at the briquetting plant will form part of the overall waste management system of Mafube Colliery. Domestic waste will be collected by a contractor and will be disposed of at the Steve Tshwete Local Municipality's municipal waste site as is currently the practice at Mafube Colliery.	Compliant	Waste storage, handling and disposal at the Briquetting plant is managed in accordance with the Waste Management and Monitoring Procedure developed for Mafube Colliery. Domestic waste generated from the briquetting plant is collected by Interwaste and disposed of at a licenced waste disposal site.
		A register of all hazardous substances stored on site must be kept. Relevant Material Safety Data Sheets (MSDS) must be available on site for all potentially hazardous substances (as defined in the regulations for Hazardous Chemical Substances). In the event of an emergency, procedures detailed in the MSDS must be followed.	Compliant	A register of all hazardous wastes brought onto site is kept by the Stores Department with the respective MSDSs maintained by Stores. On distribution of the hazardous substances to the respective departments, a copy of the MSDS is also distributed. This is also undertaken in accordance with the Handling and Storage of Hazardous Material Procedure developed for Mafube Colliery.
		Proper storage facilities must be provided for the storage of chemicals and any hazardous materials.	Compliant	It was confirmed during site visit that waste bins are provided for the storage of chemical and hazardous waste. The materials are stored in bunded areas.
		Hazardous waste must be separated from general waste, stored separately in appropriate containers and disposed of at a licensed hazardous waste disposal facility or certified recycling facility.	Compliant	It was confirmed during site visit that hazardous waste is separated from general waste. Hazardous waste are stored in red bins and are collected by TL Ideas (Pty) Ltd and disposed of at a licenced waste disposal site (Holfontein). Safe disposal certificates were provided for review during the audit period.
		No hazardous substance is to be disposed of on site.	Compliant	No disposal of hazardous waste on site was noted during the site visit. TL Ideas (Pty) Ltd is responsible for collection of hazardous waste.
		Contaminated sand generated as a result of hydrocarbon spills will be disposed of in a specially marked drum located in the workshop. On a regular basis, an approved waste contracting firm will collect the drum and dispose of the contaminated sand at an appropriate waste disposal site.	Compliant	The contaminated soil/fuel generated as a result of hydrocarbon spills is disposed of as hazardous waste into the red hazardous waste bins or skips and collected for disposal by a waste contractor (Holfontein). Safe disposal certificates were provided for review during the audit period. This is undertaken in accordance with the Chemical spill clean-up Procedure developed for Mafube Colliery.
		Contaminated soil/fuel that cannot be removed shall be treated in situ with an appropriate remedial agent. In this instance, the services of an expert may be required	Compliant	The contaminated soil generated as a result of fuel spills is disposed of as hazardous waste into the red hazardous waste bins or skips and collected for disposal by a waste contractor (Holfontein). Safe disposal certificates were provided for review during the audit period. This is undertaken in accordance with the Chemical spill clean-up Procedure developed for Mafube Colliery.
		Any material impregnated with fuel or oil must be placed in a drum and arrangements made for its safe disposal at an appropriate waste disposal site by an approved waste contracting firm.	Compliant	Any material impregnated with fuel or oil are disposed of as hazardous waste with all hazardous waste generated on site and is collected by a waste contractor (TL Ideas (Pty) Ltd) and disposed of at Holfontein. Safe disposal certificates were provided for review during the audit period
		Waste oils collected on site should be stored in drums in a designated, bunded area and removed by an approved recycling contractor and disposed of at an appropriate licensed waste disposal facility	Compliant	Old (waste) oil at Mafube Colliery is collected and taken off-site by an oil-recycling company. The oil is stored in drums in a designated, bunded area. Safe disposal certificates were provided for review during the audit period.


NO.	ASPECTS	MITIGATION MEASURE	FINDINGS	COMPLIANCE REVIEW AND RATING
		If any hazardous waste (e.g. oil, diesel, etc.) is produced as part of the operational phase, the said waste will be removed by a contractor to the Holfontein/Rietfontein hazardous waste sites as is currently the practice at Mafube Colliery.	Compliant	The contaminated soil generated as a result of hydrocarbon spills is disposed of as hazardous waste into the red hazardous waste bins or skips and collected for disposal by a waste contractor. Safe disposal certificates were provided for review during the audit period. This is undertaken in accordance with the Chemical spill clean-up procedure developed for Mafube Colliery.
		In all instances where a firm is contracted to collect waste, the site operator will ensure that the correct documentation is completed and filed for future reference.	Compliant	Hazardous waste is stored in red bins and are collected by TL Ideas and disposed of at a licenced waste disposal site (Holfontein). Safe disposal certificates were provided for review during the audit period. The Environmental Officer ensures that the correct documentation is completed and filed for future reference.
		Certificates of hazardous waste disposal (waybills) are to be kept for auditing purposes.	Compliant	Certificates of hazardous waste disposal are kept on site by the Environmental Department for auditing purposes.
		All pollution incidents must be reported to DEDET and DWA within 24 hours of occurrence.	Not Applicable	It was confirmed during the site visit that the briquetting plant was not operating during the audit period and no pollution incidents have occurred during the audit period.
		Records of environmental related incidents should be maintained.	Not Applicable	It was confirmed during the site visit that the briquetting plant was not operating during the audit period and no environmental related incidents have occurred during the audit period.
		An emergency plan for the handling of major/minor spills at the facility and during transportation of product must be compiled and a copy kept on site. Staff must be appropriately trained to implement the plan.	Compliant	An Emergency Preparedness and Response Plan developed for Mafube Colliery is used as a guideline for the management and the handling of major/minor spills at the facility and during transportation of coal fines and the Emergency Preparedness and Response Plan is kept on site by the Environmental Department.
		The site operator must ensure that all site workers receive relevant training with regards to the handling of hazardous substances and the potential health risks.	Compliant	All site workers receive training for the handling of hazardous waste and their potential risk through induction presentation.

7.10 ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT FOR THE AMENDED ABOVE GROUND STORAGE TANKS, REF: 17/2/1/7 NK-11, DATED 15 MAY 2012

COMMITMENT NO.	MITIGATION MEASURES	FINDINGS	OBSERVATION/ AUDIT EVIDENCE
SITE SELECTION			
3.1	No fuel is or will be stored within the 1:50 year floodline.	Compliant	According to the assessment of the Google Earth Image and the approved layout plan, the above ground tanks are not situated within the 1:50 year floodline.

COMMITMENT NO.	MITIGATION MEASURES	FINDINGS	OBSERVATION/ AUDIT EVIDENCE
	The site is located in an open space, where there are no structures that can impede access to the drain plug or filling point of the tank via the ladder.	Noted	The condition is well understood by Mafube Colliery Management.
	The sites are chosen so that they are not located close to flammable materials (sheds, eucalyptus plantations etc).	Noted	The condition is well understood by Mafube Colliery Management.
	The site location allows safe access for Shell's bulk delivery vehicle, taking into consideration the turning circle requirement of these vehicles.	Noted	The condition is well understood by Mafube Colliery Management.
	All above-ground tanks are sited on a bunded area in accordance with SABS 089 requirements.	Compliant	<p>The above-ground tanks are placed on a bunded area.</p>  <p>Bunded area of the above-ground tank</p>
TANK INSTALLATION			
3.2	The tanks must be installed using all parts provided and in accordance Shell's standards.	Compliant	The tanks have been installed using all parts provided and in accordance Shell's standards. Documentary proof was provided during the audit period.
	Any bent or faulty components must not be used, and the Shell Customer Service Centre must be contacted about replacement parts.	Not Applicable	No faults from the tanks was noted and reported during the audit period.
	The tank must not be used for any fuel or liquid other than the intended contents (i.e. diesel and, in few cases, illuminating paraffin).	Compliant	The above ground tank is used for the supply of diesel within the mining area.
	Ensure that the correct fuel resistant hoses are installed, capped and mounted so that they do not come into contact with the ground.	Compliant	The above ground tanks are within bunded areas and will have limited contact with the ground should a spillage occur.
	All tanks, other than BTF tanks with a maximum capacity of 2 200 litres, or SKID tanks, should be mounted on bunded areas and the bund maintained in good condition with no cracks or faults.	Compliant	None of the above ground tanks are above 2 200 litres. However, the tanks are within bunded area and no cracks were noted during the site visit.
	All tanks must be labelled with the volume they can contain.	Compliant	The above ground tanks are labelled with the volume contained.

COMMITMENT NO.	MITIGATION MEASURES	FINDINGS	OBSERVATION/ AUDIT EVIDENCE
			 <p>Volumes of the above ground tanks</p>
	No smoking signs must be posted in visible locations around the storage facilities.	Compliant	 <p>No smoking signs erected on the above ground tanks</p>
	Firefighting equipment must be available in the vicinity of the fuel storage facility.	Compliant	Firefighting equipment utilised at the workshop area which is located next to the diesel tank facility are used for any emergency arising from the diesel tank facility.
	Emergency contact numbers must be posted in the same location.	Compliant	Emergency contact numbers are posted at the workshop area in close proximity to the diesel tank facility.
ACCESS ROUTE			
3.3	Access to the fuel storage tanks will be through Mafube site access gate. Service roads from the entrance to the tanks are maintained by the colliery.	Compliant	Access to the fuel storage tanks is through Mafube site access gate. Service roads from the entrance to the tanks are maintained by the Mafube Colliery.
	Outside Mafube entrance gate, Shell will take responsibility for any spillages or accidents occurring during delivery.	Noted	The condition is well understood by Mafube Colliery Management.
	Access routes are adequately maintained to ensure that minimal soil erosion occurs.	Compliant	It was confirmed during the site visit that access routes are adequately maintained to ensure that minimal soil erosion occurs.

COMMITMENT NO.	MITIGATION MEASURES	FINDINGS	OBSERVATION/ AUDIT EVIDENCE
	Sufficient space will be provided to allow the delivery vehicle to turn around, in accordance with the turning scenarios and space requirements which will be specified by Shell.	Compliant	<p>Sufficient space is provided to allow the delivery vehicle to turn around from the above ground tanks area.</p>  <p>Sufficient space for delivery vehicle to turn around from the above ground tanks area</p>
	At no point must the delivery vehicle leave the road or drive across areas of natural vegetation.	Compliant	It was confirmed during the site visit that no delivery vehicles leave the road or drive across areas of natural vegetation. The delivery vehicles travel along designated routes.
TANK MAINTENANCE			
	In addition, the responsible site managers will ensure that the tanks are inspected regularly.	Compliant	The above ground tanks are inspected by Mafube Colliery Environmental Department on weekly basis.
	Any weeps, leaks and drips at seams, joints, pumps, meters, hoses, nozzles or drains will be immediately reported to the Shell Customer Service Centre.	Not Applicable	No weeps, leaks and drips at seams, joints, pumps, meters, hoses, nozzles or drains have occurred during the audit period.
	All structural and electrical maintenance activities will be undertaken by Shell.	Compliant	All structural and electrical maintenance activities are undertaken by Shell.
	Any accident resulting in loss of tank contents (via a leak or tank failure) must be immediately reported to the Shell Customer Service Centre.	Noted	The condition is well understood by Mafube Colliery Management. No accident resulting in loss of tank contents (via a leak or tank failure) have occurred during the audit period. The mine will comply with this condition if and when the need arises.
	Shell will be responsible for the re-filling of the tanks, and liable for any damage caused by spills or other incidents arising from irresponsible behaviour during maintenance and refilling operations.	Compliant	Shell is responsible for the re-filling of the tanks, and liable for any damage caused by spills or other incidents arising from irresponsible behaviour during maintenance and refilling operations.
	SPILL RESPONSE AND REPORTING		

COMMITMENT NO.	MITIGATION MEASURES	FINDINGS	OBSERVATION/ AUDIT EVIDENCE
	In the event of a spill or leak, the initial respondent should attempt to isolate the flow of product (by closing the valve, plugging the hole etc).	Noted	The condition is well understood by Mafube Colliery Management. No spillages were reported during the audit period.
	The initial respondent must then notify the person responsible for the area, who will notify the Environmental Coordinator. An incident report must be filled in as per the EMS 005 - Environmental Incident & Non-conformance Reporting procedure.	Noted	The condition is well understood by Mafube Colliery Management.
	The responsible person for the area will keep people and traffic away from the spill area; and will remove all sources of ignition (cigarettes, idling engines, working equipment that may produce sparks etc) from the area.	Noted	The condition is well understood by Mafube Colliery Management.
	The person responsible for the area will be responsible for the clean up.	Noted	The condition is well understood by Mafube Colliery Management.
	Should a major spill occur into water, the procedure is the same as above, except that in order to contain the spill, booms and other products designed for use in water should be used to contain the material.	Noted	The condition is well understood by Mafube Colliery Management.
	The Environmental Co-ordinator must be informed as soon as possible. The Environmental Co-ordinator will notify the Department of Water Affairs and Forestry including the following details:	Compliant	The Environmental Co-ordinator is informed of the spillages through the Enablon system used for the reporting of any incident. The Environmental Co-ordinator will only inform the Department of Water Affairs and Forestry (now as the Department of Water and Sanitation) if the spillage is reportable as indicated in the Incident Management Procedure developed for Mafube Colliery.
	Exact date and time of spill,		
	Quantity of oil/diesel spilt,		
	Quantity of oil/diesel released downstream (not contained), and		
	Measures taken to clean up spill.		
	Spills where Shell is the responsible party to undertake the clean-up, will additionally be reported to the Shell Customer Service Center by the Environmental Coordinator.	Noted	The condition is well understood by Mafube Colliery Management.
SITE CLEAN-UP AND REMEDIATION			
3.6	Shell is responsible for clean-up of spills occurring during the delivery and re-filling of the fuel tanks. Mafube colliery is responsible for spills arising from usage and management of the facility.	Noted	The condition is well understood by Mafube Colliery Management. Shell is responsible for clean-up of spills occurring during the delivery and re-filling of the fuel tanks and Mafube colliery is responsible for spills arising from usage and management of the facility.
	Should spills occur due to equipment failure, such instances will be investigated and the responsibility for liability will be agreed upon by Shell and Mafube Colliery.	Compliant	No spillages from the above ground tank were noted during the site visit. However, if spillages occur such is cleaned up according to the Chemical Spill Clean-up Procedure developed for Mafube Colliery and as agreed upon by Shell


COMMITMENT NO.	MITIGATION MEASURES	FINDINGS	OBSERVATION/ AUDIT EVIDENCE
			and Mafube Colliery.
	If the spill occurs in a secondarily contained area or within a bund, it can be cleaned up manually using a pump, or absorbent material which must then be disposed of into a hazardous waste bin.	Compliant	No spillages from the above ground tank were noted during the site visit. However, if spillages occur such is cleaned up according to the Chemical Spill Clean-up Procedure developed for Mafube Colliery.
	If a spill occurs on a natural surface it can either be manually cleaned up or larger spills can be effectively treated on site by accelerating the degradation of hydrocarbons using the technique known as bioremediation. This is a method of effectively farming hydrocarbon-contaminated soil by providing a suitable environment for microbial action in soil. By providing nutrients, moisture and oxygen, microbial action is encouraged and the hydrocarbons are used as a source of energy and subsequently degraded into harmless compounds. Bioremediation may be artificially accelerated through the addition of specialised products, which are usually composed of an absorbent material as well as added microbes. Should bioremediation be undertaken, the area will be marked off and surveyed. Samples will be taken prior to initiating the remediation process, and once a month after the initiation of the bioremediation process, until such a time that an acceptable hydrocarbon level is attained.	Compliant	No spillages from the above ground tank were noted during the site visit. However, if spillages occur such is cleaned up according to the Chemical Spill Clean-up Procedure developed for Mafube Colliery.
	For further details regarding management of an emergency spill refer to Mafube's Environmental Emergency Preparedness Response procedure and Appendix 1 below.	Noted	The condition is well understood by Mafube Colliery Management.
SITE DECOMMISSIONING			
3.7	If a tank should no longer be required, this will be reported to the Shell Field Sale Force by the colliery's Materials Controller.	Not Applicable	The above ground tank is still in use. Therefore, this EMPr commitment is not applicable.
	Shell will be responsible for tank construction and deconstruction - under no circumstances will a tank be deconstructed or moved by Mafube without approval from Shell.	Not Applicable	The above ground tank is still in use. Therefore, this EMPr commitment is not applicable.
	A tank registered to Shell will not be used for the storage of product from any supplier except Shell.	Not Applicable	The above ground tank is still in use. Therefore, this EMPr commitment is not applicable.

7.1 ENVIRONMENTAL MANAGEMENT PROGRAM FOR PAN 1 RECONSTRUCTION (REF: 17/2/3N-221)

Condition number	Condition	Finding	Observation/ Audit Evidence
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Condition number	Condition	Finding	Observation/ Audit Evidence
<i>Excavation and recreation of pans</i>			
<i>The following was stated in Section 6.2.8 regarding the mining and reestablishment of the pans (Oryx Environmental, 2003):</i>			
8.2.1	All pans will be profiled to determine their topography and soil characteristics.	Compliant	The profiling of the pans in terms of topography and soil characteristics forms part of the Pan Mining Rehabilitation plan and report, compiled in July 2015. The report (JW133/15/F047 – Rev 0) includes detailed profiles of test pits, summary of physical laboratory testing of soils, summary of chemical and physical dispersive testing, and creep settlement calculations.
8.2.1	The size of each pan's catchment area will be accurately determined.	Compliant	The pan catchment areas were determined and presented as part of the following document: "Preliminary designs report for the Pan-re-establishment project (Jones and Wagener) (Report No JW133/15/F047 – Rev 0)", dated August 2015.
	All thick weathered soils from the catchment areas of the pans will be stockpiled separately specifically for their rehabilitation, during stockpiling the soils will be seeded. The soils to be used will be typically Katspruit or Rensburg soils.	Compliant	Stockpiling of soils was done separately as was removed.
	Depressions will be created within the spoils to the same specifications as determined during the pan profiling with their low point at least three metres above the decant elevation.	Compliant	The pan 1 area has been profiled to be in line with the preliminary designs. The process of profiling and creation of the depression is underway and this was confirmed during the site visit.
	The stockpiled soils will be returned to the shaped depression and levelled to emulate the original pan profile.	Compliant	Only the creation of the depression within the spoils is being undertaken and topsoil replacement has not been undertaken yet.
	The elevation of the pan will be such that, should the researchers indicate that the pan is not functioning as intended, the area can be made free draining.	Not Applicable	The pan reconstruction has not reached the stage where elevation of the recreated pan would be finalised, hence this condition is not applicable yet.
8.2.1	The soils will be re-vegetated with seed collected from surrounding pans. Where necessary, organic material will also be introduced into the base of the pans, the aim is rehabilitate the pans to their pre-mining level of biodiversity.	Not Applicable	The pan reconstruction has not reached the stage where revegetation is conducted, hence this condition is not applicable yet.
	Monitoring will be instituted to quantify the recharge through the pan floor back to the mining operated. This will involve moisture measurement techniques, as well as water balance monitoring, recharge from the pans is estimated to be between 30 and 50 ML/day.	Not Applicable	Recharge values were calculated, and water balances developed as part of the Pan Mining Rehabilitation plan and report that was compiled in July 2015. Delta H (Delta-H Water System Modelling Pty Ltd) was appointed to develop a groundwater and geochemical model for the prediction of post closure mine water discharge volume and chemistry for Mafube Colliery.
	Anglo Coal is determined to make every effort to ensure that pans are successfully rehabilitated, however should recharge from the pans be excessive (more than 10% of total water make of 1.1 ML/day) they will be made free draining.	Not Applicable	However, since the pan reconstruction has not been completed, the commitment is not as yet applicable.
Mining of Pan 1 as part of overall mining operation			

Condition number	Condition	Finding	Observation/ Audit Evidence
<i>Dewatering of pan</i>			
8.3.1	Water from Pan 1 and Pan 2 should be released into the Northern Stream as recommended by Golder Associates (2009) who indicated that pipelines for this purpose are already in place.	Not Applicable	The commitment refers to the dewatering of the pans prior to the commencement of mining. These commitments are no longer applicable as such refers to pre-construction activities with Mafube Colliery currently backfilling and rehabilitating such area.
	Golder Associates (2009) recommended that water from both pans should be combined and pumped directly into the Northern Stream close to the Mafube property on the southern side of the R104 road. This would allow the water to flow along the channel for some distance before it reaches the downstream wetland areas.		
8.3.1	Before any discharge takes place, it must be ensured that suitable water flow reduction measures are in place at the point of discharge.		
	The discharge of water should take place at a low rate resulting in a weaker flow that would not erode the river channel (Golder Associates, 2009).		
	Suitable toxicity monitoring (Golder Associates, 2009) should take place before any discharge of water from the pans. The following sites should be monitored: <ul style="list-style-type: none"> • Pan 1 and Pan 2; o Upstream of proposed water discharge area; o Downstream of proposed discharge area (i.e. North West Dam and A1 (biomonitoring site). 		
	Biomonitoring of site A1 should take place prior to the discharge of water from Pan 1 as well as after the discharge period. This is to monitor the aquatic biota as a result of the release of water into the Northern Stream (Golder Associates, 2009). This water monitoring should take place prior to the discharge of water from Pan 1, during the discharge period as well as after the discharge period so as to monitor and mitigate any impacts to the downstream ecosystems (Golder Associates, 2009).		
	The condition of the riparian vegetation, riverbanks and river channel at the point of discharge as well as downstream of this discharge point must be assessed before discharge of water takes place. The discharge of water could result in the following impacts: Riparian vegetation damage and possible removal, leading to an increase in erosion and runoff; Bank disturbances due to increased flow resulting in increased sediment input from erosion. Erosion of the river channel and possible impact on the wetland.		

Condition number	Condition	Finding	Observation/ Audit Evidence
	<p>The removal of riparian vegetation and bank disturbances could result in potential exotic vegetation encroachment.</p> <p>If the above-mentioned impacts are recorded, then suitable rehabilitation measures (including alien plant eradication) must be implemented as soon as possible.</p>		
<i>Excavation of pan</i>			
8.3.2.2	<p>Proposed excavation sequence:</p> <p>Terrasol Science (2011) indicated that the stripping of pan soils must be aligned with the placement of the clay soils on the pan construction site. It is critical that these soils are placed in the wet state and that the soils are prepared as a lining immediately after placement.</p> <p>The figure (as extracted from the BAR, July 2013) below, provides an indication of the excavation and placement sequence at the pan site as proposed by Terrasol Science (2011). As indicated in the figure below, the clays from Pan 2 (Strip 1) should first be stripped and immediately placed on the northern edge of the intended pan (Place 1). Strip 2 (northern part of Pan 1) would then be excavated and immediately placed at Place 2 followed by Strip 3 (southern part of Pan 1) and the placement thereof at Place 3.</p>  <p>Proposed excavation and placement sequence</p>	Compliant	Stockpiling of soils was done separately as was removed.
8.3.2.3	<p>Strip 1 excavation (Pan 2):</p> <p>Stripping of vegetation and topsoil:</p> <p>The excavation of Strip 1 would predominantly involve the Rensburg soil form which must be placed below the Katspruit material as indicated in the table below.</p> <p><u>Rensburg soil form</u></p> <p>Before any excavation takes place, the Rensburg soil form of Pan 2 must be clearly delineated by the soil specialist. The site operator must then be instructed to strip the Rensburg soil form to a depth of 10cm (including plants and plant roots).</p> <p>The stripped material must be transported to the new pan site and stockpiled in the</p>	Not Applicable	<p>This commitment (although included for the purpose of the overall stripping sequence for both pans), is not applicable to the Pan 1 EA.</p> <p>Refer to Section 7.2 below for the compliance review notes relevant to the stripping of soil from Pan 2.</p>


Condition number	Condition	Finding	Observation/ Audit Evidence																														
	<p>demarcated Stockpile A area (i.e. pan topsoil). The stripped topsoil material should be stockpiled on Stockpile A for a short period and should be used on the new pan surface post construction for the establishment of a rooting environment and seedbed.</p> <p><u>Katspruit soil form</u></p> <p>The vegetation and topsoil of the Katspruit soil form must only be removed once the clay soils of the Rensburg soil form have been stripped from Pan 2 as indicated below. The soil specialist must delineate the Katspruit soil form and instruct the site operator to strip this soil form to a stripping depth of 0-10 cm (including plants and plant roots) as indicated in the table below. This material must also be transported and stockpiled on Stockpile A as indicated above.</p> <table><tr><th colspan="5">STOCKPILE A (PAN TOPSOIL)</th></tr><tr><th>SOIL FORM</th><th>DIAGNOSTIC HORIZONS</th><th>HORIZON THICKNESS (cm)</th><th>STRIPPING DEPTH (cm)</th><th>TEXTURE</th></tr><tr><td>Katspruit (Pan 1 and Pan 2)</td><td>Orthic A</td><td>10</td><td>0-10</td><td>Clay</td></tr><tr><td>Rensburg (Pan 2)</td><td>Vertic A</td><td>10</td><td>0-10</td><td>Clay</td></tr><tr><td colspan="5">USAGE: To be used on the new pan surface post construction for the establishment of a rooting environment and seedbed.</td></tr><tr><td colspan="5">MOTIVATION: Significant root and plant material that will negatively affect compaction efforts.</td></tr></table>	STOCKPILE A (PAN TOPSOIL)					SOIL FORM	DIAGNOSTIC HORIZONS	HORIZON THICKNESS (cm)	STRIPPING DEPTH (cm)	TEXTURE	Katspruit (Pan 1 and Pan 2)	Orthic A	10	0-10	Clay	Rensburg (Pan 2)	Vertic A	10	0-10	Clay	USAGE: To be used on the new pan surface post construction for the establishment of a rooting environment and seedbed.					MOTIVATION: Significant root and plant material that will negatively affect compaction efforts.						
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8.3.2.3	<p>Stripping and placement of clay soils:</p> <p><u>Rensburg soil form</u></p> <p>Once the site operator has removed the 0-10cm layer of the Rensburg soil form, the soil specialist must instruct the site operator to remove the subsoils (10-60cm layer) for direct placement at the new pan site (i.e. Place 1).</p> <p>As indicated in the table below, direct placement of the Rensburg soil must take place while still wet but when the bulk of the free water has been drained.</p> <p>These soils must be placed immediately after stripping and must undergo compaction and ‘smearing’ once placed. This will lead to an impermeable soil layer.</p> <p><u>Katspruit soil form</u></p> <p>The Katspruit soil must be placed on top of the Rensburg soil as indicated in the table below. These soils must be placed directly and treated in the exact same way as the Rensburg soils.</p>	Not Applicable	This commitment (although included for the purpose of the overall stripping sequence for both pans), is not applicable to the Pan 1 EA.																														


Condition number	Condition	Finding	Observation/ Audit Evidence																																																																															
	<table><tr><th colspan="5">DIRECT PLACEMENT (PAN LINING)</th></tr><tr><th>SOIL FORM</th><th>DIAGNOSTIC HORIZONS</th><th>HORIZON THICKNESS (cm)</th><th>STRIPPING DEPTH (cm)</th><th>TEXTURE</th></tr><tr><td>Katspruit (Pan 1 and Pan 2)</td><td>G</td><td>50</td><td>10-60</td><td>Clay</td></tr><tr><td>Rensburg (Pan 2) – PLACEMENT BELOW KATSPRUIT MATERIAL</td><td>Vertic A + G</td><td>50</td><td>10-60</td><td>Clay</td></tr><tr><td>Sterkspruit/ Katspruit (Pan 1) – PLACEMENT WITH KATSPRUIT MATERIAL</td><td>Prismacutanic B/G</td><td>50</td><td>30-80</td><td>Clay</td></tr><tr><td colspan="5">USAGE: Direct placement while still wet BUT when the bulk of the free water has been drained. These soils should be placed immediately after stripping and should undergo compaction and 'smearing' once placed. NO STOCKPILING OF THESE SOILS TO TAKE PLACE.</td></tr></table>	DIRECT PLACEMENT (PAN LINING)					SOIL FORM	DIAGNOSTIC HORIZONS	HORIZON THICKNESS (cm)	STRIPPING DEPTH (cm)	TEXTURE	Katspruit (Pan 1 and Pan 2)	G	50	10-60	Clay	Rensburg (Pan 2) – PLACEMENT BELOW KATSPRUIT MATERIAL	Vertic A + G	50	10-60	Clay	Sterkspruit/ Katspruit (Pan 1) – PLACEMENT WITH KATSPRUIT MATERIAL	Prismacutanic B/G	50	30-80	Clay	USAGE: Direct placement while still wet BUT when the bulk of the free water has been drained. These soils should be placed immediately after stripping and should undergo compaction and 'smearing' once placed. NO STOCKPILING OF THESE SOILS TO TAKE PLACE.																																																							
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8.3.2.4	<p><i>Strip 2 excavation (Pan 1):</i></p> <p>Once Strip 1 Pan 2 has been excavated and the clay soils removed, Strip 2 Pan 1 (northern part of Pan 1) should then be delineated, excavated and immediately placed at Place 2.</p> <p><i>Stripping of vegetation and topsoil</i></p> <p><u>Katspruit soil form</u></p> <p>The soil specialist must delineate the Katspruit soil form and instruct the site operator to strip this soil form to a stripping depth of 0-10 cm (including plants and plant roots). This material must be transported and stockpiled on Stockpile A.</p>	Compliant	The soils in the northern part of Pan 1 were delineated and stripped, after the removal of clay soils at Pan 2.
8.3.2.4	<p><i>Stripping and placement of clay soils</i></p> <p><u>Katspruit soil form</u></p> <p>Once the site operator has removed the 0-10cm layer of the Katspruit soil form, the soil specialist must instruct the site operator to remove the subsoils (10- 60cm layer) for direct placement at the new pan site (i.e. Place 2).</p> <p>Direct placement of the Katspruit soil must take place while still wet BUT when the bulk of the free water has been drained.</p> <p>These soils must be placed immediately after stripping and must undergo compaction and 'smearing' once placed. This will lead to an impermeable soil layer.</p>	Compliant	The soil mapping done by Terrasoil Science was adapted and used to produce a workable stripping model for the operators on the mine, keeping in mind the limitations of both equipment and terrain. Soil types B, D and F (all classified as soil type F) are to be used for the same purpose during pan construction (catchment and slope construction), consequently they were grouped together for a simplified stripping and stockpiling plan. Soil type F (normal topsoil) was stripped according to the regular mine topsoil stripping methodology with roll over and live placement as required.
8.3.2.4	<p>Terrasoil Science (2011) indicated that the technical detail of the abovementioned process must be practically shown to the operators on site.</p>	Compliant	The soil mapping done by Terrasoil Science was adapted and used to produce a workable stripping model for the operators on the mine, keeping in mind the limitations of both equipment and terrain. Soil types B, D and F (all classified as soil type F) are to be used for the same purpose during pan construction (catchment and slope construction), consequently they were grouped together for a simplified stripping and stockpiling plan. Soil type F (normal topsoil) was stripped according to the regular mine topsoil stripping methodology with roll over and live placement as required.
8.3.2.4	<p><i>Stripping of other soils</i></p> <p>Once the pan basin soils have been removed the other soils associated with Strip 2 Pan 1 should systematically be delineated and stripped from the centre of the pan moving outwards.</p>	Compliant	

Condition number	Condition	Finding	Observation/ Audit Evidence
	<p>Stripping of the various soil forms should be in accordance with the information provided in figures and tables above.</p> <p>Stockpiling of the various soil forms should take place in demarcated areas at the new pan site in accordance with the information provided in tables above. The stockpiled material should only be used for the purposes as indicated in the tables above.</p>		
8.3.2.5	<p><i>Strip 3 excavation (Pan 1):</i></p> <p>Once Strip 2 Pan 1 has been excavated and the clay soils removed, Strip 3 Pan 1 (northern part of Pan 1) should then be delineated, excavated and immediately placed at Place 3.</p> <p><i>Stripping of vegetation and topsoil</i></p> <p><u>Katspruit soil form</u></p> <p>The soil specialist must delineate the Katspruit soil form and instruct the site operator to strip this soil form to a stripping depth of 0-10 cm (including plants and plant roots). This material must be transported and stockpiled on Stockpile A.</p> <p><i>Sterkspruit (Ss)/Katspruit (Ka) (and Sepane (Se))</i></p> <p>The Sterkspruit/Katspruit soil form would be present within Strip 3 and should only be removed once the clay soils of the Katspruit soil form have been removed. According to Terrasoil Science (2011), the sandy A horizon (0-30cm) should be stripped separately and stockpiled for later use in Stockpile B (for sandy A horizons). This material can be used for the construction of berms as well as sandy topsoil in the pan to act as a rooting zone, seed source and conduit of subsurface lateral flowing water.</p>	Compliant	<p>The soil mapping done by Terrasoil Science was adapted and used to produce a workable stripping model for the operators on the mine, keeping in mind the limitations of both equipment and terrain. Soils (clay soils, other soils and vegetation) were stripped according to the regular mine stripping methodology with roll over and live placement as required.</p> <p>Stripped soils were stockpiled in demarcated areas at the Pan Rehabilitation topsoil stockpiling site in accordance with the information provided in tables above. The stockpiled material should only be used for the purposes as indicated in the EMP.</p> <p>Through site observation during the site visit, it was confirmed that the topsoil are still intact and no excessive erosions were noted at the stockpiles.</p>
8.3.2.5	<p><i>Stripping and placement of clay soils</i></p> <p><u>Katspruit soil form</u></p> <p>Once the site operator has removed the 0-10cm layer of the Katspruit soil form, the soil specialist must instruct the site operator to remove the subsoils (10- 60cm layer) for direct placement at the new pan site (i.e. Place 2). Direct placement of the Katspruit soil must take place while still wet but when the bulk of the free water has been drained.</p> <p>These soils must be placed immediately after stripping and must undergo compaction and 'smearing' once placed. This will lead to an impermeable soil layer.</p> <p><u>Sterkspruit (Ss)/Katspruit (Ka) (and Sepane (Se))</u></p> <p>The 30-80cm layer would have to be removed and placed directly. These clay soils can be placed with the Katspruit clay soils and must be treated in the same way.</p>	Compliant	
8.3.2.5	<i>Stripping of other soils</i>	Compliant	

Condition number	Condition	Finding	Observation/ Audit Evidence
	<p>Once the pan basin soils have been removed the other soils associated with Strip 3 Pan 1 should systematically be delineated and stripped from the centre of the pan moving outwards.</p> <p>Stripping of the various soil forms should be in accordance with the information provided in the tables above. Stockpiling of the various soil forms should take place in demarcated areas at the new pan site in accordance with the information provided in the tables above.</p>		
<i>Proposed pan site and Pan design</i>			
8.4.1 & 8.4.3	<p>Section 4.10.3 of Appendix 4 (Terrasoil report) provides an overview of pan design criteria and types investigated by Terrasoil Science (2011).</p> <p>The goal will be to create a pan that has a partially freshwater component and a partially brackish water component that will operate at some level of functionality.</p>  <p>Schematic layout of the proposed pan design</p>	Not Applicable	This condition is not applicable, the pan recreation activities (topsoil replacement and revegetation have not yet commenced, but rather only the backfilling of the mined-out areas.
8.4.1 & 8.4.3	Final design of the recreated pan still needs to be finalised in consultation with the soil specialist.	Compliant	The Preliminary designs report for the Pan-re-establishment project (Jones and Wagener) (Report No JW133/15/F047 – Rev 0)", dated August 2015, has reference. This report includes hard copies of design drawings. Mafube Colliery, in consultation with the specialists, is in the process of finalising the designs. Jones and Wagener is in the process of updating the designs report for the pan re-establishment.
<i>Pan overflow area</i>			
8.4.4	Terrasoil Science (2011) indicated that the overflow area of the pan could be situated in one of two positions (as indicated in the figure below). These positions correspond to the upper	Compliant	The Preliminary designs report for the Pan-re-establishment project (Jones and Wagener) (Report No JW133/15/F047 – Rev 0)", dated August 2015,

Condition number	Condition	Finding	Observation/ Audit Evidence
	<p>reaches of a stream that flows towards the west.</p> <p>Option 1 is the preferred option since it appears not to have any associated mining activities.</p>  <p>Position of pan overflow options</p> <p>The lowest point in the post rehabilitation landscape will have to be identified as well as the distance from this point to the nearest watercourse or drainage channel. Once this has been determined, a constructed drainage channel (for continuity (linkage) and decanting purposes) must be designed as part of the overall pan design. In addition, flow reduction and erosion control measures will have to form part of the said design.</p>		<p>has reference. This report included hard copies of the following design drawings.</p> <ul style="list-style-type: none"> • F047-01-001: Test pit positions • F047-01-002: Typical liner cross sections • F047-02-001: General arrangement • F047-02-002: Canal 1 – Plan and Longitudinal Section • F047-02-003: Canal 2 – Plan and Longitudinal Section • F047-02-004: Canal 3 – Plan and Longitudinal Section • F047-02-005: Canal 1, 2 and 3 – Typical Cross Sections • F047-02-006: Wetland C – Berm and Typical Section • F047-02-007: Canal Inlet and Outlet Typical Section • F047-02-008: Canal 3 – Typical Outfall Details • F047-02-009: Canal – Typical Step detail • F047-02-010: Canal 1 – Typical storm water Inlet Details • F047-02-011: Wetland C overflow – Plan and Sections
<i>Placement of soils from Pan 1 and Pan 2</i>			
8.4.5	<p><i>Shaping and profiling of pan basin</i></p> <p>The material that underlies the proposed pan site will most probably consist of spoil and C-material. This material must be compacted to the maximum with equipment on site and current fill techniques (Terrasoil Science, 2011).</p>	Compliant	As described above, backfilling of the mined-out pans area took place with spoils material. The spoils are being allowed to naturally subside and settle to ensure that the correct elevations for the pans will be achieved, prior to being reshaped, topsoiled and revegetated.
8.4.5	<p><i>Placement of clay soils</i></p> <p>The clay layer (forms the pan basin) must be smeared so that cracks, which will lead to piping and leaking, are covered. This must be done in the wet state. Under such conditions, compaction will not be optimal.</p> <p>Terrasoil Science (2011) indicated that owing to the high sodium (Na) concentrations of the clay material, dispersion and clogging of the soil pores will occur with time. As low a saturated hydraulic conductivity that can be achieved through reworking the material must be aimed for. It is imperative that water moves above this layer and minimal infiltration occurs (Terrasoil Science, 2011).</p>	Not Applicable	This commitment is not yet applicable as only backfilling of the mined-out pans areas has yet taken place.

Condition number	Condition	Finding	Observation/ Audit Evidence
8.4.5	<p><i>Placement of sandy soils</i></p> <p>Terrasol Science (2011) indicated that the sand layer is not to be compacted. A saturated hydraulic conductivity of approximately 700 cm/day must be maintained.</p> <p>Terrasol Science (2011) indicated that swales are to be constructed to assist in preventing erosion through surface runoff. If possible, with material with a textural class higher than sand (sandy loam or loamy sand) should be used.</p>	Not Applicable	
<i>General mitigation measures</i>			
8.5	Soil stripping and placement to take place during winter months using appropriate machinery.	Not Applicable	This EMPr commitment is not yet applicable as no topsoiling has yet taken place.
	Soil stripping and placement to be done in accordance with the recommendations of Terrasol Science (2011).	Compliant	Stockpiling of soils was done separately as was removed.
	The various soil forms must be clearly delineated and the removal of the vegetation and soils to only take place within the delineated area. This will assist with reducing the erosion risk.		
	Stockpiling of soil to be done in accordance with the recommendations of Terrasol Science (2011).		
8.5	The various stockpile areas to be clearly demarcated at the new pan site and the soil material to be stockpiled accordingly.	Compliant	Photographic evidence indicates that soil stockpiles were observed to be compliant in terms of this commitment (i.e. slopes not steeper than 16 degrees).
	The various stockpiles to be managed as per the EMPR commitments.		
	Topsoil stockpiles to have slopes of no more than 16 degrees in order to reduce erosion potential.	Compliant	
	The material from the various stockpiles only to be utilized for the identified uses as per the final pan design.	Not Applicable	The EMPr commitment is not yet applicable as no topsoiling has yet taken place.
	In order to reduce the compaction of soils within the Pan 1 and Pan 2 areas, the existing haul road between Pan 1 and Pan 2 should be utilized as far as possible. From this haul road, an access road to Pan 1 and Pan 2 should be demarcated in consultation with the soil specialist. Only this demarcated road should be used to gain access to the said pans. No other roads should be allowed.	Not Applicable	The haul road between the pans is no longer in place due to the mining through of the pans and backfilling activities as already conducted.
	Excavation of Pan 1 and Pan 2: Strip 1, Strip 2 and Strip 3 should be clearly demarcated, and site operators informed where excavation may take place.	Compliant	Stockpiling of soils was done separately as was removed.
	Placement of soils at recreated pan: Place 1, Place 2 and Place 3 must be clearly	Not Applicable	The pans have not yet been re-created. This commitment is thus not yet

Condition number	Condition	Finding	Observation/ Audit Evidence
	demarcated, and site operators informed where soil can be place according to the final pan design.		applicable.
8.5	Mafube Colliery to continue with dust suppression and dust monitoring as part of the overall EMPR commitments.	Compliant	Dust suppression is undertaken on haul roads at Mafube Colliery. This will be continued with until such a time that the haul roads are no longer in use or rehabilitated.
	Mafube Colliery to continue with the water management and water quality monitoring (surface water and groundwater) as per the EMPR commitments.		Dust fallout monitoring is monitored monthly by and external contractor (Aquatico) with reports thereto provided for review. Mafube Colliery has a surface water and groundwater monitoring programme in place as currently managed by Mpumamanzi, with surface water quality being monitored monthly and groundwater quality on a quarterly basis.
	Permission must be obtained from Eskom before relocating the Eskom power line extending through Pan 1.	Not Applicable	According to the mine personnel, the powerline was removed during the mining of pan 1 and permission was granted by Eskom (this communication was conducted between the engineers and Eskom). Therefore no relocation will be necessary for the reconstruction of Pan 1. The environmental team does not have a copy of this communication.
	If any archaeological remains are exposed during the construction phase, the construction must be terminated immediately, and the Provincial Heritage Resources Authority must be notified. In this regard, the applicant must take note of the requirements in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999).	Compliant	Mafube Colliery confirmed that no human remains have yet been identified. In the event that heritage and archaeological artefacts are uncovered, the activity is immediately ceased and the mine's environmental department notified.
	Should any animals (e.g. reptiles or mammals) be found during the construction phase, a specialist should be contacted immediately to ensure the safe removal of the specimen.		Snakes are removed from the mining and related areas when observed. Snake handlers at Mafube Colliery are contacted in such cases.

7.2 ENVIRONMENTAL MANAGEMENT PROGRAM FOR PAN 2 RECONSTRUCTION (REF: 17/2/3 G NK-25)

Condition number	Condition	Finding	Observation/ Audit Evidence
<i>Pan 2 Environmental Management Programme Report (EMPr) Commitments (section of S24G Rectification Application), (dated December 2012)</i>			
<i>Overall mining operation</i>			
6.2.1	Approval was obtained from the Department of Mineral Resources with regards to the overall mining operation. The Environmental Management Programme Report (EMPr) for the Arnot North Strip Mine was approved by the Department on 30 April 2004 (Ref: OT 6/2/2/577). This approval included the mining of the two pans. Mitigation measures with regards to the mining of Pan 1 and Pan 2 were thus discussed in detail in the said EMPr. Mining is currently undertaken in terms of the EMPR commitments. Mining of Pan 2 was said to also be undertaken in terms of the approved EMPr.		
<i>EMPR commitments and Pan 2</i>			

Condition number	Condition	Finding	Observation/ Audit Evidence
The following was stated in Section 6.2.8 regarding the mining and re- establishment of the pans (Oryx Environmental, 2003):			
6.2.2	All pans will be profiled to determine their topography and soil characteristics.	Compliant	The profiling of the pans in terms of topography and soil characteristics forms part of the Pan Mining Rehabilitation plan and report, compiled in July 2015. The report (JW133/15/F047 – Rev 0), attached as Appendix C to the Pan Rehabilitation plan and report, includes detailed profiles of test pits, summary of physical laboratory testing of soils, summary of chemical and physical dispersive testing, and creep settlement calculations.
	The size of each pan's catchment area will be accurately determined.	Compliant	The pan catchment areas were determined and presented as part of the following document Preliminary designs report for the Pan-re-establishment project (Jones and Wagener) (Report No JW133/15/F047 – Rev 0), dated August 2015.
	All thick weathered soils from the catchment areas of the pans will be stockpiled separately specifically for their rehabilitation, during stockpiling the soils will be seeded. The soils to be used will be typically Katspruit or Rensburg soils.	Compliant	Pan 1 and 2 have dedicated, separate stockpile areas in which the different soil types are stockpiled.
	Depressions will be created within the spoils to the same specifications as determined during the pan profiling with their low point at least three metres above the decant elevation.	Not Applicable	The pan system has not yet been recreated.
	The stockpiled soils will be returned to the shaped depression and levelled to emulate the original pan profile.	Not Applicable	The pan system has not yet been recreated.
	The elevation of the pan will be such that, should the researchers indicate that the pan is not functioning as intended, the area can be made free draining.	Not Applicable	The pan system has not yet been recreated.
6.2.2	The soils will be re-vegetated with seed collected from surrounding pans. Where necessary, organic material will also be introduced into the base of the pans, the aim is to rehabilitate the pans to their pre-mining level of biodiversity.	Not Applicable	The pan system has not yet been recreated.
	Monitoring will be instituted to quantify the recharge through the pan floor back to the mining operated. This will involve moisture measurement techniques, as well as water balance monitoring, recharge from the pans is estimated to be between 30 and 50 ML/day.	Compliant	Recharge values were calculated, and water balances developed as part of the Pan Mining Rehabilitation plan and report that was compiled in July 2015. Delta H (Delta-H Water System Modelling Pty Ltd) was appointed to develop a groundwater and geochemical model for the prediction of post closure mine water discharge volume and chemistry for Mafube Colliery. Golder Associates updated the water balance for Mafube Colliery as part of the IWWMP update, dated December 2017.
	Anglo Coal is determined to make every effort to ensure that pans are successfully rehabilitated, however should recharge from the pans be excessive (more than 10% of total water make of 1.1 ML/day) they will be made free draining.	Not Applicable	The pan system has not yet been recreated. This EMPr commitment is not yet applicable.

Condition number	Condition	Finding	Observation/ Audit Evidence
<i>Recreation of pan</i>			
6.2.3	Stripping, stockpiling and placement of soil material for wetland recreation. The recreation of the soils on the site should be conducted in such a manner that the functionality of a wetland system is established in some form.	Compliant	<p>Pan stripping at Pan 2 was completed.</p> <p>As required in the soil stripping sequence provided by Terrasoil Science (2011) (as well as included in the project specific EMP), the clays from Pan 2 (Strip 1) were to be stripped and immediately placed on the northern edge of the intended pan (Place 1). Strip 2 (northern part of Pan 1) was then planned to be excavated and immediately placed at Place 2 followed by Strip 3 (southern part of Pan 1) and the placement thereof at Place 3.</p>
<i>Environmental Awareness Plan</i>			
7.1	<p>It is recommended that the employees receive basic environmental awareness training. The following components would form an essential part of an Environmental Awareness Plan (EAP):</p> <p>Development of an environmental policy;</p> <p>Environmental training, awareness and competence; and</p> <p>Environmental communication and reporting.</p> <p>Personnel performing tasks, which could cause significant environmental impacts, will be competent on the basis of appropriate education, training and/or experience. Job specific training must be conducted for those personnel, as identified in the training needs analysis, and will be appropriate to the activity and the responsibility of the individual employees. Ad-hoc training will be undertaken as required.</p> <p>In general, environmental communication and reporting will aim to:</p> <p>Ensure that employees understand the environmental policy and objectives;</p> <p>Ensure that information is communicated and readily accessible to the relevant parties;</p> <p>Improve feedback of operational and environmental performance to management;</p> <p>Provide forums to discuss environmental issues, allocate resources and ensure that adequate measures are being taken to address the environmental problems;</p> <p>Provide guidelines for communication with outside organisations and interested and affected parties (I&APs);</p> <p>Ensure effective and constructive communication with adjacent landowners;</p>	Compliant	<p>Mafube Colliery is an ISO14001 certified mine, therefore, has the following in place:</p> <ul style="list-style-type: none"> • An Environmental Policy; • Environmental training, awareness and competency programme; and • An Internal and external communication procedure (MFB_MGT_003.2.2.6). • Regular ISO14001 audits are conducted at the mine to verify compliance to the standard as well as environmental procedures. <p>As per the environmental training procedure and the Competence, training and awareness procedure (MFB_MGT_003.2.2.5) the following approach is followed:</p> <ul style="list-style-type: none"> • Monthly Environmental Topics are posted around the mine to assist with general awareness. Environmental awareness is also shared via the weekly Toolbox Talk Guides. • Section heads are required to ensure that the Environmental Policy and relevant standard procedures are briefed to all employees. • Training needs are assessed on a regular basis and is done between the training officer of the area and the section head / foreman. Additional training needs may stem from enquiries held into environmental incidents where training shortcoming may be found to have resulted in the incident. • Employees are required to attend induction every 18 months to

Condition number	Condition	Finding	Observation/ Audit Evidence
	Ensure that records are kept of environmental communication and interaction. Environmental issues and environmental performances will be discussed at monthly meetings. In addition, environmental issues will be highlighted during safety talks.		refresh their knowledge on Standard Procedures as well as to convey any changes to the procedures. <ul style="list-style-type: none">Line supervisors remain responsible for inducting the employee at his / her place of work.Knowledge of procedures is assessed using competency tests specifically developed for each topic.The Environmental Section covers general awareness, as well as operational procedures.
7.1	An Induction Training Program, which includes Environmental Awareness, will be presented to all contractors and newly appointed employees as well as those returning from annual leave.		According to mine personnel, due to an Environmental Control Officer (“ECO”) being appointed for the work and inspections done at the pan areas, the operators on site are continually made aware of the requirements. The ECO monitors the condition of the soil stockpiles and monitoring of the biodiversity in the area. Monthly report findings are communicated to the responsible Foremen and reports are submitted to the department. Furthermore, according to mine personnel, the ECO has monthly meeting to address findings of the report and the Mafube Environmental Department attends the planning meetings to ensure communication of any applicable legal requirements.
	<p>Various posters (including the Environmental Policy) will be displayed on site (e.g. at the entrance to the site, workshop area, plant area, etc.) to remind employees/contractors/visitors to site on a daily basis of the basic rules of the operation and inform them of the 'DO'S' and 'DON'TS'.</p> <p>The notice boards will display information pertaining to safety and security issues, waste management, environmental policy, etc.</p> <p>Mafube Coal Mining (Pty) Ltd. will also conduct regular inspections to check on conditions at the site. It is during these times that training will also be given to ensure that the mitigation measures are being implemented and that the environment is carefully looked after.</p>		<p>The contractor was also briefed and trained on the correct methods for pan stripping and placement of stripped soils. This training comprises of stripping methods, stockpiling and legislation compiled in the Pan Pack and Guidelines and Pan Stripping Induction.</p> <p>The guidelines have been distributed to the relevant supervisors, section heads and training is conducted with all persons involved in the pan area.</p>
Site documentation and record keeping			
7.2	<p>The following documentation must be available at all times on site:</p> <ul style="list-style-type: none">A copy of the Section 24 G application;A copy of the correspondence from the Department of Economic Development, Environment and Tourism;A copy of the Environmental Management Plan;A copy of the Environmental Policy;A copy of any other permits/approvals and/or service agreements from other authorities.	Compliant	Copies of all relevant documentation are kept at the Mafube Colliery environmental offices.

Condition number	Condition	Finding	Observation/ Audit Evidence
	<ul style="list-style-type: none"> The documents should be kept as hard copies as well as in electronic format. 		
	<p>A complaints register must be kept on site. Any complaints received with regards to the trenching and mining of the pan must be recorded in the complaints register. The following information must be recorded:</p> <ul style="list-style-type: none"> Date complaint recorded; Nature of complaint; Details of complainant (name, address, telephone number, etc.); Manner in which complaint was dealt with; Date when complaint was reported to the Department of Economic Development, Environment and Tourism. 	Compliant	Any complaint received is logged on the Enablon system where after it is assigned to the responsible person for actioning and lose-out. All information (including: the date, nature, complainant, actions taken and close out) are recorded.
	Emergency numbers (e.g. applicant, police, fire department, ambulance, etc.) must be prominently displayed on site. Contact details of adjacent landowners / users must also be kept on file.	Compliant	Emergency numbers are displayed throughout the mine. Mafube Colliery also has an I&AP register with contact details of adjacent landowners and other affected parties / stakeholders.
7.2	<p>The following should also be displayed / kept at the offices:</p> <p>Occupational Health and Safety Act, 1993 (Act 85 of 1993) as amended;</p> <p>Basic Conditions of Employment Act, 1997;</p> <p>Summary of the Employment Equity Act.</p> <p>Site instructions;</p> <p>Emergency preparedness and response procedures;</p> <p>Incident reports;</p> <p>Training records;</p> <p>Site inspection, monitoring and auditing reports.</p>	Compliant	<p>Health and Safety Legal compliance audits are conducted at Mafube Colliery. Since the mining activity at the pans is a continuation of the overall mining activities of Mafube Colliery, the verification of the health and safety compliance at the pans forms part of health and safety legal and OHSAS 18001 audits. Such audits verify the availability of the relevant legislation as well as compliance thereto.</p> <p>Mafube Colliery's Human Resources Department is responsible for copies of the employment related legislation to be kept on site.</p> <p>Enablon is used for the capturing and management of incidents occurring on the site.</p>
<i>Auditing and corrective action</i>			
7.3	<p>Environmental audits identify existing and potential environmental problems and determine what action is needed to comply with legal requirements and the Environmental Management Plan (EMP). Subsequent audits then confirm that corrective actions have been taken and assess the effectiveness of such actions.</p> <p>In order to ensure compliance with the EMP and to assess the continued appropriateness and adequacy thereof, the EMP should be monitored on an ongoing basis in order to determine whether it is being implemented and whether the measures proposed are</p>	Compliant	<p>It is the purpose of this audit report to provide information with regards to Mafube Colliery's compliance with the commitments made in the EMPr relevant to the Pan 2 EA.</p> <p>Refer to compliance status notes above for specific commitments made within the project specific EMPr.</p>

Condition number	Condition	Finding	Observation/ Audit Evidence
	adequate		

8. DELIBERATIONS

8.1 ADEQUACY AND COMPLIANCE WITH THE MAFUBE COLLIERY'S ALIGNED EMPR

8.1.1 Adequacy of the Mafube Colliery's Aligned EMPR

The Aligned EMPR for the Mafube Colliery was assessed not only for the compliance towards the commitments of the EMPR, but also assessed for the ability of the measures contained in the EMPR to sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the undertaking of the treatment or reclamation of mine water. From the auditor's review of the EMPR, a shortcoming was noted in the Mafube Colliery's Aligned EMPR. Shortcomings noted in the Mafube Colliery's Aligned EMPR, relate to:

- Environmental risks and associated mitigation measures as applicable to the operational phase of the Rail Loop, Conveyor 1 and Conveyor 2, especially with regard to assessment of environmental pollution and management thereof.
- Contradiction of statements and commitments in the EMPR with regard to the siting of infrastructure in relation to the 1:50 and 1:100 year flood lines and the identified wetlands.

It is recommended that the EMPR be amended to ensure that the above inadequacies, which some have led to non-compliant findings, are addressed.

8.1.2 Compliance with the Mafube Colliery's Aligned EMPR

The following non-compliant was identified during the audit period:

- According to the mine's IWWMP PCD1 and the discard facility are within the 1:50 and 1:100 year flood lines. The mine is hence not complying with the commitment that requires the infrastructure to be sited outside the 1:50 and 1:100 year flood lines.
- Storm water management at the discard facility is undertaken via a clean and dirty water trench. The dirty water trench collect dirty water from the facility into PD 1 and the clean water trench/berms are used to divert water away from the discard dump and PD1 to the clean water environment. It was however noted during the site visit that PD1 is not lined. PD1 does not have enough capacity to handle water from the facilities especially during high storm events. It was however noted that the mine has applied for an authorisation to correct the above situation i.e. new pollution control dam with associated diversion trenches are proposed for the discard facility. The existing Plant PC Dam will be cleaned and rehabilitated to a clean water attenuation dam.
- According to the wetland study conducted by Geovicon in 2019, it was indicated that the discard facility and portions of the coal washing facility is currently situated less than 100 meters from the edge of the closest wetland system. Further to the above, no fencing of the wetlands within the 100-meter zone were noted during the site visit conducted during the audit. The above is not

complying with the approved EMPr, that the discard facility not be constructed within 100 m of the wetlands identified at the site.

8.2 ADEQUACY AND COMPLIANCE WITH THE ENVIRONMENTAL MANAGEMENT PLAN FOR THE OPERATION OF A BRIQUETTING PLANT EMPr

8.2.1 Adequacy of the Mafube Colliery's Briquetting Plant EMPr

The EMPr for the Mafube Colliery's Briquetting Plant was assessed not only for the compliance towards the commitments of the EMPr, but also assessed for the ability of the measures contained in the EMPr to sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the undertaking of the treatment or reclamation of mine water. From a review of the EMPr, the auditor is of the opinion that it sufficiently provides for the avoidance, management and mitigation of environmental impacts associated with the undertaking of Mafube Colliery's Briquetting Plant.

8.2.2 Compliance with the Mafube Colliery's Briquetting Plant EMPr

No non-compliances were identified during the audit period.

8.3 ADEQUACY AND COMPLIANCE WITH THE ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT FOR THE AMENDED ABOVE GROUND STORAGE TANKS EMPr

8.3.1 Adequacy of the Mafube Colliery's Above Ground Storage Tanks EMPr

The EMPr for the Above Ground Storage Tanks was assessed not only for the compliance towards the commitments of the EMPr, but also assessed for the ability of the measures contained in the EMPr to sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the undertaking of the treatment or reclamation of mine water. From a review of the EMPr, the auditor is of the opinion that it sufficiently provides for the avoidance, management and mitigation of environmental impacts associated with the undertaking of Above Ground Storage Tanks.

8.3.2 Compliance with the Mafube Colliery's Above Ground Storage Tanks EMPr

No non-compliances were identified during the audit period.

8.4 ADEQUACY AND COMPLIANCE WITH THE ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT FOR PAN 1 EMPr

8.4.1 Adequacy of Mafube Colliery's PAN 1 EMPr

The EMPr for PAN 1 was assessed not only for the compliance towards the commitments of the EMPr, but also assessed for the ability of the measures contained in the EMPr to sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the undertaking of the treatment or reclamation of mine water. From a review of the EMPr, the auditor is of the opinion that it sufficiently provides for the avoidance, management and mitigation of environmental impacts associated with the undertaking of PAN 1.

8.4.2 Compliance with the Mafube Colliery's PAN 1 EMPr

No non-compliances were identified during the audit period.

8.5 ADEQUACY AND COMPLIANCE WITH THE ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT FOR PAN 2 EMPr

8.5.1 Adequacy of the Mafube Colliery's PAN 2 EMPr

The EMPr for PAN 2 was assessed not only for the compliance towards the commitments of the EMPr, but also assessed for the ability of the measures contained in the EMPr to sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the undertaking of the treatment or reclamation of mine water. From a review of the EMPr, the auditor is of the opinion that it sufficiently provides for the avoidance, management and mitigation of environmental impacts associated with the undertaking of the PAN 2.

8.5.2 Compliance with the Mafube Colliery's PAN 2 EMPr

No non-compliances were identified during the audit period.

8.6 COMPLIANCE WITH THE ENVIRONMENTAL AUTHORIZATIONS

8.6.1 Environmental Authorisation for Pan 1, ref: 17/2/3N-221, dated 18 September 2013

The following non-compliance finding was identified during the audit period.

- Mafube Coal Mining (Pty) Limited did not identify and adopt a Pan as a biodiversity offset measure for the mining of Pan 1 and Pan 2. Instead the mine opted to reconstruct the pans as a measure to address the impact caused by the mining of the pans. The pans are in the process of being rehabilitated to recreate a pan system in the same area as the original location of Pan 1 and Pan 2, which forms part of the rehabilitation plan approved.

8.6.2 Environmental Authorisation for Pan 2, ref: 17/2/3G-NK-25, dated 29 April 2013

No non-compliances were identified during the audit.

8.6.3 Environmental Authorisation for Conveyor, Rail Loop, Road Diversion, Pipelines and Sub-station, ref: 17/2/5-NK-53, dated 24 June 2006

The following non-compliant was identified during the audit period:

- Dirty storm water collected from the rail loop area is allowed to report to the nearby clean water environment placing an environmental risk on the clean water environment. Based on the mine's storm water management plan, dirty water from rail loop must report to Overland Dam 2. This risk has been identified and included in the mine's latest IWWMP and Storm Water Management Plan and as a management measure, Mafube is investigating the adequacy of the capacity and the functionality of Overland Dam 1 and 2 and their silt traps that were designed and constructed to collect dirty water from the rail loop area. The corrective measures have been identified in the storm water management plan and will be implemented in phases. Progress with regard to the implementation of the plan will be reported in the next audit.

8.6.4 Environmental Authorisation for the amended Briquetting Plant, ref: 17/2/3 G NK21, dated 05 December 2012

No non-compliances were identified during the audit period.

8.6.5 Environmental Authorisation for the Above Ground Storage Tanks, ref: 17/2/2/3 MP-30, dated 20 March 2009

No non-compliances were identified during the audit period.

8.6.6 Environmental Authorisation for the amended Above Ground Storage Tanks, ref: 17/2/1/7 NK-11, dated 15 May 2012

No non-compliances were identified during the audit.

8.6.7 Environmental Authorisation for the amended Above Ground Storage Tanks, ref: 17/2/1/7 MP-12, dated 15 May 2012

No non-compliances were identified during the audit period.

9. CONCLUSION

This environmental audit report was compiled to comply with the relevant legislative requirements specifically the NEMA, with the main objectives to report on the compliance status of the commitments and conditions, as well as the appropriateness and adequacy of the various approved EAs and EMPs. This audit report will be submitted to the competent authority. Within 7 days of submission of this Audit Report to the competent authority (DMRE), the Mafube Colliery, must notify all potential and registered

I&APs of the submission, and make this report immediately available to anyone on request and on a publicly accessible website.

10. DISCLAIMER

This report has been produced by Geovicon Environmental (Pty) Limited, with the skill and care normally exercised by a reasonable Environmental Consultant during the rendering of the service. The service provided by Geovicon Environmental (Pty) Limited should not be considered as legal opinion of any kind but shall be a representation of the findings. The work performed was based on the Client's scope of work, time and resources allocations as well as information provided by the Client. Any reference to legislation in this report should not be considered as a substitute for the provisions of such legislation.

Geovicon Environmental (Pty) Limited ensured by all means that information provided by management and/or representative is correct and relevant thus this report is based on information that could have reasonably been sourced within the time period allocated to the audit performed. It should not be assumed that all possible and applicable findings are included in this report as this report represents a sample of the audit. Therefore, should additional information become available, Geovicon Environmental (Pty) Limited reserves the right to amend its findings accordingly.



Signed:

Date: 01 December 2021

O.T. Shakwane

Managing Director

Geovicon Environmental (Pty) Limited

tshepo@geovicon.co.za

www.geovicon.co.za