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ENVIRONMENTAL SCOPING REPORT – EXECUTIVE SUMMARY

THUNGELA LEPHALALE COAL BED METHANE PROJECT

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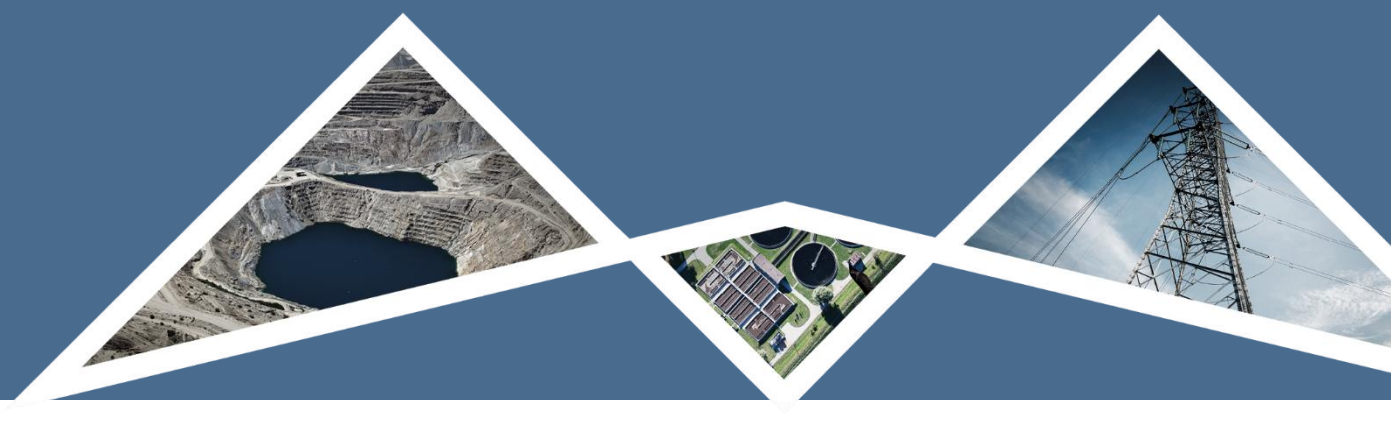

1 EXECUTIVE SUMMARY

This executive summary provides a high-level overview of this Scoping Report. The reader is urged to consult later sections of the complete Scoping Report should more specific information or detail be required on various aspects.

1.1 PROJECT OVERVIEW

Thungela Operations Proprietary Limited, a member of the Thungela Resources Limited Group (hereafter referred to as the Applicant or Thungela) has submitted a Production Right (PR) application to the Petroleum Agency SA (PASA) for coal bed methane (CBM) in the Lephalale Local Municipality, Limpopo Province, South Africa. Historic exploration activities which were undertaken in accordance with an Exploration Right (ER) have indicated a potentially viable and extractable CBM resource. The Applicant has applied to the PASA for a PR to extract and produce (utilize/beneficiate) the CBM resource.

What is CBM: CBM is a form of natural gas which can be recovered from coal deposits or coal seams. The gas is formed during the natural conversion of plant material into coal, known as coalification. When coalification occurs, the coal becomes saturated with water and methane gas is trapped within it

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Thungela aims to extract the CBM resource from the PR area in a phased manner. At present a total of 3 production phases are expected to reach the conceptual full field production which spans a total surface area of 134 302.6699 hectares (ha). The first production phase comprises of 333 production wells which will be connected via a buried gas gathering network of pipelines to a centralised gas processing facility. This phase will include 19 existing exploration phase wells as well as new wells to be constructed across the 20 properties of the EA area, all totalling approximately 333 wells and situated within an area of approximately 20 443 ha.

The PR and EA application area falls within the Lephalale Local Municipality (LM) and Waterberg District Municipality (DM), Limpopo Province. The EA application area is situated ~14km to the northwest of Lephalale town, 5km north of Marapong, and ~11km northwest of Onverwacht. The 20 farm portions forming the initial phase 1 of the production activities are: Withoutpan 404 (Portion 0); Paddakraal 405 (Portion 0); Ganzepan 446 (Portion 0); Vooruit 449 (Portion 0); Schrikvoorby 445 (Portion 0); Schrikvoorby 445 (Portion 1); Gelykebult 450 (Portion 0); Welgevonden 444 (Portion 0); Eendragtpan 451 (Portion 0); Grootpan 452 (Portion 0); Elandsvley 453 (Portion 0); Nooitgedacht 403 (Portion 0); Bulklip 701 (Portion 0); Bulklip 701 (Portion 1); Leeuwfontein 400 (Portion 0); Oliphantspad 255 (Portion 0); Klimopfontien 223 (Portion 0); Kurzabonakop 399 (Portion 0); Kerryfontein 402 (Portion 0); Waterval 169 (Portion 0). Two (2) of these farm portions are privately owned, three (3) are owned by Exxaro and the remaining fifteen (15) are owned by Thungela.

To optimally produce CBM, hydraulic stimulation or hydraulic fracturing of the target coal seams is being proposed. Following stimulation, the coal seam is dewatered to reduce the hydrostatic pressure of the water within the coal seam which allows the gas to be released to the wellbore. The gas processing includes a compression and liquefaction facility to produce the final product, Liquified Natural Gas (LNG), which will be distributed off site via road transport. The production is planned to span a period of 30 years commencing from the date that all relevant approvals and licences have been obtained.

1.1.1 EXPLORATION AND THE ORIGINAL “5-SPOT”

Exploration activities conducted under Thungela’s Exploration Right established the earliest basis for proving the technical and commercial viability of CBM extraction within the Production Right (PR) area. As part of these activities, Thungela constructed the original 5-Spot on the farm Bulklip 701 in the early 2000s. This consisted of a cluster of five vertically drilled CBM wells that were hydraulically stimulated and connected to a small gas and water gathering network, a water treatment unit, and a small gas processing facility. The 5-Spot was used as a

prefeasibility test site and generated valuable geological, operational and production data that informed the design of subsequent project phases.

1.1.2 INITIAL PROOF OF CONCEPT (POC)

Building on the results from the original 5-Spot, Thungela later developed a second 5-Spot on the farm Nooitgedacht 403 as part of the exploration programme. These wells were stimulated much later together with nine additional wells creating a functional 14-well wellfield. These wells were hydraulically stimulated and connected to a centralised gas and water processing facility. The 14-well cluster were connected to the original 5 spot wells, and together the 19 wells became the company's effective Proof of Concept (PoC), successfully demonstrating sustained CBM production capability, stable gas quality, and commercial-scale LNG production under the existing environmental authorisation previously referred to as the "37-Spot EA".

The Proof of Concept confirmed the viability of expanding CBM operations in the Lephalale region and now forms an integral part of Phase 1 of the wider production roll-out. For the purposes of this EIA, Phase 1 comprises approximately 333 wells in total, and this number includes:

- The 19 wells constructed during exploration,
- Approximately 314 additional new wells that will form part of the Phase 1 production sequence.

These existing wells and their associated infrastructure will be incorporated into the Phase 1 operational footprint and will tie into the broader gas and water gathering networks, processing facilities, and long-term production systems proposed for the full Phase 1 development.

This consolidation of the earlier exploration and PoC infrastructure into Phase 1 ensures continuity between historic data-generating activities, the proven operational model, and the larger-scale production configuration assessed as part of this application.

1.1.3 PHASE 1 (THIS APPLICATION)

This phase will cover the 20 properties described above and engage the installation of new wells and associated CBM production infrastructure. As a point of departure Thungela has identified a uniform well grid pattern covering the EA application area at a well density of 1 well per 40 acres/ 16 hectares or 400m apart from each other in a North-South, East-West direction.

The location of the individual well sites will be defined firstly by the location of the target resource (i.e. depth and presence of coal seams) and secondly considering any physical or environmental constraints that may occur at a site-specific location. Examples of constrains that will, where practically possible, be avoided when siting well sites may include, but not limited to:

- Sensitive biophysical and environmental features, such as wetlands, watercourses, springs, sensitive habitats or species of conservation concern, etc.
- Sensitive social and cultural features: existing land uses which may not be compatible with the well infrastructure (e.g. homesteads), graves sites or cemeteries, archaeological or paleontological sites, etc.
- Geological or physical features, such as fault lines, areas of geologic instability, steep slopes, or rocky outcrops.

Individual wells will be connected to the gas gathering network through an underground gas pipeline network and the dewatering pipelines will be located along the same routes as the gas pipeline network. The pipeline networks will transport gas to the LNG plant for processing of the gas and water to the water treatment plant for treatment of the water. Various options will be considered during this EIA process for the use or disposal of the treated water to identify the optimal use of this resource.

Thungela has applied to the relevant designated authority, namely the PASA, for an EA for the overall Production Right and first phase of the production (i.e. ~333 wells and associated infrastructure). The infrastructure comprising the remaining phases within the production right are not included in this EIA and will need to be assessed and applied for separately as and when the need for these expansions and future phases arises.

EIMS has been appointed by Thungela to fulfil the role of the Independent EAP in undertaking an EIA process to support applications for the required environmental regulatory approvals. These approvals include, but are not limited to:

- EA in terms of the NEMA;
- Environmental Management Programme (EMPr) in terms of the MPRDA;
- WUL in terms of the NWA;
- WML in terms of the NEMWA; and
- AEL in terms of the NEMAQA (if applicable).

1.2 NEED FOR THE PROJECT

South Africa's integrated resource planning framework holds significant relevance in justifying the development of natural gas resources within the country. Firstly, the framework underscores the importance of energy diversification, and natural gas, being a cleaner and more environmentally friendly energy source compared to coal, aligns perfectly with this goal. By integrating natural gas into the energy sector, South Africa can effectively reduce carbon emissions and cultivate a more sustainable energy portfolio. Secondly, the economic growth prospects associated with natural gas development are substantial, attracting investment across the entire value chain, from exploration and extraction to infrastructure development. Furthermore, the widespread utilisation of natural gas across industries, power generation, and transportation has the potential to foster job creation and stimulate economic activity. Thirdly, recognising the imperative of energy security, the framework acknowledges that natural gas can serve as a dependable and versatile energy source, capable of acting as a backup during peak demand periods and complementing intermittent renewable energy sources.

Additionally, the integrated resource planning framework places a strong emphasis on environmental sustainability, with natural gas seen as a transitional energy source that can help diminish South Africa's reliance on coal, a major contributor to air pollution and greenhouse gas emissions. Consequently, transitioning to natural gas can facilitate cleaner energy production, aligning with global sustainability goals.

In conclusion, South Africa's integrated resource planning framework aligns with energy diversification, economic growth, energy security, environmental sustainability, rural development, foreign investment attraction, and export potential which underscores its role in economically justifying the development of natural gas resources in South Africa.

1.3 SPECIALIST STUDIES

As part of this EIA a number of specialist studies have been commissioned to investigate key impacts that require further investigation. Any additional studies that may be identified during the course of the scoping and consultation process will be considered and included in the EIA phase. A list of the preliminary specialist studies is as follows:

- Air Quality and Climate Change
- Economic
- Geohydrology

- Heritage and Palaeontology
- Hydrology
- Noise
- Social
- Ecology
- Visual
- Aquatic and Wetland
- Soil, Agriculture and Hydropedology
- Major Hazardous Installation - Qualitative Risk Assessment
- Seismicity or Seismic Risks
- Traffic

1.4 IMPACTS IDENTIFIED AND SUMMARY OF IMPACT ASSESSMENT

Based on the type and extent of the proposed project infrastructure as well as the receiving environment, preliminary impacts have been identified and assessed during this scoping phase assessment. The results of the public consultation will be used to update the identified potential impacts (e.g. include additional impacts) which will be further refined during the EIA assessment and consultation process. Potential environmental impacts were identified during the scoping process, and these impacts were identified by the EAP in conjunction with the appointed specialists.

Impacts have been identified for the various phases of the project namely, planning, construction, operation, decommissioning, rehabilitation and closure. The broad approach to the significance rating methodology is to determine the environmental risk by considering the consequence of each impact (comprising nature, extent, duration, magnitude, and reversibility) and relate this to the probability/ likelihood of the impact occurring. Impacts may be positive in nature or negative in nature. This methodology of impact assessment determines the environmental risk. In addition, other factors, including cumulative impacts and potential for irreplaceable loss of resources, are used to determine a prioritisation factor which is applied to the post mitigation environmental risk to determine the overall significance of the impact. The overall significance is categorised as either low, medium or high and would apply to both the positive and negative impacts identified.

Based on the project activities, the scoping phase list of pre-identified potential impacts for specific environmental themes and project phases are listed below.

Project Activity	Phase	Potential Impact	Environmental Theme
Preliminary site investigations and layout planning. **Traffic movements.**	Planning	Loss of land capability, soil compaction, soil erosion, land degradation	Soils
		Damage to farm roads, existing services, and infrastructure	Social
		Impacts on safety and security of local residents	
		Public perceptions about safety associated with gas production	
		Nuisance factor due to an increase in ambient dust and noise levels	
		Impacts of traffic on people – dust, noise, safety – from a social and nuisance perspective	
		Impacts on the livelihoods of landowners	
		Impacts on the social license to operate	
		Influx of people – also possible social disintegration and cultural differentiation, increase in HIV/AIDS etc.	
		Contribution to the economy of South Africa	
		Effect on Energy Security	Economic
		Local Economic Growth and Rural Development	

Project Activity	Phase	Potential Impact	Environmental Theme
		Job Creation and Household Income	
		Foreign Investment Attraction and Forex Savings	
		Population Growth and Pressure on Local Infrastructure	
		Impact on tourism and alternative land-use	
Access road construction. **Construction camp and laydown establishment.** **Well site clearance, establishment, drilling, stimulation.** **Water abstraction, treatment and disposal.** **Gas and water pipeline construction.** **Electricity distribution infrastructure construction.** **LNG Plant and booster / compressor station construction.** **Traffic movements.** **Waste storage and disposal.**	Construction	Destruction, further loss and fragmentation of the vegetation community	Terrestrial Biodiversity
		Introduction of alien species, especially plants	
		Erosion due to storm water runoff and wind	
		Displacement of faunal community due to habitat loss, direct mortalities and disturbance (road collisions, noise, light, dust, vibration and poaching).	
		Loss of watercourse habitat	Aquatic/Wetland
		Decrease in surface water quality	
		Disruption of watercourse hydrology	
		Loss of land capability, soil compaction, soil erosion, land degradation	Soils
		Damage to farm roads, existing services, and infrastructure	Social
		Impacts on safety and security of local residents	
		Public perceptions about safety associated with gas production	
		Nuisance factor due to an increase in ambient dust and noise levels	
		Impacts of traffic on people – dust, noise, safety – from a social and nuisance perspective	
		Impacts on the livelihoods of landowners	
		Impacts on the social license to operate	
		Influx of people – also possible social disintegration and cultural differentiation, increase in HIV/AIDS etc.	
		Contribution to the economy of South Africa	
		Disturbance of: Historical Structures - Historical structure foundations	Heritage
		Disturbance of: Historical Structures - Kraals	
		Disturbance of: Historical Structures - Boreholes	
		Disturbance of: Historical Structures - Excavated pit	
		Disturbance of: Archaeological Sites - Single find spot	
		Disturbance of: Archaeological Sites - Iron Age Site	
		Erosion of soils	Hydrology (surface water)
		Pollutants entering the surface water environment	
		Increase in runoff	
		Increased flood potential	
		Groundwater deterioration and siltation due to contaminated stormwater run-off from the construction area.	Geohydrology (groundwater)
		Poor quality leachate may emanate from the construction camp which may have a negative impact on groundwater quality.	
		Mobilisation and maintenance of heavy vehicle and machinery on-site may cause hydrocarbon contamination of groundwater resources.	
		Poor storage and management of hazardous chemical substances on-site may cause groundwater pollution.	
		Dewatering of the targeted coal-seam aquifer can potentially have a negative impact on groundwater and surface water quantities. Lowering of regional groundwater levels due to a depletion in aquifer storage may cause the formation of a cone of depression i.e., groundwater zone of influence and consequently lowering of the regional phreatic/ piezometric levels.	
		Migration of saline groundwater from the deep, fractured aquifer to the overlying, potable aquifer(s) during the gas production phase.	
		Migration of stray gas from the deep, fractured aquifer to the overlying, potable aquifer(s) during the gas production phase.	
		Effect on Energy Security	Economic
		Local Economic Growth and Rural Development	
		Job Creation and Household Income	
		Foreign Investment Attraction and Forex Savings	
		Population Growth and Pressure on Local Infrastructure	
		Impact on tourism and alternative land-use	
		Impact on palaeontological resources	Palaeontology

Project Activity	Phase	Potential Impact	Environmental Theme
		Decrease in ambient air quality	Air Quality
		Increase in noise levels	Noise
		Further general degradation of the local landscape	Visual
		Degradation of views from the R33 and R572 in proximity to the proposed site	
		Further degradation of the local landscape as viewed from adjacent local roads	
		Further degradation of the local landscape as viewed from homesteads	
		Degradation of views from the Olifantspad and Gideon Troskie Private Nature Reserves	
		Lighting impacts on sensitive receptors	
		Induced or triggered seismic activity	Seismicity
		Deterioration of existing road surfaces/ pavements	Traffic
		Traffic congestion	
		Safety of road users	
Maintenance and monitoring of wells and pipelines. **Water abstraction, treatment and disposal.** **Traffic movements.** **LNG Plant operations.** **Waste storage and disposal.**	Operation	Continued encroachment of an indigenous vegetation community by alien invasive plant species as well as erosion due to disturbed soils	Terrestrial Biodiversity
		Continued displacement and fragmentation of the faunal community (including threatened species) due to ongoing anthropogenic disturbances (noise, dust and vibrations) and habitat degradation/loss (litter, road mortalities and/or poaching).	
		Loss of watercourse habitat	Aquatic/Wetland
		Decrease in surface water quality	
		Disruption of watercourse hydrology	
		Loss of land capability, soil compaction, soil erosion, land degradation	Soils
		Damage to farm roads, existing services, and infrastructure	Social
		Impacts on safety and security of local residents	
		Public perceptions about safety associated with gas production	
		Nuisance factor due to an increase in ambient dust and noise levels	
		Impacts of traffic on people – dust, noise, safety – from a social and nuisance perspective	
		Impacts on the livelihoods of landowners	
		Impacts on the social license to operate	
		Influx of people – also possible social disintegration and cultural differentiation, increase in HIV/AIDS etc.	
		Contribution to the economy of South Africa	
		Erosion of soils	Hydrology (surface water)
		Pollutants entering the surface water environment	
		Increase in runoff	
		Increased flood potential	
		Dewatering of the targeted coal-seam aquifer can potentially have a negative impact on groundwater and surface water quantities. Lowering of regional groundwater levels due to a depletion in aquifer storage may cause the formation of a cone of depression i.e., groundwater zone of influence and consequently lowering of the regional phreatic/ piezometric levels.	Geohydrology (groundwater)
		Migration of saline groundwater from the deep, fractured aquifer to the overlying, potable aquifer(s) during the gas production phase.	
		Migration of stray gas from the deep, fractured aquifer to the overlying, potable aquifer(s) during the gas production phase.	
		Groundwater pollution as a result of wastewater spills and seepage from wastewater storage facilities.	
		Poor quality leachate may emanate from the plant footprint area which may have a negative impact on groundwater quality.	
		Mobilisation and maintenance of heavy vehicle and machinery on-site may cause hydrocarbon contamination of groundwater resources.	
		Poor storage and management of hazardous chemical substances on-site may cause groundwater pollution.	
		Leakage of harmful substances from tanks, pipelines or other equipment may cause groundwater pollution.	

Project Activity	Phase	Potential Impact	Environmental Theme
		Effect on Energy Security	Economic
		Local Economic Growth and Rural Development	
		Job Creation and Household Income	
		Foreign Investment Attraction and Forex Savings	
		Population Growth and Pressure on Local Infrastructure	
		Impact on tourism and alternative land-use	
		Decrease in ambient air quality	Air Quality
		Increase in noise levels	Noise
		Further general degradation of the local landscape	Visual
		Degradation of views from the R33 and R572 in proximity to the proposed site	
		Further degradation of the local landscape as viewed from adjacent local roads	
		Further degradation of the local landscape as viewed from homesteads	
		Degradation of views from the Olifantspad and Gideon Troskie Private Nature Reserves	
		Lighting impacts on sensitive receptors	
		Induced or triggered seismic activity	Seismicity
		Deterioration of existing road surfaces/ pavements	Traffic
		Traffic congestion	
		Safety of road users	
Removal of project infrastructure. **Well sealing and concrete batching.** **Traffic movements.** **Waste disposal.**	Decommissioning	Loss of land capability, soil compaction, soil erosion, land degradation	Soils
		Damage to farm roads, existing services, and infrastructure	Social
		Impacts on safety and security of local residents	
		Public perceptions about safety during decommissioning activities	
		Nuisance factor due to an increase in ambient dust and noise levels	
		Impacts of traffic on people – dust, noise, safety – from a social and nuisance perspective	
		Impacts on the livelihoods of landowners	
		Impacts on the social license to operate	
		Influx of people – also possible social disintegration and cultural differentiation, increase in HIV/AIDS etc.	
		Contribution to the economy of South Africa	
		Erosion of soils	Hydrology (surface water)
		Pollutants entering the surface water environment	
		Increase in runoff	
		Increased flood potential	
		Dewatering effects lessening, post-operational re-watering and flooding of underground coal seams which may result in a rebound of the local hydraulic head and regional water levels.	Geohydrology (groundwater)
		Poor quality leachate emanating from sulphide bearing minerals associated with dewatered coal seams and faces which will have a negative impact on groundwater water quality.	
		Migration of saline groundwater from the deep, fractured aquifer to the overlying, potable aquifer(s) during the borehole closure and decommissioning phase.	
		Migration of stray gas from the deep, fractured aquifer to the overlying, potable aquifer(s) if the wells not adequately sealed.	
		Groundwater pollution as a result of wastewater spills and seepage from wastewater storage facilities.	
		Poor quality leachate may emanate from the plant footprint area which may have a negative impact on groundwater quality.	
		De-mobilisation of heavy vehicle and machinery as part of the decommissioning phase on-site may cause hydrocarbon contamination of groundwater resources.	
		Effect on Energy Security	Economic
		Local Economic Growth and Rural Development	
		Retrenchments of labour and Household Income	
		Foreign Investment Attraction and Forex Savings	
		Population Growth and Pressure on Local Infrastructure	
		Impact on tourism and alternative land-use	
		Decrease in ambient air quality	Air Quality

Project Activity	Phase	Potential Impact	Environmental Theme
		Increase in noise levels	Noise
		Induced or triggered seismic activity	Seismicity
		Deterioration of existing road surfaces/ pavements	Traffic
		Traffic congestion	
		Safety of road users	
Soil reinstatement. **Ripping of compacted soils.** **Seeding and vegetation establishment.** **Traffic movements.**	Rehabilitation and Closure	Loss of land capability, soil compaction, soil erosion, land degradation	Soils
		Damage to farm roads, existing services, and infrastructure	Social
		Impacts on safety and security of local residents	
		Public perceptions about safety during decommissioning activities	
		Nuisance factor due to an increase in ambient dust and noise levels	
		Impacts of traffic on people – dust, noise, safety – from a social and nuisance perspective	
		Impacts on the livelihoods of landowners	
		Impacts on the social license to operate	
		Influx of people – also possible social disintegration and cultural differentiation, increase in HIV/AIDS etc.	
		Contribution to the economy of South Africa	
		Erosion of soils	Hydrology (surface water)
		Pollutants entering the surface water environment	
		Increase in runoff	
		Increased flood potential	
		Effect on Energy Security	Economic
		Local Economic Growth and Rural Development	
		Retrenchments of labour and Household Income	
		Foreign Investment Attraction and Forex Savings	
		Population Growth and Pressure on Local Infrastructure	
		Impact on tourism and alternative land-use	

Following on from the above biophysical and socio-economic impacts that have been identified and assessed during this Scoping phase, the pre-mitigation environmental risk, post mitigation environmental risk, and final significance **when applying a priority factor**[1] to each impact is presented below with a colour scale representing the Environmental Significance Rating ranging from high negative to high positive as follows.

Environmental Significance Rating (ER)	
Value	Description
≤ -17	High negative (i.e. where the impact must have an influence on the decision process to develop in the area).
> -17 ≤ -9	Medium negative (i.e. where the impact could influence the decision to develop in the area).
> -9 < 0	Low negative (i.e. where this impact would not have a direct influence on the decision to develop in the area).
0	No impact
>0 < 9	Low positive (i.e. where this impact would not have a direct influence on the decision to develop in the area).
≥ 9 < 17	Medium positive (i.e. where the impact could influence the decision to develop in the area).
≥ 17	High positive (i.e. where the impact must have an influence on the decision process to develop in the area).

[1] Refer to Section 11.1.2 of the complete Scoping Report which clarifies how the priority factor is calculated and applied to the final significance. Note that the final significance including the priority factor can in some instances result in a higher final significance than the pre-mitigation scenario.

Table 1: Environmental significance ratings of activities pre and post application of mitigations.

Environmental Theme / Specialist Discipline	Impact	Phase	Pre-mitigation Significance	Post-mitigation Significance	Final Significance Including Priority Factor
Terrestrial Biodiversity	Destruction, further loss and fragmentation of the vegetation community	Construction	-14	-6	-7.5
	Introduction of alien species, especially plants	Construction	-15	-4	-5
	Erosion due to storm water runoff and wind	Construction	-15	-7.5	-9.375
	Displacement of faunal community due to habitat loss, direct mortalities and disturbance (road collisions, noise, light, dust, vibration and poaching).	Construction	-16	-6.75	-8.4375
	Continued encroachment of an indigenous vegetation community by alien invasive plant species as well as erosion due to disturbed soils	Operation	-15	-6.75	-8.4375
	Continued displacement and fragmentation of the faunal community (including threatened species) due to ongoing anthropogenic disturbances (noise, dust and vibrations) and habitat degradation/loss (litter, road mortalities and/or poaching).	Operation	-15	-6.75	-8.4375
Aquatic/Wetland	Habitat	Construction	-6.5	-5	-5
	Water Quality	Construction	-7	-5.5	-5.5
	Flow	Construction	-5.5	-2.25	-2.25
	Habitat	Operation	-6.5	-4.5	-4.5
	Water Quality	Operation	-7	-2.5	-2.5
	Flow	Operation	-5.5	-2.25	-2.25
Soils	Loss of land capability, soil compaction, soil erosion, land degradation	Planning	-1.25	-1	-1
	Loss of land capability, soil compaction, soil erosion, land degradation	Construction	-9	-6.75	-9.28125
	Loss of land capability, soil compaction, soil erosion, land degradation	Operation	-5	-4	-5
	Loss of land capability, soil compaction, soil erosion, land degradation	Decommissioning	-6.75	-4	-5

Environmental Theme / Specialist Discipline	Impact	Phase	Pre-mitigation Significance	Post-mitigation Significance	Final Significance Including Priority Factor
	Loss of land capability, soil compaction, soil erosion, land degradation	Rehab and closure	-4	-1.75	-1.96875
Social	Damage to farm roads, existing services, and infrastructure	Planning	-5	-5	-5
	Impacts on safety and security of local residents	Planning	-5	-5	-5
	Public perceptions about safety associated with gas production	Planning	-5	-5	-5
	Nuisance factor due to an increase in ambient dust and noise levels	Planning	-5	-5	-5
	Impacts of traffic on people – dust, noise, safety – from a social and nuisance perspective	Planning	-5	-5	-5
	Impacts on the livelihoods of landowners	Planning	-5	-5	-5
	Impacts on the social license to operate	Planning	-5	-5	-5
	Influx of people – also possible social disintegration and cultural differentiation, increase in HIV/AIDS etc.	Planning	-5	-5	-5
	Contribution to the economy of South Africa	Planning	5	5	5
	Damage to farm roads, existing services, and infrastructure	Construction	-9	-9	-11.25
	Impacts on safety and security of local residents	Construction	-9	-9	-11.25
	Public perceptions about safety associated with gas production	Construction	-11	-9	-11.25
	Nuisance factor due to an increase in ambient dust and noise levels	Construction	-9	-9	-11.25
	Impacts of traffic on people – dust, noise, safety – from a social and nuisance perspective	Construction	-9	-9	-11.25
	Impacts on the livelihoods of landowners	Construction	-9	-9	-11.25
	Impacts on the social license to operate	Construction	-9	-9	-11.25
	Influx of people – also possible social disintegration and cultural differentiation, increase in HIV/AIDS etc.	Construction	-11	-11	-13.75
	Contribution to the economy of South Africa	Construction	16.25	16.25	20.3125
	Damage to farm roads, existing services, and infrastructure	Operation	-14	-13	-17.875
	Impacts on safety and security of local residents	Operation	-14	-13	-17.875
	Public perceptions about safety associated with gas production	Operation	-14	-12	-16.5
	Nuisance factor due to an increase in ambient dust and noise levels	Operation	-13	-13	-16.25

Environmental Theme / Specialist Discipline	Impact	Phase	Pre-mitigation Significance	Post-mitigation Significance	Final Significance Including Priority Factor
	Impacts of traffic on people – dust, noise, safety – from a social and nuisance perspective	Operation	-13	-13	-16.25
	Impacts on the livelihoods of landowners	Operation	-13	-13	-16.25
	Impacts on the social license to operate	Operation	-13	-12	-15
	Influx of people – also possible social disintegration and cultural differentiation, increase in HIV/AIDS etc.	Operation	-15	-15	-18.75
	Contribution to the economy of South Africa	Operation	21.25	20	30
	Damage to farm roads, existing services, and infrastructure	Decommissioning	17.5	17.5	26.25
	Impacts on safety and security of local residents	Decommissioning	17.5	17.5	26.25
	Public perceptions about safety associated with gas production	Decommissioning	17.5	17.5	26.25
	Nuisance factor due to an increase in ambient dust and noise levels	Decommissioning	17.5	17.5	26.25
	Impacts of traffic on people – dust, noise, safety – from a social and nuisance perspective	Decommissioning	17.5	17.5	26.25
	Impacts on the livelihoods of landowners	Decommissioning	13.75	17.5	26.25
	Impacts on the social license to operate	Decommissioning	17.5	17.5	26.25
	Influx of people – also possible social disintegration and cultural differentiation, increase in HIV/AIDS etc.	Decommissioning	17.5	17.5	26.25
	Contribution to the economy of South Africa	Decommissioning	20	18.75	28.125
	Damage to farm roads, existing services, and infrastructure	Rehab and closure	21.25	20	30
	Impacts on safety and security of local residents	Rehab and closure	21.25	20	30
	Public perceptions about safety associated with gas production	Rehab and closure	21.25	20	30
	Nuisance factor due to an increase in ambient dust and noise levels	Rehab and closure	21.25	20	30
	Impacts of traffic on people – dust, noise, safety – from a social and nuisance perspective	Rehab and closure	21.25	20	30
	Impacts on the livelihoods of landowners	Rehab and closure	17.5	20	30
	Impacts on the social license to operate	Rehab and closure	21.25	20	30

Environmental Theme / Specialist Discipline	Impact	Phase	Pre-mitigation Significance	Post-mitigation Significance	Final Significance Including Priority Factor
	Influx of people – also possible social disintegration and cultural differentiation, increase in HIV/AIDS etc.	Rehab and closure	21.25	20	30
	Contribution to the economy of South Africa	Rehab and closure	22.5	21.25	31.875
	Historical Structures - Historical structure foundations	Construction	-19	3.5	4.375
Heritage	Historical Structures - Kraals	Construction	-6	3.5	3.5
	Historical Structures - Boreholes	Construction	-15	3.5	3.9375
	Historical Structures - Excavated pit	Construction	-3	3	3
	Archaeological Sites - Single find spot	Construction	-6.5	3.25	4.0625
	Archaeological Sites - Iron Age Site	Construction	-12.75	4	5
	Erosion of Soils	Construction	-8.25	-4	-5
Hydrology (surface water)	Erosion of Soils	Operation	-8.25	-5	-6.25
	Erosion of Soils	Decommissioning	-7.5	-4	-5
	Erosion of Soils	Rehab and closure	-4.5	-4	-5
	Pollutants entering the surface water environment	Construction	-12	-5.5	-6.875
	Pollutants entering the surface water environment	Operation	-12	-5.5	-6.875
	Pollutants entering the surface water environment	Decommissioning	-12	-5.5	-6.875
	Pollutants entering the surface water environment	Rehab and closure	-7.5	-4	-5
	Increase in runoff	Construction	-10	-10	-11.25
	Increase in runoff	Operation	-10	-10	-11.25
	Increase in runoff	Decommissioning	-10	-10	-11.25

Environmental Theme / Specialist Discipline	Impact	Phase	Pre-mitigation Significance	Post-mitigation Significance	Final Significance Including Priority Factor
	Increase in runoff	Rehab and closure	-6.75	-6.75	-7.59375
	Flood potential	Construction	-9	-4.5	-4.5
	Flood potential	Operation	-9	-4.5	-4.5
	Flood potential	Decommissioning	-9	-4.5	-4.5
	Flood potential	Rehab and closure	-6.75	-4.5	-4.5
	Groundwater deterioration and siltation due to contaminated stormwater run-off from the construction area.	Construction	-8	-1.75	-1.75
Geohydrology (groundwater)	Poor quality leachate may emanate from the construction camp which may have a negative impact on groundwater quality.	Construction	-11	-4.5	-5.625
	Mobilisation and maintenance of heavy vehicle and machinery on-site may cause hydrocarbon contamination of groundwater resources.	Construction	-11	-4.5	-5.625
	Poor storage and management of hazardous chemical substances on-site may cause groundwater pollution.	Construction	-4	-1.75	-1.75
	Dewatering of the targeted coal-seam aquifer can potentially have a negative impact on groundwater and surface water quantities. Lowering of regional groundwater levels due to a depletion in aquifer storage may cause the formation of a cone of depression i.e., groundwater zone of influence and consequently lowering of the regional phreatic/ piezometric levels.	Operation	-17.5	-3.25	-4.875
	Migration of saline groundwater from the deep, fractured aquifer to the overlying, potable aquifer(s) during the gas production phase.	Construction	-14	-3.25	-4.875

Environmental Theme / Specialist Discipline	Impact	Phase	Pre-mitigation Significance	Post-mitigation Significance	Final Significance Including Priority Factor
	Migration of stray gas from the deep, fractured aquifer to the overlying, potable aquifer(s) during the gas production phase.	Construction	-14	-3.25	-4.875
	Dewatering of the targeted coal-seam aquifer can potentially have a negative impact on groundwater and surface water quantities. Lowering of regional groundwater levels due to a depletion in aquifer storage may cause the formation of a cone of depression i.e., groundwater zone of influence and consequently lowering of the regional phreatic/ piezometric levels.	Operation	-21.25	-4	-6
	Migration of saline groundwater from the deep, fractured aquifer to the overlying, potable aquifer(s) during the gas production phase.	Operation	-17	-4	-6
	Migration of stray gas from the deep, fractured aquifer to the overlying, potable aquifer(s) during the gas production phase.	Operation	-17	-4	-6
	Groundwater pollution as a result of wastewater spills and seepage from wastewater storage facilities.	Operation	-12	-3.75	-4.6875
	Poor quality leachate may emanate from the plant footprint area which may have a negative impact on groundwater quality.	Operation	-12	-3.75	-4.6875
	Mobilisation and maintenance of heavy vehicle and machinery on-site may cause hydrocarbon contamination of groundwater resources.	Operation	-12	-3.75	-4.6875
	Poor storage and management of hazardous chemical substances on-site may cause groundwater pollution.	Operation	-12	-3.75	-4.6875
	Leakage of harmful substances from tanks, pipelines or other equipment may cause groundwater pollution.	Operation	-12	-3.75	-4.6875
	Dewatering effects lessening, post-operational re-watering and flooding of underground coal seams which may result in a rebound of the local hydraulic head and regional water levels.	Decommissioning	16	-6	-7.5

Environmental Theme / Specialist Discipline	Impact	Phase	Pre-mitigation Significance	Post-mitigation Significance	Final Significance Including Priority Factor
	Poor quality leachate emanating from sulphide bearing minerals associated with dewatered coal seams and faces which will have a negative impact on groundwater water quality.	Decommissioning	-23.75	-6	-7.5
	Migration of saline groundwater from the deep, fractured aquifer to the overlying, potable aquifer(s) during the borehole closure and decommissioning phase.	Decommissioning	-16	-6	-7.5
	Migration of stray gas from the deep, fractured aquifer to the overlying, potable aquifer(s) if the wells not adequately sealed.	Decommissioning	-16	-6	-7.5
	Groundwater pollution as a result of wastewater spills and seepage from wastewater storage facilities.	Decommissioning	-6.5	-2.25	-2.53125
	Poor quality leachate may emanate from the plant footprint area which may have a negative impact on groundwater quality.	Decommissioning	-6.5	-2.25	-2.53125
	De-mobilisation of heavy vehicle and machinery as part of the decommissioning phase on-site may cause hydrocarbon contamination of groundwater resources.	Decommissioning	-6.5	-2.25	-2.53125
	Energy Security	Planning	6.25	6.25	8.59375
Economic	Local economic growth and rural development as a result of this project	Planning	6.25	6.25	8.59375
	Job creation and Household Income as a result of additional employment opportunities	Planning	6.25	6.25	8.59375
	Foreign investment attraction and forex savings	Planning	6.25	6.25	8.59375
	Population Growth due to influx of workers and pressure on local infrastructure	Planning	6.25	6.25	8.59375
	Tourism and alternative land-use	Planning	-6.25	-6.25	-7.8125
	Energy Security	Construction	14	14	19.25
	Local Economic Growth and Rural Development	Construction	13	13	17.875
	Job Creation and Household Income	Construction	13	13	17.875
	Foreign Investment Attraction and Forex Savings	Construction	12	12	16.5
	Population Growth and Pressure on Local Infrastructure	Construction	-10	-10	-13.75
	Tourism and alternative land-use	Construction	-12	-6.25	-8.59375

Environmental Theme / Specialist Discipline	Impact	Phase	Pre-mitigation Significance	Post-mitigation Significance	Final Significance Including Priority Factor
	Energy Security	Operation	14	14	19.25
	Local Economic Growth and Rural Development	Operation	13	13	17.875
	Job Creation and Household Income	Operation	13	13	17.875
	Foreign Investment Attraction and Forex Savings	Operation	12	12	16.5
	Population Growth and Pressure on Local Infrastructure	Operation	-10	-10	-13.75
	Tourism and alternative land-use	Operation	-12	-12	-16.5
	Energy Security	Decommissioning	-14	-13	-17.875
	Local Economic Growth and Rural Development	Decommissioning	-13	-13	-17.875
	Job Creation and Household Income	Decommissioning	-13	-12	-16.5
	Foreign Investment Attraction and Forex Savings	Decommissioning	-12	-10	-13.75
	Population Growth and Pressure on Local Infrastructure	Decommissioning	10	13	17.875
	Tourism and alternative land-use	Decommissioning	12	12	15
	Energy Security	Rehab and closure	-14	-13	-17.875
	Local Economic Growth and Rural Development	Rehab and closure	-13	-12	-16.5
	Job Creation and Household Income	Rehab and closure	-13	-10	-13.75
	Foreign Investment Attraction and Forex Savings	Rehab and closure	-12	-13	-17.875
	Population Growth and Pressure on Local Infrastructure	Rehab and closure	10	13	17.875
	Tourism and alternative land-use	Rehab and closure	12	12	15
	Impact on palaeontological resources	Construction	-10.5	11.25	12.65625
Palaeontology	Ambient air quality	Construction	-10	-7.5	-7.5
Air Quality	Ambient air quality	Operation	-12	-8.25	-8.25
	Ambient air quality	Decommissioning	-10	-7.5	-7.5
	Increase in noise levels	Construction	-10	-7.5	-7.5
Noise	Increase in noise levels	Operation	-9.75	-9	-9
	Increase in noise levels	Decommissioning	-10	-7.5	-7.5
	Further general degradation of the local landscape	Construction	-6	-4	-4
Visual	Further general degradation of the local landscape	Operation	-6.75	-4.5	-4.5
	Degradation of views from the R33 and R572 in proximity to the proposed site	Construction	-6	-4	-4
	Degradation of views from the R33 and R572 in proximity to the proposed site	Operation	-6.75	-4.5	-4.5

Environmental Theme / Specialist Discipline	Impact	Phase	Pre-mitigation Significance	Post-mitigation Significance	Final Significance Including Priority Factor
	Further degradation of the local landscape as viewed from adjacent local roads	Construction	-6	-4	-4
	Further degradation of the local landscape as viewed from adjacent local roads	Operation	-6.75	-4.5	-4.5
	Further degradation of the local landscape as viewed from homesteads	Construction	-6	-4	-4
	Further degradation of the local landscape as viewed from homesteads	Operation	-6.75	-4.5	-4.5
	Degradation of views from the Olifantspad and Gideon Troskie Private Nature Reserves	Construction	-6	-4	-4
	Degradation of views from the Olifantspad and Gideon Troskie Private Nature Reserves	Operation	-6.75	-4.5	-4.5
	Lighting impacts on sensitive receptors	Construction	-6	-4	-4
	Lighting impacts on sensitive receptors	Operation	-6.75	-4.5	-4.5
	Induced or triggered seismic activity	Construction	-4	-3.75	-5.15625
Seismicity	Induced or triggered seismic activity	Operation	-4.5	-3.75	-3.75
	Induced or triggered seismic activity	Decommissioning	-4	-3	-3
	Deterioration of existing road surfaces/ pavements	Construction	-11	-5.5	-6.1875
Traffic	Deterioration of existing road surfaces/ pavements	Operation	-13	-6.5	-7.3125
	Deterioration of existing road surfaces/ pavements	Decommissioning	-5	-2.5	-2.5
	Traffic congestion	Construction	-11	-5.5	-6.1875
	Traffic congestion	Operation	-13	-6.5	-7.3125
	Traffic congestion	Decommissioning	-10	-2.5	-2.5
	Safety of road users	Construction	-13	-6.5	-7.3125
	Safety of road users	Operation	-15	-7.5	-8.4375
	Safety of road users	Decommissioning	-12	-3	-3

1.5 PUBLIC PARTICIPATION

The public participation process (PPP) for this application has been undertaken in accordance with the requirements of the NEMA EIA Regulations, and in line with the principles of Integrated Environmental Management (IEM). An integrated PPP process is being conducted which encompasses the EA application, WUL application as well as the AEL application. IEM implies an open and transparent participatory process, whereby stakeholders and other I&APs are afforded an opportunity to comment on the project and have their views considered and included as part of project planning and ultimately to inform this EIA process and authority decision making.

While there was an initial notification undertaken in November 2023, the project was put on hold and recommenced in 2026 and subsequently a second notification and call to register commenced on 20 March 2026. The initial notification was undertaken in English, Afrikaans, Sepedi and Setswana and was given in the following manner:

- Registered letters, faxes, emails and SMS's: Notification were distributed to all pre-identified and previously registered I&APs including government organisations, NGOs, relevant municipalities, ward councillors, landowners and other organisations that may be interested or affected.
- Advertisements describing the proposed project and EIA process were published in the Mogol Pos and Lekae Newspapers with circulation in the vicinity of the application area. The initial newspaper advertisements were published in English, Afrikaans, Sepedi and Setswana.
- Sixty-two (62) A1 Correx site notices (in English, Afrikaans, Sepedi and Setswana) were placed at 36 strategic locations within and surrounding the Production Right application area between the 16th and 20th of March 2026.
- In addition to the above methods of notification, a radio advertisement was broadcast between 18 to 20 March 2026 on Waterberg Stereo radio station.

Notification regarding the availability of this Scoping Report for public review was given in the following manner to all registered I&APs:

- Registered letters with details on where the scoping report can be obtained and/or reviewed, public meeting date and time, EIMS contact details as well as the public review comment period;
- Facsimile notifications with information similar to that in the registered letter described above;
- SMS notifications where cell phone numbers were available for registered I&AP's; and/or
- Email notifications with a letter attachment containing the information described above.

A high-level summary of the comments raised to date since the initial Call to Register notifications were published/distributed are presented below:

- Request to be registered as an I&AP of the project.
- Request for information relating to the background of the project.
- Request for details (and associated stakeholder engagement forms) on how to register as an I&AP.
- Request for information on affected properties, both in PR area and EIA area.
- Query on how the project will affect other economic activities in the area.

During this scoping phase, the statutory 30-day public participation process is intended to provide opportunity for engagement with landowners, the public, and key stakeholders to obtain any comments, concerns or other relevant information that would be material to the ongoing environmental impact assessment. The methods of engagement are discussed above, and further engagement will be undertaken during the EIA phase following

completion of the scoping phase. All comments, concerns and information shared during these consultation processes will be considered by the EAP as well as the specialists to inform the outcome of the various studies.