



Goedehoop Colliery South Section Van Dryksdrift Extension Final Environmental Audit Report

Submitted as contemplated in section 24N(7)(d) of the Regulation 34 under 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.:
MP30/5/1/2/3/2/1(38) EM

December 2022

Report No.: 4141/2022
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As of 7 June 2021, following the completion of the demerger of high-quality export thermal coal operations from Anglo American, Thungela has successfully listed on the Johannesburg and London stock exchanges. As such, we will now legally change our name from Anglo Operations Proprietary Limited ("AOPL") to Thungela Operations Proprietary Limited ("TOPL")
Thungela offers investors access to a high-quality thermal coal business with low cash cost and high-margin assets, as well as a strong balance sheet, underpinned by a robust environmental, social and governance ("ESG") framework
Thungela owns interests in and produces thermal coal predominantly from six collieries located in Mpumalanga, South Africa. The business address has changed to **25 Bath Avenue; Rosebank; 2196; South Africa** however, the specific mines addresses remain unchanged. It is important to note that the legal name change from Anglo Operations (Pty) Ltd to Thungela Resources (Pty) Limited will officially be effective early 2022.

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1. INTRODUCTION

Goedehoop Colliery is a division of Thungela Resources previously known as Anglo American Coal South Africa (“AACSA”), situated approximately 15 - 25 km south-east of eMalahleni in the Mpumalanga Province, and is one of the largest mining complexes in Mpumalanga. It falls within the Steve Tshwete Local Municipality of the Nkangala District. The site covers an area of over 20 000 ha and is located in the Olifants river catchment within the Upper Olifants river management area (WMA 4) which forms part of the Witbank Dam catchment area.

Goedehoop Colliery comprises of two (2) sections namely North Section (previously known as Bank Colliery) and South Section (previously known as Goedehoop Colliery), operated under mining rights with Department of Mineral Resources and Energy (“DMRE”) reference numbers MP 30/5/1/2/2/ 143) MR and MP 30/5/1/2/2/1 (122) MR ,respectively Although Van Dryksdrift is located near the South Section it operates under its own mining right with the Department of Mineral Resources and Energy (“DMRE”) reference number MP30/5/1/2/3/2/1(38)MR. All these mining right have an approved Environmental Management Programmes (“EMPr”) in terms of the largely repealed Section 39 (6) of the Mineral and Petroleum Resources Development Act, 2002 (“MPRDA”).

The Van Dyksdrift EMPr is an addendum to the approved Goedehoop Colliery EMPr and only concerns the extension of the underground mining operations on the Van Dyksdrift.

In terms of the National Environmental Management Act, 1998 (“NEMA”), the amended NEMA Environmental Impact Assessment Regulations, 2014 and the EMPr approval letter, the holder of the EMPr, Thungela Operations (Pty) Limited, must assess its compliance with the conditions of the approved EMPr for its activities at Goedehoop Colliery South Section (Van Dyksdrift).

Thungela Operations (Pty) Limited appointed Geovicon Environmental (Pty) Limited to assess the compliance of Goedehoop Colliery’s operation against conditions/commitments of the environmental authorisations and the EMPr issued and approved in terms of the NEMA and the MPRDA (for further details on the scope, please see Item 3 further below). This report was compiled after completion of the above-mentioned virtual environmental audit and a site visit (is hereby submitted to the competent authority in line with regulation 34(1)(b)).

2. LEGAL FRAMEWORK

2.1. NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT 107 OF 1998), AS AMENDED (“NEMA”)

Section 24N(7)(d) of NEMA requires that the holder and any person issued with an Environmental Authorisation must monitor and audit compliance with the requirements of the EMPr. Regulation 34 of the EIA Regulations, 2014 states that the holder of an environmental authorisation must, for the period during which the environmental authorisation and EMPr remain valid, ensure that compliance with the conditions of the environmental authorisation and the approved 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 Goedehoop Colliery is the Department of Mineral Resources, Mpumalanga Regional Office. The above-mentioned environmental audit report must determine the ability of the approved 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 approved 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 recently amended¹, 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 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 Plan, an audit report 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”. In view of the above and in complying with the above approval conditions of the EMPr and relevant regulations of the NEMA EIA Regulations, a compliance assessment for Goedehoop Colliery’s approved EMPrs are undertaken.

3. SCOPE AND PURPOSE OF THE ENVIRONMENTAL AUDIT

The purpose of this assessment is to undertake an audit in terms of section 24N(7)(d) of NEMA read with regulation 34 of the NEMA EIA Regulations in order to verify the Mine’s compliance with and adequacy of the following EMPr –

Environmental Management Programme:

- Goedehoop Colliery Addendum for Van Dyksdrift Extension (DMR Reference number. MP 30/5/1/2/3/2/1 (38MR).

A copy of this EMPr is available on request.

The environmental audit was conducted to determine the level of performance against and compliance of the mining operation with the provisions of the approved EMPr. The audit was conducted to further determine the ability of the measures contained in the EMPr to sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with Goedehoop Colliery’s operation 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 EMPr and the extent to which the avoidance, management and mitigation measures provided for in the EMPr, achieve the objectives and outcomes of the EMPr;
- To identify and assess any new impacts and risks arising from the Goedehoop Colliery mining activities;

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

- To evaluate the effectiveness of the EMPr;
- To identify any inadequacies in the EMPr's, and
- To identify the need for any changes to the avoidance, management and mitigation measures provided for in the EMPr.

4. METHODOLOGY ADOPTED IN PREPARING THE ENVIRONMENTAL AUDIT REPORT

4.1. AUDIT TEAM AND STATEMENT OF INDEPENDENCE

Auditor 1: Mr. Ornassis Tshepo Shakwane (Pr.Sci.Nat. & Registered EAP)

Professional Registration Numbers:

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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 with a number of tertiary institutions. He has worked within the three state departments tasked with mining and environmental management i.e. Department of Water and Sanitation (Gauteng and Mpumalanga Region), 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 Goedehoop Colliery. Mr. Shakwane is one of the auditors that audited Goedehoop Colliery's compliance with their EMPr. 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.

Mr. Ornassis Tshepo Shakwane of Geovicon Environmental (Pty) Limited, hereby declares that he is an independent auditor and that Geovicon Environmental (Pty) Limited and himself have no business, financial, personal or other interest in this project in respect of which Geovicon Environmental (Pty) Limited is appointed. Furthermore, no circumstances exists that may compromise the objectivity of Geovicon Environmental (Pty) Limited, excluding fair remuneration for work performed in connection with this environmental audit.

Auditor 2: Ms Reinnie Ntokozo Maseko

Company: Geovicon Environmental (Pty) Limited

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Experience of the auditor:

Ms Maseko obtained her BSc Degree in Geological Sciences (2018) as well as a BSc honours in Geological sciences (2019) from the University of KwaZulu-Natal. Ms Maseko has since joined Geovicon Environmental (Pty) Ltd in 2020. Her responsibilities include but not limited to ensuring compliance with the legislation i.e., National Water Act, (No: 36 of 1998), National Environmental Management Act, (No: 107 of 1998), National Environmental Management: Waste Act (Act: 59 of 2008), National Environmental Management: Air Quality Act (Act: 39 of 2004) and other Legislative Developments. He is also involved in Application of Integrated Water Use Licenses, conducting of internal and external Water Use Licenses audits as well as Environmental Management Programmes (EMPr), Compiling and updating of Integrated Water and Wastewater Management Plans (IWWMP). She also conducts monthly environmental inspections at several mining companies. Ms Maseko is one of the auditors that audited Goedehoop Colliery (South) compliance with their EAs and EMPrs.

4.2. FREQUENCY OF REPORTING

Since Goedehoop Colliery did not provide an approval letter for the EMPr, which would determine the auditing frequency for the approved EMPr, it was assumed that the required frequency for the approved EMPr would be annually.

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*”. In the NEMA environmental authorisations, exemption and the approved EMPrs, no auditing frequency was indicated. In view of the above and in the absence the frequency of auditing specified in the environmental authorisation and compliance with the approved EMPr, the maximum auditing interval allowed is five years

4.3. PERIOD THAT APPLIES TO THIS COMPLIANCE ASSESSMENT

. The audit review period for this environmental audit report is April 2021 to March 2022.

4.4. PROCEDURE USED DURING THE COMPLIANCE ASSESSMENT

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

- Desktop assessment of the approved Goedehoop Colliery EMPs and NEMA EAs. The desktop assessment was used to list all commitments and conditions indicated in the EMPs, and NEMA 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 EMPs and conditions from the approved EAs in cases where the commitments had not yet been fulfilled, either because the applicable phase is not reached or some other reason, such as has been indicated in this report. As described further below, we also had extensive electronic interviews with the relevant Goedehoop Colliery personnel. These interviews were held over a period of two (2) days, a day comprising at least six hours.
- To assess the compliance with the conditions and commitments of the 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.
- Additional to the audit interview, a site visit was undertaken to confirm the state of compliance at the mine site. The above-mentioned site visit was however, used to finalise the audit findings from the virtual audit and no inconsistencies were identified between comprehensive virtual and site visits.
- 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 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 NEMA Environmental Authorisations in place?
- Are the measures adequate and structures maintained, and at what frequency?
- Has the monitoring as indicated in the environmental management programme and NEMA Environmental Authorisations been conducted? (Data, reports).
- Is the reported frequency of the monitoring in accordance with the environmental management programme and NEMA Environmental Authorisations? (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 environmental management programme and NEMA Environmental Authorisations included the following:

- Compliance with relevant laws pertaining to the environment.
- Compliance of mining and associated activities with the EMPr and NEMA Environmental Authorisations. (Is the mine conducting activities that are not indicated in the EMPr and the Environmental Authorisations?)

4.6. RATING OF FINDINGS

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

Compliance category	Findings
Condition/mitigation measure/commitment has been achieved with evidence provided in the form of a document.	Compliant
The failure to comply with, or satisfy the requirements of an applicable condition, commitment and/or mitigation measure. When site visits are finally conducted, non-compliances will 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 amendment of the EMPr.	Non-compliant
The condition, commitment and/or mitigation measure is Not Applicable. A “Not Applicable” finding is also noted in events where such condition, commitment and/or mitigation measure is either obsolete, alternative effective measure is utilised or 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 relevant Goedehoop Colliery personnel as well as the review of documentation, 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 NEMA 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 and where applicable the closure plan;

The holder of the must when submitting the environmental audit report to the competent authority in terms of sub regulation (1), submit recommendations to amend the EMPr 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.

7. RESULTS OF THE ENVIRONMENTAL AUDIT

The results of the Environmental Audit are given in the Tables below. The table below outlines the EMPr for each of the authorised activities at Goedehoop Colliery.

7.1. GOEDEHOOP COLLIERY ADDENDUM FOR VAN DYKSDRIFT EXTENSION (DMR REFERENCE NUMBER. MP 30/5/1/2/3/2/1 (38MR)).

Goedehoop Colliery Addendum for Van Dyksdrift Extension (DMR Reference number. MP 30/5/1/2/3/2/1 (38MR)).			
ENVIRONMENTAL COMPONENT	MITIGATION PRINCIPLE	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
CONSTRUCTION PHASE			
Note that Goedehoop Colliery is an operational mine, with existing underground workings. access shafts and infrastructure. No environmental management for the construction phase is therefore necessary.		Noted	The mine is aware and take cognizance of this. No actions required from the mine.
OPERATIONAL PHASE			
Geology	No measures can be implemented to manage the impact associated with the removal of the coal seams.	Noted	The mine is aware and take cognizance of this. No actions required from the mine.
Topography	No impacts on topography are predicted. No mitigation measures will be undertaken during the operational phase	Noted	The mine is aware and take cognizance of this. No actions required from the mine.
Soil	No impacts on soil are predicted. No mitigation measures will be undertaken during the operational phase.	Noted	The mine is aware and take cognizance of this. No actions required from the mine.
Land Capability	No impacts on land use are predicted. No mitigation measures will be undertaken during the operational phase.	Noted	The mine is aware and take cognizance of this. No actions required from the mine.
Land Use	No impacts on land use are predicted. No mitigation measures will be undertaken during the operational phase.	Noted	The mine is aware and take cognizance of this. No actions required from the mine.
Animal Life	No impacts on animal life are predicted. No mitigation measures will be undertaken during the operational phase.	Noted	The mine is aware and take cognizance of this. No actions required from the mine.
Natural vegetation	No impacts on Natural vegetation are predicted. No mitigation measures will be undertaken during the operational phase.	Noted	The mine is aware and take cognizance of this. No actions required from the mine.
Surface Water	The levels of water in the pan will be monitored on a monthly basis Continuous monitoring of possible surface lowering by the use of extensometers will be done on a monthly basis. In the event of unacceptable decrease in the levels of water in the pan an investigation will be undertaken Within a week after the notification of the lowering of water levels. Recommendations from the investigation will be undertaken Within two weeks after the completion of the investigation Dewatering and Discharge The seepage water accumulating in the underground workings will be pumped to the Goedehoop Colliery's dirty water system. Actions to manage impacts from these activities will be addressed under the groundwater section, below.	Compliant	Surface water monitoring is being conducted for the whole mine, there are no concerns regarding seepage in the Van Dyksdrift area. The Van Dyksdrift area was rehabilitated and decommissioned.
Groundwater	The static groundwater levels in all boreholes within a distance of less than 2 kilometres must be measured regularly on a quarterly basis. Continuous monitoring of possible major structures of preferred groundwater flow during mining Throughout the operational phase of mining Any major structures of preferred groundwater flow such as dykes and fault zones should be grouted if excessive groundwater inflow is encountered as soon as the structures are identified. In the event of unacceptable decrease in the yield of any affected boreholes. alternative water supply will be supplied to the affected parties, one week after notice of decrease of yield of borehole	Compliant	Groundwater monitoring is being undertaken for the whole GHS Colliery mine. The Van Dyksdrift area was rehabilitated and decommissioned.
Air Quality	All machinery employed on site will be in good order. well maintained throughout operational phase and life mine. All machinery will be fitted with the correct exhaust systems, which will be maintained and in good order throughout operational phase life of mine. All mining vehicles will be required to obey set maximum speed limit. This will reduce the generation of dust throughout operational phase life of mine. Employees in the vicinity of the underground machinery will be issued with dust masks once every two weeks throughout life of mine if necessary, frequency will increase or decreased.	Not applicable	The Van Dyksdrift area was long rehabilitated and decommissioned.

	Shift bosses Will ensure that masks are used by employees, as frequent as possible during working hours of the shifts. Dust suppression will be conducted in the underground working, Daily.																											
Sensitive landscapes	No impacts on sensitive landscapes are predicted. No mitigation measures will be undertaken during the operational phase.	Noted	The mine is aware and take cognizance of this. No actions required from the mine.																									
Noise and Vibration	No impacts on noise and vibration are predicted. No mitigation measures will be undertaken during the operational phase.	Noted	The mine is aware and take cognizance of this. No actions required from the mine.																									
Visual Aspects	No impacts on visual aspects are predicted. No mitigation measures will be undertaken during the operational phase.	Noted	The mine is aware and take cognizance of this. No actions required from the mine.																									
Socio-Economic Impacts	As far as practically possible, all supplies are obtained from the Greater Middelburg/Witbank area as outlined in the Social and Labour Plan for Goedehoop Colliery. As far as practically possible, mine employees are recruited from the greater Middelburg/Witbank area as outlined in the Social and Labour Plan for Goedehoop Colliery.	Not applicable	No operational activities undertaken at the Van Dyksdrift, this condition is no longer applicable for this audit period.																									
Interested and Affected Parties	Adjacent landowners within a 2km radius, which show decreased borehole yields resulting from this mining venture, are compensated for by the drilling of new/additional boreholes to replace/supplement existing boreholes.	Not applicable	No operational activities undertaken at the Van Dyksdrift, this condition is no longer applicable for this audit period.																									
	Reports generated during the course of all monitoring programs will be made available, on request, to all interested and affected parties. This includes any water quality monitoring reports; dust fallout reports or results from noise studies. No squatters are allowed on the property. Mine management is maintaining an open- door policy with all Interested and Affected Parties. Minutes of all meetings are kept and made available on request. All complaints received, are kept in complaints register. An Interested and Affected Parties Forum has been established. Minutes of all meetings are taken. These Minutes include a record of all parties in attendance.	Not applicable	No requests for reports have been received by the mine. No squatters are allowed on Goedehoop Colliery property. No concerns were identified during the site audit. Communication between the mine and interested and affected parties is encouraged. Goedehoop Colliery implements a grievance procedure. A community liaison officer is also appointed at the mine. In addition to the measures listed above, Goedehoop Colliery also participates in an annual Farmers Day, where adjacent farmers are provided the opportunity to raise issues or concerns (refer also to the previous discussions in this regard).																									
Historical and Cultural Aspects	No impacts on historical and cultural aspects are predicted. No mitigation measures will be undertaken during the operational phase	Noted	The mine is aware and take cognizance of this. No actions required from the mine.																									
Subsidence management	<table border="1"> <thead> <tr> <th>Action</th> <th>Time schedule</th> </tr> </thead> <tbody> <tr> <td colspan="2">Ensure that pillar failure does not re-occur</td> </tr> <tr> <td>Remaining underground pillars will be monitored regularly, for signs of failure and for compliance with required safety factor</td> <td>Once every month</td> </tr> <tr> <td>Any pillar failure will be reported to Mine manager/representative immediately</td> <td>On occurrence of pillar failure occur</td> </tr> <tr> <td>Recommendation from Rock Engineering Services on required safety factor to avoid re-occurrence of pillar failure requested</td> <td>Subsequently after reporting of pillar failure</td> </tr> <tr> <td>Safety factor for the remaining portion of the mining area increased as recommended by Rock Engineering Services</td> <td>Throughout remaining life of mine</td> </tr> <tr> <td colspan="2">Ensure that the surfaces with subsidence, if any, caused by pillar failure are rehabilitated accordingly</td> </tr> <tr> <td>The Mine Surveyor will survey the surface that is undermined.</td> <td>Monthly for the entire operational phase</td> </tr> <tr> <td>Monitoring of the undermined surfaces will be undertaken</td> <td>Monthly for the entire operational phase</td> </tr> <tr> <td>In the case of subsidence, topsoil on affected area will be stripped to a minimum depth of 300 mm over the affected area.</td> <td>One week after noticing of subsidence</td> </tr> <tr> <td>The affected area will be shaped to be free draining</td> <td>Two weeks after noticing of subsidence</td> </tr> <tr> <td>The removed topsoil will be replaced over the area (minimum thickness = 300 mm).</td> <td>Two weeks after noticing of subsidence</td> </tr> </tbody> </table>		Action	Time schedule	Ensure that pillar failure does not re-occur		Remaining underground pillars will be monitored regularly, for signs of failure and for compliance with required safety factor	Once every month	Any pillar failure will be reported to Mine manager/representative immediately	On occurrence of pillar failure occur	Recommendation from Rock Engineering Services on required safety factor to avoid re-occurrence of pillar failure requested	Subsequently after reporting of pillar failure	Safety factor for the remaining portion of the mining area increased as recommended by Rock Engineering Services	Throughout remaining life of mine	Ensure that the surfaces with subsidence, if any, caused by pillar failure are rehabilitated accordingly		The Mine Surveyor will survey the surface that is undermined.	Monthly for the entire operational phase	Monitoring of the undermined surfaces will be undertaken	Monthly for the entire operational phase	In the case of subsidence, topsoil on affected area will be stripped to a minimum depth of 300 mm over the affected area.	One week after noticing of subsidence	The affected area will be shaped to be free draining	Two weeks after noticing of subsidence	The removed topsoil will be replaced over the area (minimum thickness = 300 mm).	Two weeks after noticing of subsidence	Not applicable	There were no concerns regarding the Van Dyksdrift area; therefore, these conditions were not applicable for this audit period.
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	<p>Ensure that any fractures that promulgate to surface after settlement has occurred is managed properly</p> <p>Fractures will be excavated to a minimum depth of 1.6 meters (stockpiling the upper 300 mm topsoil separately)</p> <p>Fractures will be backfilled using 150 mm compacted layers to a minimum thickness of 0,6 meters. (compaction to be 93% MOD AASHTO)</p> <p>Affected areas will be backfilled to 300 mm below surface level</p> <p>Finally covered and shaped to conform to the surface surroundings using a minimum 300 mm layer of topsoil.</p> <p>Ensure that the areas with surface water ponding are managed properly</p> <p>Conduct visual monitoring of areas being undermined and that have already been undermined</p> <p>Areas with surface water ponding identified and reshaped to free draining topography as described in the above action plan</p> <p>Areas reshaped checked for cracks and fractures and if fractures or cracks noticed above-mentioned action plan for fractures will be applied</p> <p>Ensure that the areas showing soil erosion are managed properly</p> <p>Visual monitoring of areas being undermined, areas that have already been undermined conducted and areas rehabilitated as mentioned in the above action plan</p> <p>Areas showing signs of soil erosion identified and reshaped to free draining topography as described in the above action plan for surface subsidence and surface fractures</p> <p>Ensure that reshaping and backfilling of fractures, surface subsidence, soil erosion and water ponding dose not have detrimental impact on natural vegetation</p> <p>Visual monitoring of the backfilled and reshaped areas for re-establishment of natural vegetation</p> <p>In consultation with the land owners the affected areas will be re-vegetated with appropriate vegetation species</p>		
Decommissioning and Closure			
Infrastructure Areas	Not applicable for this report, no infrastructure will occur in the area which will be mined	Not applicable	Not applicable for this report.
Ongoing Seepage Control	During the decommissioning phase, detailed analysis will be conducted to determine the decant points (from the underground workings), and the best practicable means of intercepting and management of such decant (such as engineer designed Evaporation dams or treatment) as determined during the study will be instituted.	Noted	The mine is aware and take cognizance of this. No actions required from the mine.
Mine Residue Deposits	Not applicable for this report	Not applicable	Not applicable for this report.
Sealing of underground workings and rehabilitation of dangerous excavations	Note that a safety factor of more than 1.6 and more than 3.1 will be used for underground pillars on the proposed mining area and on the pan to be undermined respectively. This will ensure long term stability of the undermined surface.	Not applicable	There were no instability concerns regarding the Van Dyksdrift area.
shafts	Not applicable to this report. An existing shaft i.e., vlaklaagte shaft will be used to access the Van Dyksdrift underground extension area.	Not applicable	The Vlaklaagte shaft has been decommissioned and rehabilitated; therefore, this condition is no longer applicable for this audit period.
Rehabilitation of opencast working	Not applicable as there are no opencast working	Noted	No mitigation measure provided.
Submission of information	Complaints register – the complaints register will be maintained during the decommissioning phase, and submitted at the end of the decommissioning phase to the Department of Mineral and Energy	Not applicable	The Van Dyksdrift area was long rehabilitated and decommissioned, this condition is no longer applicable for this audit period.
	Mining plan – the mining plan indicating the total extent of the underground workings will be submitted to the Department of Mineral and Energy within 1 year after decommissioning	Not applicable	The Van Dyksdrift area was long rehabilitated and decommissioned, this condition is no longer applicable for this audit period.
	Water quality monitoring reports – The current water monitoring program will continue through the decommissioning phase. An annual report will be generated detailing water quality trends	Not applicable	The Van Dyksdrift area was long rehabilitated and decommissioned, this condition is no longer applicable for this audit period.

	experienced during the decommissioning phase and highlighting areas of concern. This report will be submitted to the Department of Water Affairs and Forestry		
	Surface monitoring reports – The surface monitoring will continue through the decommissioning phase. An annual report will be generated detailing the findings of the surface monitoring during the decommissioning phase and will highlight areas of concerns.	Not applicable	The Van Dyksdrift area was long rehabilitated and decommissioned, this condition is no longer applicable for this audit period.
	Environmental Audit reports – The performance assessment reports will be submitted to the Department of Mineral and Energy for onward transmission to other interested government departments. This performance assessment will continue until closure is gained. The frequency and basis on which the report will be submitted will be determined by the Department of Mineral and energy.	Compliant	This report serves as a performance assessment report which will be submitted to the Department of Mineral and Energy upon completion.
Maintenance	Surface monitoring report - The current 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. Frequency of monitoring will remain monthly for the surface water monitoring point and three monthly for groundwater monitoring points for the first three years after closure. Thereafter, the frequency for surface water monitoring points will decrease to 3 monthly and the groundwater monitoring points to 6 monthly. This will again be reviewed after a further 2 years.	Compliant	Surface water monitoring for the entire GHS Colliery is still being undertaken, a latest report was provided for review.
Surface subsidence	No surface subsidence will occur	Noted	The mine take cognizance of the condition

8. DELIBERATIONONS

8.1. ADEQUACY AND COMPLIANCE WITH THE ALIGNED EIA AND ENVIRONMENTAL MANAGEMENT PROGRAMME

8.1.1. ADEQUACY OF THE GOEDEHOOP COLLIERY SOUTH VAN DYKSDRIFT

The Goedehoop Colliery EMPr Amendment document Goedehoop Colliery Van Dyksdrift Environmental Impact Assessment and Environmental Management Programme, was assessed not only for Goedehoop Colliery's compliance towards the commitments as contained within the document, but also the adequacy of the document towards the operations undertaken at Goedehoop Colliery.

The assessment of the adequacy of the EMPr Addendum found the following:

- The auditor is of the opinion that the EMPr sufficiently provides for the avoidance, management and mitigation of environmental impacts associated with the mining activities at Van Dyksdrift.

8.1.2. COMPLIANCE WITH THE PROVISIONS GOEDEHOOP COLLIERY EMPR ADDENDUM

Chapter 5.1 provides the partial- and non-compliances as recorded against the specific mitigation measures. A summary of the key concerns is provided below:

- No non-compliances were determined for this EMPr.
-

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 EMPr. This audit report will be submitted to the competent authority. Within 7 days of submission of this Audit Report to the competent authority (DMRE), Thungela Operations (Pty) Limited, Goedehoop 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.

It is recommended that should it be necessary; Goedehoop Colliery South Van Dyksdrift must review the EMPr only if there will be future planned activities.

10. DISCLAIMER

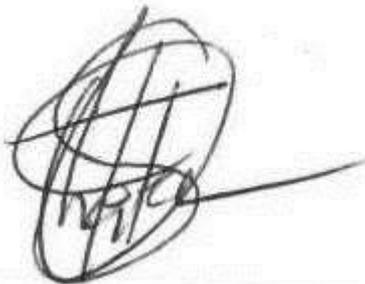
This report has been produced by Geovicon Environmental (Pty) Limited, with the skill and care normally exercised by a reasonable Independent Environmental Consultant during the rendering of the service. The service provided by Geovicon Environmental (Pty) Limited should not be considered as a legal 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 resource 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 ensures by all means, that information provided by management and/or representatives is correct and relevant, and that this report is based on information that could reasonably have 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.

11. DECLARATION

Mr. Ornassis Tshepo Shakwane of Geovicon Environmental (Pty) Limited, hereby declares that he is an independent auditor and that Geovicon Environmental (Pty) Limited and himself have no business, financial, personal or other interest in this project in respect of which Geovicon Environmental (Pty) Limited is appointed. Furthermore, no circumstances exist that may compromise the objectivity of Geovicon Environmental (Pty) Limited, excluding fair remuneration for work performed in connection with this audit.



Signed: _____

Date: 05 December 2022

O.T. Shakwane
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