



**mineral resources**

Department:  
Mineral Resources  
**REPUBLIC OF SOUTH AFRICA**

**BASIC ASSESSMENT REPORT**  
**And**  
**ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT**

SUBMITTED FOR ENVIRONMENTAL AUTHORIZATIONS IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 AND THE NATIONAL ENVIRONMENTAL MANAGEMENT WASTE ACT, 2008 IN RESPECT OF LISTED ACTIVITIES THAT HAVE BEEN TRIGGERED BY APPLICATIONS IN TERMS OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (MPRDA) (AS AMENDED).

**NAME OF APPLICANT:** De Beers Consolidated Mines (Pty) Limited

**TEL NO:** 053 839 4243

**FAX NO:** 053 839 4880

**POSTAL ADDRESS:** PO BOX 616, Kimberley, 8300

**PHYSICAL ADDRESS:** 36 Stockdale street, Kimberley, 8300

**FILE REFERENCE NUMBER SAMRAD:** NC 30/5/1/1/2/11759 PR

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## 1. IMPORTANT NOTICE

In terms of the Mineral and Petroleum Resources Development Act (Act 28 of 2002 as amended), the Minister must grant a prospecting or mining right if among others the mining “will not result in unacceptable pollution, ecological degradation or damage to the environment”.

Unless an Environmental Authorisation can be granted following the evaluation of an Environmental Impact Assessment and an Environmental Management Programme report in terms of the National Environmental Management Act (Act 107 of 1998) (NEMA), it cannot be concluded that the said activities will not result in unacceptable pollution, ecological degradation or damage to the environment.

In terms of section 16(3)(b) of the EIA Regulations, 2014, any report submitted as part of an application must be prepared in a format that may be determined by the Competent Authority and in terms of section 17 (1) (c) the competent Authority must check whether the application has taken into account any minimum requirements applicable or instructions or guidance provided by the competent authority to the submission of applications.

**It is therefore an instruction that** the prescribed reports required in respect of applications for an environmental authorisation for listed activities triggered by an application for a right or a permit are submitted in the exact format of, and provide all the information required in terms of, this template. Furthermore please be advised that failure to submit the information required in the format provided in this template will be regarded as a failure to meet the requirements of the Regulation and will lead to the Environmental Authorisation being refused.

**It is furthermore an instruction that** the Environmental Assessment Practitioner must process and interpret his/her research and analysis and use the findings thereof to compile the information required herein. (Unprocessed supporting information may be attached as appendices). The EAP must ensure that the information required is placed correctly in the relevant sections of the Report, in the order, and under the provided headings as set out below, and ensure that the report is not cluttered with un-interpreted information and that it unambiguously represents the interpretation of the applicant.

## **2. Objective of the basic assessment process**

The objective of the basic assessment process is to, through a consultative process—

- (a) determine the policy and legislative context within which the proposed activity is located and how the activity complies with and responds to the policy and legislative context;
- (b) identify the alternatives considered, including the activity, location, and technology alternatives;
- (c) describe the need and desirability of the proposed alternatives,
- (d) through the undertaking of an impact and risk assessment process inclusive of cumulative impacts which focused on determining the geographical, physical, biological, social, economic, heritage , and cultural sensitivity of the sites and locations within sites and the risk of impact of the proposed activity and technology alternatives on the these aspects to determine:
  - (i) the nature, significance, consequence, extent, duration, and probability of the impacts occurring to; and
  - (ii) the degree to which these impacts—
    - (aa) can be reversed;
    - (bb) may cause irreplaceable loss of resources; and
    - (cc) can be managed, avoided or mitigated;
- (e) through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to—
  - (i) identify and motivate a preferred site, activity and technology alternative;
  - (ii) identify suitable measures to manage, avoid or mitigate identified impacts; and
  - (iii) identify residual risks that need to be managed and monitored.

**PART A**  
**SCOPE OF ASSSMENT AND BASIC ASSESSMENT REPORT**

**3. Contact Person and correspondence address**

**a) Details of**

**i) Details of the EAP**

Name of The Practitioner: Theophilus Tarisani Rikhotso

Tel No.: 011 309 3600

Fax No. : 011 309 3184

e-mail address: theophilus.rikhotso@debeersgroup.com

**ii) Expertise of the EAP.**

**(1) The qualifications of the EAP**

(with evidence). Theophilus T. Rikhotso holds a National Diploma in environmental Science from Tshwane University of Technology including various Environmental Management certificates such as Environmental Law for Environmental Managers, Environmental management system implementations include audits, ecological rehabilitation and mine closure, water quality monitoring and Environmental Impact Assessment: a practical approach.

**(2) Summary of the EAP's past experience.**

(In carrying out the Environmental Impact Assessment Procedure) Mr Rikhotso has 7 years of experience in the environmental management field ranging from environmental consulting, both opencast and underground coal mining including diamond exploration. From August 2013 Mr Rikhotso has been involved in the compilation of the De Beers RSA explorations' Environmental Management Programme (EMP) in terms of Prospecting Rights in terms of section 39 and of regulation 52 of the Mineral Petroleum Resource Development Act, 2002 (Act No. 28 of 2002) including Public participation and Environmental Management Programme Report Performance Assessment (EMPR PAR). While working for Anglo American Thermal Coal from 2009 to 2013 he has been involved in the implementation of Environmental Authorization conditions such as Water Use Licence conditions, EMPR conditions and commitments. He was also responsible for the development, implementation and maintenance of Environmental Management Systems for both underground and opencast coal operations. While in consulting in 2008 he has been involved in the compilation of Amendment Application for environmental authorization and drafting Background Information Documents for Gautrain Rapid Rail Link. He drafted the Molopo-Nosob River- Drafting Environmental Status Quo. Grotas - Evaluation of EMP and scoping reports for compliance with legislation. Chobe/Zambezi River- Drafting Newsletters, compilation of EMP for water pipeline which runs between Botswana, Namibia and South Africa. He was organizing Focus Group Meetings for interested and affected parties. Map work- Identification of properties that were not affected by the authorized alignment Gautrain Railway line, but affected by the horizontal and/or vertical re-alignment on plans and communicate the new impact and mitigation in terms of vibration and noise pollution to landowners.

**b) Location of the overall Activity.**

<b>Farm Name:</b>	Portion Of Remaining Extents Of Portions 3, 4 & 5, The Remaining Extent Of Farm Groenwater 453 And A Portion Of Portion 1 Of The Farm 472
<b>Application area (Ha)</b>	2933.8744
<b>Magisterial district:</b>	Z.F. Mgcawu District
<b>Distance and direction from nearest town</b>	17 km east of Postmasburg
<b>21 digit Surveyor General Code for each farm portion</b>	Remaining Extent Of Portion 3 of the Farm Groenwater: C03100000000045300003 Remaining Extent Of Portion 4 of the Farm Groenwater: C03100000000045300004 Remaining Extent Of Portion 5 of the Farm Groenwater: C03100000000045300005 Remaining Extent Of Farm Groenwater 453: C03100000000045300000 Portion 1 Of The Farm 472: C03100000000047200001

**c) Locality map**

(show nearest town, scale not smaller than 1:250000).

Inserted.

**d) Description of the scope of the proposed overall activity.**

Provide a plan drawn to a scale acceptable to the competent authority but not less than 1: 10 000 that shows the location, and area (hectares) of all the aforesaid main and listed activities, and infrastructure to be placed on site

Prospecting for kimberlite is a dynamic and result-driven operation which proceeds in phases, the outcome of which cannot be predicted or predetermined. The programme could be stopped at any stage during the prospecting operation if the results are negative or non-economical. Prospecting activities to be undertaken include noninvasive (e.g. desktop studies and ground geophysical surveys) and invasive (e.g. drilling) techniques.

The environmental footprint of drilling is limited to less than 0.64 Ha per site and the activities carried out will only require the clearing of shrubs and grass.

Drilling water requirements fall within the “small industrial user” where the use is less than twenty cubic metres per day for prospecting. Therefore the water that will be used for the prospecting activities will be sourced on agreement from an existing authorized water user which could be either the land owner or local municipality. No water will be abstracted in terms of section 21(a) of National Water Act, 1998 (Act no. 36

of 1998). Drilling may take a few days to two months to complete per site depending on the geology of the area, technical challenges and other factors.

**(i) Listed and specified activities**

<b>NAME OF ACTIVITY</b> (E.g. For prospecting - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc...etc...etc  E.g. for mining;- excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.)	<b>Aerial extent of the Activity</b> <b>Ha or m<sup>2</sup></b>	<b>LISTED ACTIVITY</b> <b>Mark with an X where applicable or affected.</b>	<b>APPLICABLE LISTING NOTICE</b> <b>(GNR 544, GNR 545 or GNR 546)</b>
Prospecting Right Application		X	GN983 Activity 20
Desktop studies, Further feasibility study investigations and mineral resource estimation			Not listed
Drilling Programme - incl. Core drilling and Large diameter drilling	0.64 Ha/site	X	GN983 Activity 20
Water required for both drilling and potable requirements			Not listed
Sanitation requirements (Chemical toilets)			Not listed
Geological mapping and Geophysical surveying	100 Ha/site		Not listed

**(ii) Description of the activities to be undertaken**

(Describe Methodology or technology to be employed, including the type of commodity to be prospected/mined and for a linear activity, a description of the route of the activity)

Diamonds are hosted in volcanic rocks called kimberlites. Kimberlite occur as either carrot-shaped pipes or dykes and sills. Geological mapping of possible areas of interest is carried out in conjunction with ground geophysical surveys. Geophysical methods, particularly magnetic properties and density contrasts of rocks will be used to detect potential kimberlites. The results from this work will be interpreted and used to plan follow-up drilling campaigns.

Any rocks that are suspected to be kimberlitic will be collected for petrographic studies. The samples will be collected manually by using geological hammers and would not exceed 2kg in mass.

If the prospecting techniques above indicate that there are kimberlites on the property, small diameter drilling will be conducted to test for their presence and economic potential. Boreholes will be sited on a practical basis, in consultation with the land owner.

Core drilling will be carried out on geophysical anomalies to test for the presence of kimberlite. The holes may be vertical or inclined, usually at a maximum angle of 60 degrees to horizontal. The borehole depth will be determined by the geologist and will depend on the type of anomaly and geological conditions, including overburden. The diameter of core drilled doesn't usually exceed 120mm and it is determined by factors such as cost, proposed core sampling and purpose. Core holes might also be used as pilot holes for large diameter drilling holes. Core holes allow more accurate determination of geology of the kimberlite.

The large diameter (17 inches or 23 inches) drilling for sampling in phases 5 and 6 depends on the result of phases 3 and 4. Sampling is conducted using a truck-mounted hydraulic surface drill rig with supporting equipment including an air compressor (stand-alone or on-board), water bowser, diesel bowser, equipment truck, cyclone and shaker screens. The technique employed is direct mud circulation followed by reverse-flood airlift-assist (RFALA) after casing installation.



**e) Policy and Legislative Context**

<p><b>APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT</b>                      (a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)</p>	<p><b>REFERENCE WHERE APPLIED</b></p>	<p><b>HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT.</b>                       (E.g. In terms of the National Water Act a Water Use License has/ has not been applied for)</p>
<p>National Environmental Management Act, No 107 of 1998 (as amended) (NEMA)                      Listing Activity 20 of Listing Notice 1 in terms of Regulation 983 of 2014</p>	<p>Prospecting activities</p>	<p>An Environmental Authorisation application has been lodged and shall be accompanied by supporting Basic Assessment Report and Environmental Management Programme Report</p>
<p>Mineral and Petroleum Resource Development Act 28 of 2002 as amended section 16</p>	<p>Prospecting activities</p>	<p>An Environmental Authorisation application has been lodged together with the Prospecting Work Programme. A Basic Assessment Report and the Environmental Management Programme including the results of the public participation process will be submitted.</p>
<p>National Heritage Resources Act Section 36</p>	<p>Prospecting activities</p>	<p>Prior to any invasive activities (such as drilling) being conducted on the proposed property a specialist shall be appointed to conduct a Heritage Impact Assessment in order to ensure that both actual and potential heritage impacts are identified and avoided, where they cannot altogether be avoided minimised and mitigated.</p>
<p>National Water Act 36 of 1998</p>	<p>Prospecting activities</p>	<p>Section 21 of the National Water Act, No 36 of 1998 is not applicable as exploration activities is classified as “small</p>

		industrial user” and the water requirements shall be fulfilled through municipal supply or an agreement with an existing water user.

**f) Need and desirability of the proposed activities.**

(Motivate the need and desirability of the proposed development including the need and desirability of the activity in the context of the preferred location).

The aim of the prospecting activity is to locate and evaluate diamond deposits hosted in or derived from kimberlite, which as an igneous rock that can theoretically be found within any other older host rocks. As the peak ages of kimberlite intrusion in central South Africa were at roughly 120 Ma and 90 Ma. Economic kimberlites have been proven to only occur within ancient (Archean Age: >2500 million years old). The area applied for falls within the Kaapvaal Craton which is one of those high potential location for economic diamond deposits.

Kimberley, approximately 140km to the south east is where kimberlites were first recognized as the source rock for diamonds and from where the name is derived. Numerous kimberlites, including the diamond alluvial fields, are thus found in quite close proximity to the area applied for.

**g) Motivation for the overall preferred site, activities and technology alternative.**

Kimberlites typically occur as clusters within larger kimberlite fields. The area applied for is located west of Finsch kimberlite cluster and is therefore the locality is considered highly prospective.

Geophysical methods and follow-up drilling have been proven very useful in detecting potential kimberlite targets and they will therefore be used to identify optimal locations of potential bodies of economic interest within the prospecting area.

**h) Full description of the process followed to reach the proposed preferred alternatives within the site.**

NB!! – This section is about the determination of the specific site layout and the location of infrastructure and activities on site, having taken into consideration the issues raised by interested and affected parties, and the consideration of alternatives to the initially proposed site layout.

**i) Details of the development footprint alternatives considered.**

With reference to the site plan provided as Appendix 4 and the location of the individual activities on site, provide details of the alternatives considered with respect to:

- (a) the property on which or location where it is proposed to undertake the activity;
- (b) the type of activity to be undertaken;
- (c) the design or layout of the activity;
- (d) the technology to be used in the activity;
- (e) the operational aspects of the activity; and
- (f) the option of not implementing the activity.

Impact of geoscientific knowledge

Should the prospecting activities not be conducted there's no way of determining whether or not diamondiferous kimberlites occurs in the proposed property.

#### Alternatives for the location

Site alternatives with respect to economic deposit are not possible as the location of potential targets is driven by geological processes.

#### Methods and techniques

The method and techniques employed for the investigation of potential targets and deposits are suitable for the proposed prospecting activities.

#### Alternative to operational aspects of prospecting activities

Alternative time frames can be made to ensure that the impact on the day to day running of the inherent land use are minimise for example drilling on cultivated land can be rescheduled post harvesting. Prospecting activities will be conducted during daylight hours to minimize exposure to the risks

#### Alternative layout for prospecting activities

Alternative site layout is considered to ensure that resting place and ablution facilities are located away from the drilling activities to minimise the noise impacts. Site establishment are done with closure in mind to ensure that only the required size is disturbed.

#### Socio-economic impacts

Should the prospecting not proceed opportunities of discovering new potentially economic diamond deposits will be missed and this will have direct impact on economic development of the region, local employment and will compromise any potential poverty alleviation efforts.

## **ii) Details of the Public Participation Process Followed**

Describe the process undertaken to consult interested and affected parties including public meetings and one on one consultation. NB the affected parties must be specifically consulted regardless of whether or not they attended public meetings. (Information to be provided to affected parties must include sufficient detail of the intended operation to enable them to assess what impact the activities will have on them or on the use of their land.

A letter of invitation is sent to all identified Interested and Affected Parties (I&APs), where I&APs are requested to confirm public participation meeting attendance and/or comment on the application for prospecting. The invitation letter sent to surface land owner include short questionnaires with question such as current land use, any known presence of protected animals and plant species including but not limited to heritage sites or artefacts. Site notices and/or flyers are distributed to the community or public areas in conjunction with invitation of relevant authority such as councils, chiefs and other commenting authorities. A newspaper advertisement is also made for the public participation meeting. During the Public Participation meeting a presentation on the project background, activities to be undertaken including associated environmental impacts and various mitigation measures put in place are discussed. All I&APs are given an opportunity to raise their concerns or raise questions. A public participation report is then drafted using all received comments and the minutes from the public participation meeting included as part of this application.



iii) **Summary of issues raised by I&Aps**  
 (Complete the table summarising comments and issues raised, and reaction to those responses)

Interested and Affected Parties		Date	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
List the names of persons consulted in this column, and Mark with an <b>X</b> where those who must be consulted were in fact consulted.		Comments Received			
<b><u>AFFECTED PARTIES</u></b>					
Landowner/s	<b>X</b>				
Lawful occupier/s of the land					
Landowners or lawful occupiers on adjacent properties	<b>X</b>				
Municipal councillor	<b>X</b>				
Municipality	<b>X</b>				
Organs of state (Responsible for infrastructure that may be affected Roads Department,					

<b>Eskom, Telkom, DWA e</b>					
<b>Communities</b>					
<b>Dept. Land Affairs</b>					
<b>Traditional Leaders</b>					
<b>Dept. Environmental Affairs</b>					
<b>Other Competent Authorities affected</b>					
<b><u>OTHER AFFECTED PARTIES</u></b>					
<b><u>INTERESTED PARTIES</u></b>					







**iv) The Environmental attributes associated with the alternatives.(The environmental attributed described must include socio-economic, social, heritage, cultural, geographical, physical and biological aspects)**

**(1) Baseline Environment**

**(a) Type of environment affected by the proposed activity.**

(its current geographical, physical, biological, socio- economic, and cultural character).

To be completed after the Public Participation process to ensure valid information is captured and submitted.

**(b) Description of the current land uses.**

To be completed after the Public Participation process to ensure valid information is captured and submitted.

**(c) Description of specific environmental features and infrastructure on the site.**

To be completed after the Public Participation process to ensure valid information is captured and submitted.

**(d) Environmental and current land use map.**

(Show all environmental, and current land use features)

To be completed after the Public Participation process to ensure valid information is captured and submitted.

**v) Impacts and risks identified including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts**

(Provide a list of the potential impacts identified of the activities described in the initial site layout that will be undertaken, as informed by both the typical known impacts of such activities, and as informed by the consultations with affected parties together with the significance, probability, and duration of the impacts. Please indicate the extent to which they can be reversed, the extent to which they may cause irreplaceable loss of resources, and can be avoided, managed or mitigated).

Phase 1 – desktop study has no impacts on the environment under application.

Phase 2 – Ground geophysical surveys are conducted by trained teams in the field. It involves measuring rock properties using highly-specialised equipment. This activity does not involve digging, damaging, excavation or destruction of the environment or bedrock. Potential impacts on this phase are soil, water and vegetation due to vehicle traffic when accessing the site. Potential for veld fires impacts on vegetation and may be caused by vehicles, lightning or other accidental causes. These are not rated as significant and will be minimal during this phase. There is no need to relocate farm animals or game during this phase so impact on grazing land and livestock is nil.

Phases 3-6 – Drilling comprises the main activity during these phases. Potential environmental impacts are on soil, water, habitat, livestock/game, grazing land and vegetation.

Oil/hydrocarbon spillage contaminates the soil and has potential to contaminate groundwater and this can be detrimental to the agricultural activities in the region. The significance has been assessed as low due to measures put in place to mitigate events of spillage. Spill kits will be kept on site and inspected regularly and potential leaks from, the rig and supporting equipment are contained by placing drip trays and heavy plastic bunding underneath.

Potential for soil erosion due to increased use of farm tracks by vehicles will be promoted. Where applicable, measures to mitigate soil erosion will be put in place. Dust suppression measures may be put in place where this might be a problem for farm residents and/or domestic animals.

Potential veld fire hazards impact on vegetation (including crops), grazing land, livestock/game, reptiles, birds and habitat. Trained fire fighters and regularly-serviced and inspected fire extinguishers are always available on site to mitigate the risk of an outbreak at the drill site.

Dust and noise will be generated but will be fairly minor. Noise is restricted to the area around the drill site and brief periods when vehicles travel through the farm when accessing or leaving the site. Livestock/game is relocated temporarily for the duration of the drilling operations to minimize impact.

Although these impacts are not individually rated as significant, their cumulative impact on vegetation at the specific site(s) and on the state of access tracks could be considered significant.

**vi) Methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks;**

(Describe how the significance, probability, and duration of the aforesaid identified impacts that were identified through the consultation process was determined in order to decide the extent to which the initial site layout needs revision).

Anglo American 5x5 Risk Matrix is a systematic methodology that has been adopted to evaluate the risk of each respective impacts/unwanted event. The risk of each impacts/unwanted events is determined for Safety, health and Environment.

Baseline risk assessment is conducted per each prospecting area. The environmental potential impacts are identified and risks are categorized into low, medium, significance and high. Anglo American has adopted a ranking approach from 1 to 25, meaning there are unique

Risk Numbers for each risk rated as follows;

Low: 1 -5: Medium: 6 to 12: Significant: 12 to 20 and high: 21 to 25.

The assessment is based on the identification of activities conducted on the property; the determination of what impacts may result from these activities (on different aspects of the environment).

The fundamental principle of Risk Matrices is to recognise that, it is simply a tool to prioritise risks and the actions required to manage the risk to an acceptable level. It is a risk ranking tool that provides a qualitative means to determine the significance of risks and the required effort to address priorities in addressing the risk.

Two Main factors that are considered during the risk rating are:

- Likelihood: chance/probability that the risk will occur within a time period
- Consequence: The impact the risk will have, should it materialise

Other factors include but not limited to following:

- For Pollution impacts – Toxicity, Volume and nature of the substance in question.
- For habitat disturbance – sensitivity of the habitat, the size of the area affected and the ability of the environment to rehabilitate (Assimilative capacity).
- For biodiversity impact – red data rating of the species and the range of the species
- For resource use – amount of resource used, resource availability and whether it is renewable or not;
- Legal requirements

Prospecting activities are audited on regular bases as part of the Environmental Management System (EMS) audits to ensure compliance with the requirements of the ISO14001 standard. Both internal and external audits are being conducted regularly.

**vii) The positive and negative impacts that the proposed activity (in terms of the initial site layout) and alternatives will have on the environment and the community that may be affected.**

(Provide a discussion in terms of advantages and disadvantages of the initial site layout compared to alternative layout options to accommodate concerns raised by affected parties)

To be completed after the Public Participation process.

**viii) The possible mitigation measures that could be applied and the level of risk.**

(With regard to the issues and concerns raised by affected parties provide a list of the issues raised and an assessment/ discussion of the mitigations or site layout alternatives available to accommodate or address their concerns, together with an assessment of the impacts or risks associated with the mitigation or alternatives considered).

To be completed after the Public Participation process

**ix) Motivation where no alternative sites were considered.**

To be completed after the Public Participation process

**x) Statement motivating the alternative development location within the overall site. (Provide a statement motivating the final site layout that is proposed)**

To be completed after the Public Participation process.

**i) Full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site (In respect of the final site layout plan) through the life of the activity. (Including (i) a description of all environmental issues and risks that were identified during the environmental impact assessment process and (ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures.)**

To be completed after consolidation of the results from the Public Participation process.



**j) Assessment of each identified potentially significant impact and risk**

(This section of the report must consider all the known typical impacts of each of the activities (including those that could or should have been identified by knowledgeable persons) and not only those that were raised by registered interested and affected parties).

<b>NAME OF ACTIVITY</b>  (E.g. For prospecting - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc...etc...etc  E.g. For mining,- excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.)	<b>POTENTIAL IMPACT</b>  (Including the potential impacts for cumulative impacts)  (e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	<b>ASPECTS AFFECTED</b>	<b>PHASE</b>  In which impact is anticipated  (e.g. Construction, commissioning, operational Decommissioning, closure, post-closure)	<b>SIGNIFICANCE if not mitigated</b>	<b>MITIGATION TYPE</b>  (modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)  E.g. Modify through alternative method. Control through noise control Control through management and monitoring through rehabilitation..	<b>SIGNIFICANCE if mitigated</b>

The supporting impact assessment conducted by the EAP must be attached as an appendix, marked **Appendix**



**k) Summary of specialist reports.**

(This summary must be completed if any specialist reports informed the impact assessment and final site layout process and must be in the following tabular form):-

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.
Heritage Impact Assessment (HIA)	To be initiated prior to undertaking any invasive activities to ensure that damage to heritage artefacts and sites including graves is avoided. Where it cannot altogether be avoided shall be minimized and mitigated.. SAHRA has been notified of the current application.		

Attach copies of Specialist Reports as appendices





**l) Environmental impact statement**

**(i) Summary of the key findings of the environmental impact assessment;**

Initial assessment to be compiled after a site visit. A final assessment report incorporating the Specialist's report will be compiled prior to conducting any invasive activities.

**(ii) Final Site Map**

Provide a map at an appropriate scale which superimposes the proposed overall activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers. Attach as **Appendix**

To be compiled after the site visit. Any potential updates from the Specialist's report will be incorporated prior to invasive activities.

**(iii) Summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;**

To be compiled after the public participation process and site visits.

**m) Proposed impact management objectives and the impact management outcomes for inclusion in the EMPr;**

Based on the assessment and where applicable the recommendations from specialist reports, the recording of proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr as well as for inclusion as conditions of authorisation.

To be compiled after the public participation process and site visits.

**n) Aspects for inclusion as conditions of Authorisation.**

Any aspects which must be made conditions of the Environmental Authorisation

To be compiled after the public participation process and site visits.

**o) Description of any assumptions, uncertainties and gaps in knowledge.**

(Which relate to the assessment and mitigation measures proposed)

To be compiled after the public participation process and site visits.

**p) Reasoned opinion as to whether the proposed activity should or should not be authorised**

**i) Reasons why the activity should be authorized or not.**

To be compiled after the public participation process and site visits.

**ii) Conditions that must be included in the authorisation**

To be compiled after the public participation process and site visits.

**q) Period for which the Environmental Authorisation is required.**

For the tenure of the prospecting right

**r) Undertaking**

Confirm that the undertaking required to meet the requirements of this section is provided at the end of the EMPr and is applicable to both the Basic assessment report and the Environmental Management Programme report.

**s) Financial Provision**

State the amount that is required to both manage and rehabilitate the environment in respect of rehabilitation.

**i) Explain how the aforesaid amount was derived.**

Initial calculations of R177 757 and shall be amended based on the outcomes of the Public participation process.

**ii) Confirm that this amount can be provided for from operating expenditure.**

(Confirm that the amount, is anticipated to be an operating cost and is provided for as such in the Mining work programme, Financial and Technical Competence Report or Prospecting Work Programme as the case may be).

The amounts stated in the work programme include the above costs of such rehabilitation work as part of each phase of work. The approach taken is to include such rehabilitation and the cost thereof as part of the planned work and thus as part of the budget submitted.

**t) Specific Information required by the competent Authority**

**i) Compliance with the provisions of sections 24(4)(a) and (b) read with section 24 (3) (a) and (7) of the National Environmental Management Act (Act 107 of 1998). the EIA report must include the:-**

**(1) Impact on the socio-economic conditions of any directly affected**

**person.** (Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any directly affected person including the landowner, lawful occupier, or, where applicable, potential beneficiaries of any land restitution claim, attach the investigation report as an **Appendix** .

The area under application is privately-owned and is not communal land. However, farm workers together with their families and owners including their families are considered communities in their respective farms. It is not expected that the prospecting activities will disrupt or negatively impact these individuals and no relocation will be necessary. However, during Phases 3-6, with agreement of the farm owner it may be necessary to relocate some livestock from the grazing enclosure to the next for the duration of drilling activities. Surface use agreements are put in place for these phases and the farm owner is duly compensated by De Beers for the inconvenience. De Beers does not interfere in the relationships between farmers and farm workers. However, any concerns regarding prospecting activities raised by either of the parties are promptly addressed by the project management on site to find an amicable solution. Input from the Public Participation process will be incorporated into this assessment.

**(2) Impact on any national estate referred to in section 3(2) of the National Heritage Resources Act.** (Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any national estate referred to in section 3(2) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) with the exception of the national estate contemplated in section 3(2)(j)(vi) and (vii) of that Act, attach the investigation report as **Appendix 2.19.2** and confirm that the applicable mitigation is reflected in 2.5.3; 2.11.6.and 2.12.herein).

To be compiled after the public participation process and site visits. Additional input may be incorporated from the Specialist's report.

**u) Other matters required in terms of sections 24(4)(a) and (b) of the Act.**

(the EAP managing the application must provide the competent authority with detailed, written proof of an investigation as required by section 24(4)(b)(i) of the Act and motivation if no reasonable or feasible alternatives, as contemplated in sub-regulation 22(2)(h), exist. The EAP must attach such motivation as **Appendix 4**).

To be compiled after the public participation process and site visits.



# PART B

## ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

### 1) Draft environmental management programme.

- a) **Details of the EAP**, (Confirm that the requirement for the provision of the details and expertise of the EAP are already included in PART A, section 1(a) herein as required).

This document has been compiled by an internal EAP and shall be peer-reviewed by an independent EAP.

- b) **Description of the Aspects of the Activity** (Confirm that the requirement to describe the aspects of the activity that are covered by the draft environmental management programme is already included in PART A, section (1)(h) herein as required).

c) **Composite Map**

(Provide a map (**Attached as an Appendix**) at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffers)

d) **Description of Impact management objectives including management statements**

- i) **Determination of closure objectives.** (ensure that the closure objectives are informed by the type of environment described)

The closure objective is to ensure that the rehabilitated area is re-vegetated, safe, stable, non-polluting, non-eroded and in a state that is suitable for agreed post-closure land use.

- ii) **Volumes and rate of water use required for the operation.**

5, 000L-10, 000L per day during drilling activities

- iii) **Has a water use licence has been applied for?**





### e) Impact Management Outcomes

(A description of impact management outcomes, identifying the standard of impact management required for the aspects contemplated in paragraph ());

<b>ACTIVITY</b> (whether listed or not listed).  (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).	<b>POTENTIAL IMPACT</b>  (e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	<b>ASPECTS AFFECTED</b>	<b>PHASE</b> In which impact is anticipated  (e.g. Construction, commissioning, operational Decommissioning, closure, post-closure)	<b>MITIGATION TYPE</b>  (modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)  E.g. <ul style="list-style-type: none"> <li>• Modify through alternative method.</li> <li>• Control through noise control</li> <li>• Control through management and monitoring</li> <li>• Remedy through rehabilitation..</li> </ul>	<b>STANDARD TO BE ACHIEVED</b>  (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
Site Clearance	Disturbance of fauna and flora	Flora and fauna	Construction	Limit footprint of activities	Comply with the rehabilitation procedure
Site Clearance/Drilling/Site	Dust Soil erosion	Drillsite personnel  Soil	Construction/Operational/Decommissioning	Dust suppression and PPE No removal of roots, only clearing of brush	Comply with the rehabilitation and drilling procedure
Site Clearance	Field fires	Flora and fauna	Construction	Demarcated smokin areas, establish a fire break	Comply with the drilling procedure
Site clearance/Drilling	Water and	Waer and	Construction/Operational	Store chemicals on	Comply with



	soil contamination	soil		bunding, ensure that spil kits are readily available, use plastic lining to prevent conatmination	the drilling procedure
Drilling	Noise	Drillsite personnel	Operational	Noise control measures: Prospecting is mostly restricted to daylight hours so noise will be limited to these periods. Excessive noise is only expected at or near the drill rig. Proper hearing protection for all the employees and visitors will be provided to mitigate this risk. Noise control measurements are also taken at the drillsite to determine the level of noise exoposre at the drillsite	In any working area where the noise levels are above 82 decibels (De Beers standard) ear protection must be worn.
	Groundwater contamination	Water		During drilling activities water strike depth is noted and any significant changes in water volumes are	A material data safety sheet(MDSS) for all drillsite additives is made available

				<p>recorded. Plugging of the hole will be investigated as an option in the case where drilling goes through an aquifer. Moreover, during the more extensive drilling in Phases 4-6 water quality may be monitored to mitigate contamination of groundwater. Ground water pollution will be mitigated through the use of only environmentally-friendly drilling additives and the proper closing of boreholes on completion.</p>	<p>to control the potential hazards of the chemicals used.</p>
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### f) Impact Management Actions

(A description of impact management actions, identifying the manner in which the impact management objectives and outcomes contemplated in paragraphs (c) and (d) will be achieved).

<p><b>ACTIVITY</b> whether listed or not listed.</p> <p>(E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).</p>	<p><b>POTENTIAL IMPACT</b></p> <p>(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)</p>	<p><b>MITIGATION TYPE</b></p> <p>(modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)</p> <p>E.g.</p> <ul style="list-style-type: none"> <li>• Modify through alternative method.</li> <li>• Control through noise control</li> <li>• Control through management and monitoring</li> </ul> <p>Remedy through rehabilitation..</p>	<p><b>TIME PERIOD FOR IMPLEMENTATION</b></p> <p>Describe the time period when the measures in the environmental management programme must be implemented Measures must be implemented when required.</p> <p>With regard to Rehabilitation specifically this must take place at the earliest opportunity. .With regard to Rehabilitation, therefore state either:-..</p> <p>Upon cessation of the individual activity or.</p> <p>Upon the cessation of mining, bulk sampling or alluvial diamond prospecting as the case may be.</p>	<p><b>COMPLIANCE WITH STANDARDS</b></p> <p>(A description of how each of the recommendations in 2.11.6 read with 2.12 and 2.15.2 herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)</p>
<p>Site clearing</p>	<p>Noise</p>	<p>Drillsite personnel</p>		
<p>Drillholes</p>	<p>Noise</p>	<p>Drillsite personnel</p>	<p>Noise control measures: Prospecting is mostly restricted to daylight hours so noise will be limited to these periods. Excessive noise is only expected at or near the drill rig. Proper hearing protection for all the employees and visitors will be provided to mitigate this risk. Noise control measurements are</p>	<p>In any working area where the noise levels are above 82 decibels (DeBeers standard) ear protection must be worn.</p>

			also taken at the drillsite to determine the level of noise exoposre at the drillsite	
	Surface disturbance	Fauna & soil.		

**i) Financial Provision**

**(1) Determination of the amount of Financial Provision.**

**(a) Describe the closure objectives and the extent to which they have been aligned to the baseline environment described under the Regulation.**

The closure objectives is to ensure that the rehabilitated area is revegetated (and/or soil erosion measures), safe, stable, non-polluting, non eroded and in as state that is suitable for the existing land use.

**(b) Confirm specifically that the environmental objectives in relation to closure have been consulted with landowner and interested and affected parties.**

To be done after consultation meeting.

**(c) Provide a rehabilitation plan that describes and shows the scale and aerial extent of the main mining activities, including the anticipated mining area at the time of closure.**

The site establishment will be done with closure to minimise the rehabilitation requirements and to ensure rehabilitation success. The disturbed area covers a footprint of 0.16 and 0.46 for core drilling and percussion drilling respectively. All measures are put in place to ensure that disturbance is limited to the required site. On completion of drilling the site is cleared of drill chips and sump lining including rill mud are removed and disposed at a licenced landfill site. The sump area is profiled to mimic the adjacent area as per the soil profile i.e. overburden, subsoil and topsoil. The profiling takes into consideration natural subsidence. Compacted areas are loosened and leaves, rocks, branches and debris are spread evenly over the site to prevent erosion. The site is then monitored for and mitigation measures implemented as per the monitoring results until closure certificate is issued

**(d) Explain why it can be confirmed that the rehabilitation plan is compatible with the closure objectives.**

The site establishment will be done with closure to minimise the rehabilitation requirements and to ensure rehabilitation success. The disturbed area covers a footprint of 0.16 and 0.46 for core drilling and percussion drilling respectively. During closure it is ensured that the rehabilitated area is re-vegetated (and/or soil erosion measures), safe, stable, non-polluting, non-eroded and in a state that is suitable for the grazing and other existing land use

- (e) **Calculate and state the quantum of the financial provision required to manage and rehabilitate the environment in accordance with the applicable guideline.**

Rehabilitation costs are determined using quantum of the financial provision required to manage and rehabilitate the environment, in accordance with the guideline prescribed in terms of regulation 54 (1) in respect of each of the prospecting phases. Based on the description of the activities and the related master rates, the rehabilitation is R177 757.

- (f) **Confirm that the financial provision will be provided as determined.**

The required financial provision of R177,757 for phases 1 through 6 of the work programme, during the first two years of prospecting activities, will be provided in the form of a bank guarantee, through Standard Bank Kimberley, should this prospecting right be granted.






**l) Indicate the frequency of the submission of the performance assessment/ environmental audit report.**

Environmental Audits shall be conducted in terms of Regulation 34 of 2014 Environmental Impact Assessment R.982 .

**m) Environmental Awareness Plan**

**(1) Manner in which the applicant intends to inform his or her employees of any environmental risk which may result from their work.**

The is enforced through induction and daily toolbox discussions.The training comprises of the following:

- General induction to the environmental management system including the aspects and impacts register.
- Activity specific induction, based on procedures, including emergency response on spill handling (use of spill kits etc.).
- On site confirmation of these procedures, with demonstrations of requirements.
  - Periodic awareness sessions (toolbox talks) on safety, health and environmental topics.

**(2) Manner in which risks will be dealt with in order to avoid pollution or the degradation of the environment.**

All employees and contractors are inducted in the environmental management system, which explains the potential risks associated with the various prospecting activities. This is a requirement of the system itself (ISO 14001 certified). The material is provided in paper form but also discussed verbally to ensure clarity.

**n) Specific information required by the Competent Authority**

(Among others, confirm that the financial provision will be reviewed annually).

**2) UNDERTAKING**

The EAP herewith confirms

- a) the correctness of the information provided in the reports
- b) the inclusion of comments and inputs from stakeholders and I&APs ;

- c) the inclusion of inputs and recommendations from the specialist reports where relevant; and
- d) that the information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected. parties are correctly reflected herein.

The document cannot be signed at current state as it is in draft format and shall be updated based on the results of the site visit and public participation process.

\_\_\_\_\_  
Signature of the environmental assessment practitioner:

DeBeers Consolidated Mines Proprietary Limited

\_\_\_\_\_  
Name of company:

\_\_\_\_\_  
Date:

**-END-**