mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

ENVIRONMENTAL IMPACT 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: Jagersfontein Developments (Pty) Ltd

TEL NO: 018 297 2090

FAX NO: 018 297 2083

POSTAL ADDRESS: P.O. Box 24, Jagersfontein, 9974

PHYSICAL ADDRESS: Jagersfontein Diamond Extraction Operations, Jagersfontein

FILE REFERENCE NUMBER SAMRAD: FS 30/5/1/1/3/2/1 (10505)EM

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 ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

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

(a) determine the policy and legislative context within which the activity is located and document how the proposed activity complies with and responds to the policy and legislative context;

(b) describe the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location;

(c) identify the location of the development footprint within the preferred site based on an impact and risk assessment process inclusive of cumulative impacts and a ranking process of all the identified development footprint alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects of the environment;

(d) determine the—-

  (i) nature, significance, consequence, extent, duration and probability of the impacts occurring to inform identified preferred alternatives; and

  (ii) degree to which these impacts—

    (aa) can be reversed;

    (bb) may cause irreplaceable loss of resources, and

    (cc) can be avoided, managed or mitigated;

(e) identify the most ideal location for the activity within the preferred site based on the lowest level of environmental sensitivity identified during the assessment;

(f) identify, assess, and rank the impacts the activity will impose on the preferred location through the life of the activity;

(g) identify suitable measures to manage, avoid or mitigate identified impacts; and

(h) identify residual risks that need to be managed and monitored.

PART A

SCOPE OF ASSSSMENT AND ENVIRONMENTAL IMPACT ASSESSMENT REPORT

3. Contact Person and correspondence address

a) Details of

i) Details of the EAP

Name of The Practitioner: Louis De Villiers (Turn 180 Environmental Consultantds)

Tel No.: 072 967 7962

Fax No. : N/A

e-mail address: louis@turn180.co.za

ii) Expertise of the EAP.

(1) **The qualifications of the EAP**
(with evidence).
B.sc. degree in Environmental Geography - Refer to CV in Appendix 1

(2) **Summary of the EAP's past experience**.
(In carrying out the Environmental Impact Assessment Procedure)
Refer to CV in Appendix 1

b) Description of the property.

Farm Name:	Remainder, portion 1 and portion 16 of the farm Jagersfontein 14
Application area (Ha)	3853.78 ha
Magisterial district:	Fauresmith
Distance and direction from nearest town	The application area is located directly adjacent to the town of Jagersfontein
21 digit Surveyor General Code for each farm portion	F01100000000001400016 F01100000000001400001 F01100000000001400000

c) Locality map
(show nearest town, scale not smaller than 1:250000). Attached as Appendix 2

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

Refer to Appendix 2

(i) Listed and specified activities

NAME OF ACTIVITY (All activities including activities 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.)**	**Aerial extent of the Activity** **Ha or m²**	**LISTED ACTIVITY** **Mark with an X where applicable or affected.**	**APPLICABLE LISTING NOTICE (*GNR 544, GNR 545 or GNR 546)/NOT LISTED***
Application for a prospecting right: The prospecting carried out by Jagersfontein Development (PTY) Ltd ("the Applicant") will involve the drilling of boreholes, trenching and bulk sampling over the entire property to prospect for minerals. It is expected that approximately 100 boreholes will be drilled over the entire area to prospect for minerals and trenches will be made to sample between 30 000 - 40 000 Tons/trench. It is however very difficult to indicate where the trenching and bulk sampling will occur as this will be de dependent on the drilling. Listed activity 19 of GN. R. 325 of the 2014 EIA Regulations as amended on 7 April 2017 under the National Environmental Management Act 107 of 1998 ("NEMA") is hereby applied for and reads as follows: "The removal and disposal of minerals contemplated in terms of section 20 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including (a) associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource; or (b) the primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing; but excluding the secondary processing of a mineral resource, including the	3853.78ha Although this is the entire prospecting area it will only involve the drilling of approximately 100 boreholes and, depending on the results of the samples of the boreholes, will result in trenching/pitting. Trenches will be made to remove between 30 000 - 40 000 tons/trench. Trenches will be made to a width of 4m X7m deep. The length of the trench will be approximately 14m. However, trenches may be wider (i.e. 14m wide) and longer for better sampling.	Activity 19 of GN R. 325 (Refer to description in column 1)	GNR 325

smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource in which case activity 6 in this Notice applies." Listed activity 20 and 27 of GN. R. 327 of the 2017 EIA Regulations under the NEMA is also applied for and reads: Activity 20: "Any activity including the operation of that activity which requires a prospecting right in terms of section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including; (a) associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource; or (b) the primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing; but excluding the secondary processing of a mineral resource, including the smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource in which case activity 6 in Listing Notice 2 applies." Activity 27: "The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan." The overall activities associated with the prospecting right will include the following: 1) Desktop studies and geological interpretation of all available geological data including any historic soil sampling data and any airborne geophysical and remote sensing data. 2) Target detection by means of geophysical surveying. 3) Desktop studies involving interpretation of the geophysical survey results in order to plan the next phase of work in detail.			

4) Testing of targets a) First state small diameter (up to 165mm) percussion exploratory drilling and/or minor pitting and/or minor trenching, aimed at testing targets identified as being of interest, with the aim of proving the presence of kimberlite. b) Processing of drill or rock samples for the various types of test as required, such as petrography and physical roc properties. 5) Desktop studies involving interpretation of the initial drilling (or excavations) and testing in order to plan the next phase of work in detail. 6) Delineation and initial testing of kimberlite(s). a) Detailed geophysical surveys over kimberlites, for delineation and borehole positioning purposes. This would be conducted using a variety of survey techniques such as magnetometry, electromagnetic methods and gravity. b) Second stage small diameter (up to 165mm) percussion and core drilling and/or excavations. Aimed at determining the extend of any kimberlite discovered and whether it has the potential to host diamonds. This involves collecting material for testing, such as further petrographic examination, HMA and MiDA. This stage could include downhole geophysical logging. c) Processing of drill samples for the various types of test as required. 7) Desktop studies involving interpretation of all drilling (or excavations) and test results, in conjunction with geophysical survey results, in order to plan the next phase of work in detail. Data available in this stage will be used to construct a Geological model to allow for size estimation. All the above, combined with the thickness of overburden, micro diamond analyses, petrographic interpretations and mineral chemistry analyses will be used to assess the potential of any discoveries and therefore justification of any further work. 8) Bulk sampling (initial evaluation) a) Carry out a bulk sampling programme to test for the presence of macro-			

diamonds. This may take the form of trenching or pitting or large diameter (up to 450mm) drilling. The number of excavations and/or boreholes and quantity of material to be collected will be based on the size of the kimberlite(s) and their internal geology such facies variations. b) Processing of macro-diamonds samples to obtain a concentrate for diamond sorting in a dense media separation (DMS) sampling plant. c) Recovery of macro-diamond from the concentrate to obtain an initial grade estimate at the diamond recovery laboratory in Johannesburg. 9) Based on a review of initial bulk sampling results and other information, the preliminary economic potential of the kimberlite(s) will be determined. Depending on the outcome of this, a larger bulk sampling exercise will be required to provide sufficient information for a pre-feasibility study. 10) Bulk sampling (evaluation sampling) a) Carry out a bulk sampling programme in order to determine the economic potential of any kimberlite(s) discovered. This may take the form of trenching or pitting or large diameter (up to 450mm) drilling. Again, the number of excavations and/or boreholes and quantity of material to be collected will be based on the size of the kimberlite(s) and their internal geology such as facies variations. This programme will determine the macro-diamond content and quality to evaluate the economic potential of any kimberlite(s) discovered. b) Processing of macro-diamond samples to obtain a concentrate for diamond sorting in a DMS sampling plant. c) Recovery of macro-diamonds from the concentrate and the classification of these diamonds (in terms of size and quality) at the diamond recovery laboratory in Johannesburg. 11) Pre-feasibility study. Based on a review of bulk sampling results and other information such as the geological model and geotechnical information, the mineral resource will be defined and a decision made as to further work required.			

12) Mining feasibility studies. Depending on the value of the estimated resource determined in Phase 15, a mining feasibility study may be conducted by a multidisciplinary team. This would include all relevant socio-economic and environmental impact studies, with the aim being to define mineral reserves and in support of an application for a mining right. 13) Supplementary drilling, sampling, geological modelling and more dressing studies may be required to obtain additional information in order to finalise the mining feasibility study.			

(ii) Description of the activities to be undertaken

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

1) Desktop studies and geological interpretation of all available geological data including any historic soil sampling data and any airborne geophysical and remote sensing data.

2) Target detection by means of geophysical surveying.

3) Desktop studies involving interpretation of the geophysical survey results in order to plan the next phase of work in detail.

4) Testing of targets

a) First state small diameter (up to 165mm) percussion exploratory drilling and/or minor pitting and/or minor trenching, aimed at testing targets identified as being of interest, with the aim of proving the presence of kimberlite.

b) Processing of drill or rock samples for the various types of test as required, such as petrography and physical rock properties.

5) Desktop studies involving interpretation of the initial drilling (or excavations) and testing in order to plan the next phase of work in detail.

6) Delineation and initial testing of kimberlite(s).

a) Detailed geophysical surveys over kimberlites, for delineation and borehole positioning purposes. This would be conducted using a variety of survey techniques such as magnetometry, electromagnetic methods and gravity.

b) Second stage small diameter (up to 165mm) percussion and core drilling and/or excavations. Aimed at determining the extend of any kimberlite discovered and whether it has the potential to host diamonds. This involves collecting material for testing, such as further petrographic examination, HMA and MiDA. This stage could include downhole geophysical logging.

c) Processing of drill samples for the various types of test as required.

7) Desktop studies involving interpretation of all drilling (or excavations) and test results, in conjunction with geophysical survey results, in order to plan the next phase of work in detail. Data available in this stage will be used to construct a Geological model to allow for size estimation. All the above, combined with the thickness of overburden, micro diamond analyses, petrographic interpretations and mineral chemistry analyses will be used to assess the potential of any discoveries and therefore justification of any further work.

8) Bulk sampling (initial evaluation)

a) Carry out a bulk sampling programme to test for the presence of macro-diamonds. This may take the form of trenching or pitting or large diameter (up to 450mm) drilling. The number of excavations and/or boreholes and quantity of material to be collected will be based on the size of the kimberlite(s) and their internal geology such facies variations.

b) Processing of macro-diamonds samples to obtain a concentrate for diamond sorting in a dense media separation (DMS) sampling plant.

c) Recovery of macro-diamond from the concentrate to obtain an initial grade estimate at the diamond recovery laboratory in Johannesburg.

9) Based on a review of initial bulk sampling results and other information, the preliminary economic potential of the kimberlite(s) will be determined. Depending on the outcome of this, a larger bulk sampling exercise will be required to provide sufficient information for a pre-feasibility study.

10) Bulk sampling (evaluation sampling)

a) Carry out a bulk sampling programme in order to determine the economic potential of any kimberlite(s) discovered. This may take the form of trenching or pitting or large diameter (up to 450mm) drilling. Again, the number of excavations and/or boreholes and quantity of material to be collected will be based on the size of the kimberlite(s) and their internal geology such as facies variations. This programme will determine the macro-diamond content and quality to evaluate the economic potential of any kimberlite(s) discovered.

b) Processing of macro-diamond samples to obtain a concentrate for diamond sorting in a DMS sampling plant.

c) Recovery of macro-diamonds from the concentrate and the classification of these diamonds (in terms of size and quality) at the diamond recovery laboratory in Johannesburg.

11) Pre-feasibility study. Based on a review of bulk sampling results and other information such as the geological model and geotechnical information, the mineral resource will be defined and a decision made as to further work required.

12) Mining feasibility studies. Depending on the value of the estimated resource determined in Phase 15, a mining feasibility study may be conducted by a multidisciplinary team. This would include all relevant socio-economic and environmental impact studies, with the aim being to define mineral reserves and in support of an application for a mining right.

13) Supplementary drilling, sampling, geological modelling and more dressing studies may be required to obtain additional information in order to finalise the mining feasibility study.

e) Policy and Legislative Context

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT (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);	**REFERENCE WHERE APPLIED** **(i.e. Where in this document has it been explained how the development complies with and responds to the legislation and policy context)**	**HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE POLICY AND LEGISLATIVE CONTEXT** **(E.g In terms of the National Water Act:- Water Use Liscence has/has not been applied for).**
National Environmental Management Act (Act 107 of 1998) 2014 Regulations as amended in 2017	Department of Mineral Resources	An application is made for the prospecting right. Regulations as indicated in GN R. 326 will be followed to obtain Environmental Authorisation.
National Water Act (Act 36 of 1998)	Department Water and Sanitation	Application made i.t.o. S21(c) and (i) if required.
Conservation of Agriculture Resources Act (Act 43 of 1993)	Department of Agriculture, Forestry and Fisheries	Notified of project. None
National Heritage Resources Act (Act 25 of 1999)	South African Heritage Resource Agency	Phase 1 HIA conducted
Occupational Health and Safety Act and Regulations (Act 85 of 1993)	Department of Labour	None (Implemented by contractor on site)
Minerals and Petroleum Resources Development Act (Act 28 of 2002)	Department of Mineral Resources	Environmental Authorization applied for
Restitution of Land Rights Act (Act 22 of 1994)	Department of Rural Development and Land Affairs	Request for land claims certificate

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).

Jagersfontein Developments (Pty) Ltd ("The Applicant") will perform the prospecting on the properties as indicated above to locate any remains of Kimberlite and/or gravel which may contain diamond which can be mined.

Although the prospecting for diamonds will not create a high number of job opportunities directly, the mining for diamonds if results of prospecting is positive will require additional people to be employed at the operation and will therefore create job opportunities.

The prospecting for diamonds will be undertaken by The Applicant whom also conducts the existing tailings operation at Jagersfontein and who contributes to the town and community by providing jobs to local residents and assisting in service delivery from time-to-time. The tailings operation and plant which will be used during prospecting will ensure that people from the local community will have jobs and will improve the socio-economic status in the community. Furthermore, the tailings operation make use of local products where possible or purchases products (i.e. building material and machine

and vehicle parts) from larger urban areas in the area (i.e. Bloemfontein and Kimberley) which has a positive economic impact on the region.

The prospecting of the diamonds at this stage will also ensure that, if any diamonds can be mined it can occur while the current tailings operation is in progress whereby the area can be rehabilitated more effectively for future land use.

g) Motivation for the preferred development footprint within the approved site including a full description of the process followed to reach the proposed development footprint within the approved 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.

The following should be considered in terms of the alternatives:

Due to the nature of the activities to be undertaken (i.e. prospecting for diamonds) the applicant is limited to the area where the minerals may potentially be located. This is based on desktop studies according to geological maps and existing data of the area. Therefore the applicant cannot identify any location alternatives as the properties and sites applied for are most likely to contain the mineral.

The activity is limited to the drilling of boreholes, trenching/pitting and bulk sampling. There are no alternatives to these activities as this is the only way to prospect for diamonds in order to locate the mineral to be mined.

Most of the prospecting will be conducted on areas where historic mining and/or disturbance during mining activities occurred and will also be limited to the areas where there is the highest potential to locate diamonds.

Technology to be used during prospecting is limited to the drilling of boreholes and excavations for trenching/pitting. This may also involve large diameter drilling to up to 450mm. The existing operation has an Dense Medium Separation (DMS) plant which will be used for the processing of the samples.

The option of not implementing the activity will result in the applicant not having the opportunity to prospect for diamonds on the properties. No further mining of diamonds will occur on the properties by the applicant which will result in job losses after completion of the current reprocessing of surface tailings. The applicant will remove all existing infrastructure after completion of the current activities and will rehabilitate the site.

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.

The following process was/will be undertaken during the Public Participation Process:

* Site notices were placed on the fence of the properties and on site to notify the public of the proposed prospecting,
* Advertisements were be placed in the Volksblad on 10 May 2018 and the Express on 16 May 2018,
* A Background Information Document (BID) was sent to all potential Interested and Affected Parties (I&AP) to notify them of the project and to request to submit comments and/or register as and I&AP. The Potential I&AP included the following:

Authorities:
- Me L.Y. Moletsane - Xhariep District Municipality Municipal Manager
- Mr. M. Kubeka - Kopanong Local Municipality Municipality Manager
- Ward 7 Ward Councillor - Kopanong Local Municipality
- Dr. Ntili - Department of Water and Sanitation
- Mr. Khomotso Mahlatji - Department of Rural Development and Land Reform
- Ms. G. Mkhosana - DESTEA
- Mr. J. Morton - Department of Agriculture
- Mr. A. Salomon - SAHRA
- Me. L. Philip - FSHA

Stakeholders and Neighbouring landowners:
- Mr. L. Dreyer - Farm Nebo 313
- Mr. P. Louw - Farms Rietkuil RE/21 and Commissiepoort 174
- Mr. D. Louw - Farm Vlakfontein 1/1173
- Mr. N. Booysen (JJ Van Niekerk Familie Trust) - Farm Preezfontein North 927 and Preezfontein RE/19
- Mr. M. Eksteen - Farm Vogelfontein 15
- Kopanong Local Municipality - Annex Preezfontein North 1063
- Mr. H. Hamman - Farm Mara 205
- Prospect Boerdery Trust (Mr. J. Van Tonder) - Farm Prospect 487
- Mr. J. Botha - Farm Thomas RE/678
- Mr. G. Snyman - Fars Rust en Vrede 1/393 and Thomas 1/678
- Mr. P. De Lange - Farm Waterval 329
- Mr. J Kolver - Farms Gamma 492 and Paardeplaat A 964
- Me. G. Vermaak - Itumeleng Community Trust
- Mr. S. Van Wyk - Farm 733

Comments received by I&AP was logged in a comments and response register and all completed reports were sent to them for review and commenting.

Please refer to Appendix 3 for the Public Participation Process and Comments and Response Report.

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 **List the names of persons consulted in this column, and** **Mark with an X where those who must be consulted were in fact consulted.**		**Date Comments Received**	**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.**
AFFECTED PARTIES					
Landowner/s					
Jagersfontein Developments (Pty) Ltd	X	No comments received	No issues raised	N/A	N/A
Kopanong Local Municipality	X	No comments received	No issues raised	N/A	N/A
Lawful occupier/s of the land					
Residents of Jagersfontein, Charlesville and Itumeleng	X (Site notices and adverts. Public meeting to be held)	No comments received	No issues raised	N/A	N/A
Landowners or lawful occupiers on adjacent properties					

Mr. M. Eksteen	X	15/5/2018	Requested confirmation that prospecting will not occur on his property.	Confirmation was sent to Mr. Eksteen that the prospecting right application does not include his property.	H(ii)
Mrs. G. Vermaak	X	9/5/2018	- Will further mining occur if prospecting results are positive, - If future mining occurs Mrs. Vermaak requested that the applicant should consider residing in town to contribute to value of properties and socio-economics of town, - What will the impact be on water resources.	- If results of prospecting is positive further mining will be considered. However, this decision will be made after investigation of other factors which will determine the feasibility of the mining. - It was confirmed that managerial staff resides at the tailings operation for safety reasons. If further mining will occur this issue will be discussed during the mining right application process. - There will not be an additional impact on the quality and quantity of water resources as the existing process plant will be used during the prospecting operations. Water Use License Applications will be made if prospecting activities will occur within watercourses.	H(ii)
Mr. J. Van Tonder	X	23/5/2018	- Requested information regarding the water monitoring and requested the previous results of the monitoring and that water should be analysed on his property to establish a baseline. - It was also requested that more details be given of how dust and noise will be mitigated.	- The water monitoring programme and intervals was discussed with Mr. Van Tonder and the latest results were sent to Mr. Van Tonder. It was confirmed that water from one of his boreholes closest to the boundary of the tailings operation will be sampled to establish a baseline. - The Final Scoping Report, and all future reports will have more clear mitigation of dust and noise.	H(ii)
Mr. J. Kolver	X	23/5/2018	Requested confirmation that prospecting will not occur on his property.	Confirmation was sent to Mr. Kolver that the prospecting right application does not include his property.	H(ii)
Municipal councillor	X	23/08/2018	The Ward Councillor requested a meeting	A notification was sent out inviting all I&AP and stakeholders to a public meeting.	I(ii)
Municipality	X	No comments received	No comments received	N/A	N/A
Organs of state (Responsible for infrastructure that may be affected Roads Department,					

Eskom, Telkom, DWA e					
Communities					
Meeting to be held					
Dept. Land Affairs	X	11/05/2018	Land claims certificate issued	N/A	N/A
Traditional Leaders					
Dept. Environmental Affairs	X	N/A	No comments received	N/A	N/A
Other Competent Authorities affected					
Department of Agriculture - Free STate	X	30/07/2018	Refered the project to the National Department of Agriculture, Forestry and Fisheries.	None	N/Abh
OTHER AFFECTED PARTIES					
INTERESTED PARTIES					

iv) The Environmental attributes associated with the development footprint 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).

* Geology and Soil

The farm Jagersfontein 14 is situated on the Karoo Supergroup. The geology is mainly of the Adelaide Subgroup of the Beauford Group in the northeast of the farm and the Tierberg Formation of the Ecca Group southwest. Both of these lithologies are intruded by an extensive Karoo dolerite sill. The Adelaide Subgroup is made up of blue-grey and purple mudstone inter-bedded with yellow sandstone and siltstone, mudstone and sandstone. The Tierberg Formation is made up of blue-grey to dark grey shale with carbonate concretions, subordinate sandstone and siltstone in the upper part.

Two soil types are common in this area. The Hutton soil is common in the north while the Tierberg soil is more common in the south. This prospecting area is on an existing old mine, extensively mined up to 1972.

* Climate

Historical rainfall data received from the DWS indicates the Mean Annual Precipitation ("MAP") to be approximately 439mm / annum (DWS, 2018) at the Kalkfontein Dam, located approximately 19km north of the proposed area. The Study Area is located in the C5B Rainfall Zone and the MAP is between 400 - 500mm/annum (WRC, 2005).

The study area is located in Evaporation Zone 19A and the Mean Annual Evaporation in this area is between 1 800 - 2 000mm/annum (WRC, 2005).

Please refer to the maps attached in Appendix 2 which indicates the climatic data of the area.

* Air Quality

The Jagersfontein area has, save for the Tailings Operation, no major industrial facilities with atmospheric emissions, the overall air quality is good. The surrounding area is mainly associated with agricultural activities.

A Dustfallout Monitoring Programme is implemented by the applicant for the current activities. The Programme will be implemented throughout the lifetime of the operation.

* Surface and groundwater

The geology of the Jagersfontein area consists mainly of sediments from the Karoo Supergroup. These are predominantly sandstone, shale and mudstones formations of the Dwyka-, Ecca- and Beuafort group, with intrusion of post Karoo dolerite sills and dykes along weak contact zones between different formations or fault zones.

The Karoo sediments are characterised by low permeability; groundwater movement mainly occurs along jointed and fractured zones caused by faults or on the contact zones with dolerite intrusions.

Based on the water levels of sources in the area (The Shaft and the boreholes) and the variability in water quality, it is evident that there are two aquifer systems in the study area. At the top is a shallow aquifer with a rest water level (water table level) of approximately 5m below ground level ("mbgl"). At the bottom is a deeper aquifer with a current drawdown water level at 379mbgl (6 August 2018) and a rest water level at approximately 160mbgl. The two aquifer systems are separated by an impermeable dolerite sill. This is based on early geological maps that indicate a dolerite sill from surface to depth of approximately 300m.

It is very likely that the dolerite sill is a major geological feature due to its thickness, the large area it covers over the Site and Operational Site and the important role it plays in the movement of groundwater in the study area.

The shallow aquifer will most probably be very recently recharged by rain water and will move along the weathered zone of the dolerite sill and / or fractures along the contact with the Karoo sediments that can be associated with the dolerite sill intrusion.

The aquifer systems are, to a large extent, independent of each other because of the impermeable sill that separates them. There may however be some isolated zones of connectivity between the two aquifer systems.

The surrounding groundwater users in the Jagersfontein Town abstract water from the shallow aquifer, as it is not feasible to drill boreholes to the depths required to abstract from the deeper aquifer. The shallow aquifer is not affected by the drawdown created in the deep aquifer. Abstraction from the deeper aquifer therefore has an insignificant impact on the shallow aquifer's water levels.

Jagersfontein is situated in the C51H quaternary drainage region of the Upper Orange Catchment.

The main surface water features on the Operational Site is Dam 10 with a capacity of 459 126m3; Loskop Dam with a capacity of 52 698m3; and the watercourse that drains into Dam 10. However, the watercourse draining to Dam 10 is mostly dry. However, almost the entire cathment of the seasonal stream drains into Dam 10 which essentially acts as a sediment trap (Van Rensburg, 2013).

* Land use

The land as indicated is used for the reprocessing of the surface tailings on it and forms part of the tailings operation and activities associated with it (i.e. ploughing, loading, transportaion of material, processing in the plant). The other areas include parts of the town of Jagersfontein. The area surrounding the tailings operation is mainly used for agriculture.

* Vegetation

The vegetation over the area consists of the Xhariep Karroid Grassland (Gh 3) and Besemkaree Koppies Shrubland (Gh 4) (Mucina Rutherford, 2006). The Xhariep Karroid Grassland (Gh 3) is confined to the plains on the site, which are characterised by a strong dominance of grass species and some dwarf karroid shrubs. Usually no trees and shrubs are found on the plains, but due to large portions of the plains being used to weather excavated kimberlite in the 19th century and due to the resulting kimberlite rubble, the vegetation has been altered. Therefore, these altered areas are now a suitable habitat for trees, large shrubs and dwarf shrubs. The Besemkaree Koppies Shrubland (Gh 4) is confined to the hills and ridges on the site and is characterised by a strong dominance of shrubs/small trees and grasses. a High diversity of herbs and dwarf shrubs can also be found on these hills and ridges. The highest concentration of these hills can be found in the western portion of the site. These hills contain vegetation that is distinct from that of the surrounding plains, due to the topography, hydrology, soil properties etc. of the hills. Therefore, these hills usually have a higher diversity, distinct species composition and are prominent visual landscape forms that are considered sensitive.

(Please refer to the attached Biodiversity Management Plan by Mr. D. Van Rensburg).

* Demographics

According to STATS SA (2011 census) the Jagersfontein population consists of 1 819 people, with 63.4% of that being people of working age (15-64). The young (0-14) constitutes 26.4% of the population and the elderly (65+) 10.2%. Black Africans constitute the largest population group in Jagersfontein (59.1%), followed by Coloured (22.5%), White (16.5%), Indian/Asian (0.7%) and Other (1.2%). The population of Jagersfontein includes the residents in Charlesville (490 residents) and the people residing on the Operational Site (40 people). There are 3, 910 people residing in Itumeleng.

(b) Description of the current land uses.

The land is currently used for activities associated with the diamond reprocessing operation where surface tailings are transported from the surface tailings dumps, left during historic mining activities, to the process plant for reprocessing to extract the diamonds from the tailings. Parts of the land on which the tailings operation is located is used for grazing of cattle and small game (i.e. antilope). Portion 1 and Portion 16 and a portion of the Remainder which forms part of the tailings operation has been disturbed as a result of the historical diamond mining activities and the current tailings operation and is only used for activities associated with the tailings operation. It is only the northern and western parts of portion 16 where

the environment has not been extensively disturbed during historicl mining activities and the tailings operation, although some impacts have occurred on these parts.
The towns of Jagersfontein, Charlesville and Itumeleng are located adjacent to the tailings operation on the Remainder of Jagersfontein 14. These towns includes all structures and infrastructure associated with a town including, but not limited to roads, sewage system, houses, shops and other businesses, a hospital, police station, schools, churges and other public facilities. There are no major industrial facilities in the area apart from the activities associated with the tailings operation.
The largest parts of the surrounding areas are mainly used for agriculture, especially towards the north, south and west.

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

The proposed site for prospecting has the following environmental features and infrastructure:

* Infrastructure relating to the tailing operation:

The tailings operation consist of a process plant which processes the surface tailings dumps located on the Remainder, Porion 16 and Portion 1 of the farm Jagersfontein 14. Furthermore, there are numerous conveyors located on the properties to transport tailings from the surface tailings dumps to the processing plant. The process plant area also contains the offices, workshop and the employee houses.

A Fine Tailings Storage Facility is also located on the proposed area. This is the structure where the fine tailings suspended in water (i.e. Paste) is stored. The walls of this facility is constructed with coarse tailings.

The tailings operation has a balancing dam of 0.75ha located directly south of the process plant and a Process Water Dam of 0.33ha located at the plant.

* Water features:

The Kalkfontein - Fauresmith water pipeline crosses the proposed area. This pipeline transports water from the Kalkfontein Dam to Fauresmith and Jagersfontein.

The proposed prospecting area has 2 surface water features (i.e. Dam 10 and Loskop Dam) and a non-perennial watercourse which drains into Dam 10.

The proposed area also has numerous boreholes where water is either abstracted to be used in the process plant or for domestic use and monitoring of groundwater.

* Agriculture / Vacant land:

The largest part of the proposed prospecting area consists of vacant land which is used for agriculture (i.e. grazing). Furthermore, the area also has some dolerite capped hills and ridges.

* Powerlines:

There are Eskom powerlines located on the proposed land which provides electricity to the tailings operation.

* Town infrastructure:

A portion of the proposed prospecting area includes the town infrastructure of Jagersfontein.

*Roads:

The proposed prospecting area has a road network consisting of gravel roads used on the tailings operation. The portion of the prospecting area located outside the tailings operation has tarred roads.

(d) Environmental and current land use map.

(Show all environmental, and current land use features)

Attached in Appendix 2.

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).

The following potential impacts were identified:

* Loss of topsoil and vegetation,
* Loss of animal life,
* Pollution of surface and groundwater,
* Littering,
* Change in land use,
* Noise pollution,
* Impact on air quality,
* Socio-economic impact,
* Loss of heritage and/palaeontological artefacts.

Refer to the impact assessment in Appendix 5

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).

Refer to the Impact Assessment in Appendix 5

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)

No comments were raised by affected parties regarding the land use.

It should be noted that the site layout only comprises of the entire prospecting area. Boreholes can only be drilled after desktop studies have been completed and points can be identified.

Trenching / pitting and bulk sampling can only commence in specific places as identified during the drilling of boreholes. Therefore, the site layout cannot indicate the specific sites where these activities will occur. However, a layout plan is attached which indicates the areas of interest where prospecting will occur.

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).

The following concerns were raised by affected parties:

1) How will the prospecting activities impact on groundwater and will monitoring of groundwater quality be implemented during prospecting,
2) How will dust emissions and noise be controlled.

Mitigation of impacts raised by affected parties:

1.1) The prospecting activities will not have any additional impacts on groundwater as the prospecting activities will be undertaken with the existing tailings operation. No additional water will be abstracted for the prospecting operation as the same DMS plant will be used.
The existing water resource monitoring programme will remain active and water resources will be sampled and analysed quarterly throughout the prospecting activities to determine the extent of pollution caused by the tailings operation and prospecting. The monitoring programme also involves the measuring of volumes of water abstracted for the proccessing of tailings. The monthly volumes are logged. It is not expected that the prospecting activities will have any additional impacts on the water resources.
2.1) The tailings operation has an existing Dust Fallout monitoring programme which entails the monthly measuring of dust levels at the tailings operation. The Dust Fallout monitoring programme will remain active during the prospecting operation. The following are mitigation measures implemented to limit dust emissions:
- Roads are sprayed with water during dry times when trucks travel on them during very windy conditions. It should be noted that water in the area is scarse and used sparingly; therefore, roads are not sprayed daily or unnecessarily.
- Coarse material is placed on road surfaces to limit the contact between fine dust and tyres of vehicles which reduces dust emissions.
- Speed of trucks travelling on the site will be limited to 40km/hr to minimise dust emissions.
- Conveyors are used for the transportation of tailings to the plant to limit the number of vehicles using roads. The use of conveyors limit dust emissions.
- Material from the processing plant is wet and therefore does not contribute to dust emissions.
- During the prospecting activities (trenching) vegetation and topsoil will be removed from the surface and stockpiled after which material will be excavated and loaded directly onto trucks and transported to the processing plant. After excavation of all material from a trench it will be backfilled with the material from the trench and rehabilitated.
- Drilling will contribute to dust emissions. Drilling will not be undertaken in very windy conditions to limit nuisasnce dust to adjacent landowners. Drilling activities will also only be temporary.
- Noise levels will be limited to the noise associated with the current tailings operation as excavators and drills will be used during the same time as the Tailings Operation. Drilling will contribute to an increase in noise levels as it is not associated with the current activities associated with the tailings operation. However, drilling will only be done during normal working conditions (i.e. daytime) to reduce noise levels at night.

The following mitigation measures will be implimented in order to minimize potential impacts on the environment:

- Surface and groundwater quality and quantity:
* Storm water management measures will be implemented to divert clean storm water around the prospecting area and to contain any "dirty water" on the operational area.
* Comply with all conditions of the National Water Act (Act 36 of 1998) and submit all required Water Use License Applications.
* Any spill of potentially hazardous substances (e.g. oil, grease, diesel, etc.) should be cleaned and the spill managed immediately.
* Storm water mitigation measures will be implemented to ensure that clean run-off water is not contaminated by any activities related to the proposed prospecting.

- Ambient Air Quality:
* The existing dust fallout monitoring programme will continue to monitor dust emissions from the operation.
* If dust becomes problematic, further management of the dust must be implemented (refer to above mitigation measures)
* The speed of trucks and other vehicles on the roads should be limited to 40 km/hour to avoid dangerous conditions, excessive dust or excessive deterioration of the road being used.
* A complaints register will be kept on site to log any complaints from adjacent landowners.

- Noise Levels:
* Machines should be equipped with silencers.
* Machines should be maintained in a good condition to prevent excessive noise.
* A complaints register will be kept on site to log any complaints from adjacent landowners.
* The dust fallout monitoring programme will remain in place and monthly monitoring of dust levels will be implemented to monitor dust levels from the tailings operation.

- Waste:
* Non-biodegradable refuse such as glass bottles, plastic bags, metal scrap, etc., shall be disposed and stored in a suitable container at a collecting point and collected on a regular basis and disposed of at an authorized waste disposal facility in the area. Specific precautions shall be taken to prevent refuse from being dumped on or in the vicinity of the prospecting site.
* Suitable covered receptacles shall be available at all times and conveniently placed for the disposal of waste for general and hazardous waste.
* Spills of any product such as paint, oil, cleaning agents etc. should be cleaned up immediately by removing the spillage together with the polluted soil and by disposing of it at a recognised facility.
* All used oils, grease or hydraulic fluids, paints, thinners etc. that cannot be re-used shall be placed in a hazardous waste container for disposal at a suitable waste disposal facility.
* Existing toilet facilities will be used by employees throughout the project lifetime.

- Loss Of Vegetation:
* It is not anticipated that the vegetation on adjacent property will be influenced due to the proposed mining activities as these activities will be carried out on a specific site (i.e. the prospecting area).
* No open fires will be allowed on site as the site will be treated as a fire-free zone to protect the loss of vegetation.
* A permit must be obtained to transplant protected / red data specied to other areas where it will not be disturbed. However, it is not anticipated that there are any of these species which will be disturbed.
* Only areas where prospecting activities occur will be cleared of vegetation.
* The entire prospecting area will be rehabilitated and revegetated after prospecting to ensure the re-growth of vegetation. This will be relevant on areas where no future mining will occur.

- Loss of animals:
* No animals will be harmed or killed on the proposed site.
* The site will be rehabilitated in such a manner to promoted habitat establishment for animals on the site.

- Soil loss:
* Topsoil, if available, will be removed and stockpiled to preserve the soil for re-use during rehabilitation.
* Measures will be implemented to protect topsoil stockpiles from erosion. This includes covering of the soil with vegetation and making berms at the highest part of the stckpiles to divert water around them.
* Topsoil stockpiles will not be made on steep slopes.
* Topsoil will not be sold or used for any other purposes.

- Safety:
* No employee at the prospecting area will be allowed to wander on adjacent land without consent from that landowner.
* No animals in the surrounding area will be injured or killed.
* Employees will cook food and eat at home and will not be allowed to gather food from the environment surrounding the proposed site.
* Only qualified personnel will be allowed to operate machinery.
* Machinery and vehicles will be serviced as needed to ensure safety of personnel.

- Archaeology and Palaeontology:
* Should any artefacts be unearthed on the site the mining should cease and a specialist and the SAHRA should be contacted to investigate the finding.

ix) Motivation where no alternative sites were considered.

The project is for the prospecting for minerals (i.e. diamonds). Due to the nature of the project the prospecting can only occur in specific areas where the mineral is most likely to be found. The project is therefore very site specific. This area was identified by geological maps and desktop studies in the area.

Furthermore, the proposed area has already been disturbed by the existing tailings operation.

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

Please refer to the above.

h) 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 erer 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.)**

An impact assessment was compiled for the impacts on the site. During the operation on site, risk assessments and further impact assessments will be carried out to identify, assess and rank the impacts and risks that the activity will have on the site.

The impacts identified were the following:
- Loss of topsoil and vegetation:

Vegetation will need to be cleared and some topsoil may be lost,
- Change in land use:

Land cannot be used for grazing when mining activities occur,
- Loss of animal life:

The habitat of certain animal species on site will be damaged,
- Pollution of surface and groundwater:

Spillages of hazardous waste, littering or effluent spills may cause contamination of water,
- Impact on air quality:

Dust generation may cause higher dust levels in the area which will pollute the area,
- Noise pollution:

Drilling, excavation and/or pitting, loading and hauling of material will have an impact on the ambient noise levels,
- Littering:

Pollution may occur due to littering,
- Loss of heritage and/palaeontological artefacts:

Although highly unlikely, there may be an impact on artefacts on the uncovering thereof,
- Socio-economic impact:

There will be a positive impact on the socio-economic condition of the residents of the town with more job opportunities created.

(ii) Extent to which the risks/impacts can be avoided or minimized by mitigation measures:

-Loss of topsoil and vegetation:

The loss of vegetation cannot be avoided as vegetation will need to be cleared where prospecting takes place. However, soil loss can be avoided if soil is stockpiled correctly to avoid erosion on the site. If soil is stockpiled and not used for other purposes, the impact will be avoided.

- Change in land use:

The land use of the mining area will change and grazing of animals will not be possible on large areas of the site. It must be noted that the land is already degraded due to the tailings operation on site. However, the impact will be temporary as the site will be revegetated during rehabilitation.

- Loss of animal life:

Due to the degraded state of the site and the presence of people on the site, there are not expected to be many animals on the proposed area. However, any existing animal habitats may be disturbed/damaged and animals present on site will leave the site. They will retun after rehabilitation of the site. No animals will be harmed or killed on the proposed site.

- Pollution of surface and groundwater:

With the implimentation of the correct mitigation measures and best practices for the storage and handling of hazardous substances, the impact on soil- and groundwater can be avoided.

- Impact on air quality:

It is likely that there will be dust emissions from the drilling, excavation and loading of the material. However, dust emissions can be minimized by not operating during very windy conditions. If dust becomes a problem, dust control measures will be implemented.

- Noise pollution:

Noise will be generated during prospecting activities. The impact can be minimized by mitigation, but cannot be avoided. Regular servicing of vehicles and machinery, working at daytime hours and the notification of residents of activities associated with high noise levels will minimize the impact.

- Littering:

Littering may occur on site. However, the impact can be minimized by providing a suitable container at a collecting point and collecting waste on a regular basis and disposing of it at an authorized waste disposal facility in the area.

- Loss of heritage and/palaeontological artefacts:

It is not expected that there will be any impact on the cultural or historic sites/artefacts as no sites were identified. Impacts on any possible artefacts can be avoided if they are identified early enough.

- Socio-economic impact:

There will be a positive impact on the socio-economic condition of the residents of the town with more job opportunities created.

i) 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).

ACTIVITY 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.).**	**POTENTIAL IMPACT** **(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc….etc…)**	**ASPECTS AFFECTED**	**PHASE** In which impact is anticipated **(e.g. Construction, commissioning, operational Decommissioning, closure, post-closure)**	**SIGNIFICANCE** if not mitigated	**MITIGATION TYPE** **(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..**	**SIGNIFICANCE** if mitigated
Drilling, Excavation and/or pitting	Dust (air pollution), Noise, Surface disturbance, Soil loss, Loss of dolerite, Surface- and ground water contamination, Loss of vegetation	Geology Soil Residents Air Vegetation Surface- and groundwater	Commissioning, Operational, Rehabilitation	Medium	Noise control measures, Dust control measures, Stockpiling of topsoil, Maintenance of vehicles and machinery to prevent petrochemical spills.	Low
Stockpiling	Alien vegetation, Loss of topsoil, Erosion, Soil contamination	Soil	Commissioning, Operational, Rehabilitation	Medium	Stockpiling of topsoil in the correct manner, Erosion control measures (i.e. berms and trenches), Control and removal of alien species, Cleaning and prevention of all spills on stockpiles	Low
Loading, hauling and transport	Soil compaction, Dust,	Soil, Vegetation,	Commissioning, Operational,	Medium	Vehicle maintenance, Noise control measures,	Low

	Vegetation loss, Noise,	Air Residents	Rehabilitation		Dust control measures, Maintaining and using access roads,	
NOTE: THE PROCESSING PLANT, OFFICES AND OTHER INFRASTRUCTURE ASSOCIATED WITH IT FORMS PART OF THE EXISTING TAILINGS OPERATION AND WILL BE REHABILITATED UPON CLOSURE OF THE TAILINGS OPERATION. IT WILL NOT BE DECOMMISSIONED AND REHABILITATED AFTER PROSPECTING.						

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

Refer to Appendix 5

j) 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	The areas as indicated on the prospecting areas map has been disturbed by activities associated with the tailings operation and historical mining activities. It is furthermore not likely that any building older than 60 years or any graves will be disturbed by the prospecting activities. However, should any artefacts of heritage importance be unearthed, any graves be disturbed or buildings and/or structures older than 60 years be demolished a permit must be obtained from SAHRA. The operation will cease if any artefacts of cultural or heritage importance are uncoverred and a heritage specialist will be contacted and appointed to investigate.	X	
Biodiversity and ecological report	Most of the proposed prospecting areas is located on the existing surface tailings dumps and outside very sensitive areas. Furtehrmore, none of the proposed areas are located within close proximity to drainage lines and watercourses. The site has been disturbed by historical mining activities and the tailings operation. It is however recommended in the Biodiversity Management Plan that very sensitive areas not be disturbed and that drainage lines and watercourses be rehabilitated upon ceasure of the activities.	X	

Attach copies of Specialist Reports as appendices

Refer to Appendix 4.

k) Environmental impact statement

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

The correct storage and handeling of hazardous substances and hazardous waste is very important as this may cause contamination of ground and surface- and groundwater.
Topsoil should be stockpiled in a correct manner and noise and dust control measures should be implemented.

(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**

Refer to Appendix 2

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

The advantages and disadvantages of prospecting on the proposed site are as follows:

* Advantages:

- The prospecting will be done by the applicant which currently employs local residents from Jagersfontein at the surface tailings operation. Should the prospecting require more people it will result in more people from the local community being employed at the operation which will have a positive impact on the socio-economic conditions of local residents.
- The proposed site is already disturbed to the the tailings operation that is present on the site. The ecological status of the site is therefore very degraded.

* Disadvantages:

- The proposed site is located within close proximity of some of the residents. These residents may experience high noise and dust levels associated with the prospecting activities (i.e. drilling, excavation and/or pitting, hauling etc.).
- Prospecting activities will result in a change in land use until the site is rehabilitated. This will prevent residents to use the land for grazing for their animals.

l) 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.

- Surface and groundwater quality and quantity:
* No excavating activities will exceed the level of the natural water table.
* Comply with all conditions of the National Water Act (Act 36 of 1998).
* Water will not be used without the necessary authorisation.
* Storm water channels, berms and other storm water management systems will be implemented to ensure that clean storm water is diverted around the site.
* Any spills of potentially hazardous substances should be cleaned and managed immediately.
* Temporary toilets will be placed on site. The toilets and the disposal of effluent from the toilets will be managed by an outside contractor.

- Ambient Air Quality:

* The existing Dust Fallout Monitoring Programme will continue to ensure that dust levels fall within the national standards.
* If dust levels exceed the standards, further mitigation must be implemented.
* Inspection should be done on a daily basis.
* Vehicles should be serviced and maintained to lower CO2 emissions.
* Vehicles will be restricted to 40km/h on dust roads.

- Noise Levels:
* No work that may increase noise levels, will be done after normal working hours.
* Ensure the required silencers are placed on all engines.
* No mitigation to reverse hooters is allowed due to safety standards.
* Inspection of vehicles and machinery to ensure silencers are fitted.
* Ensure that a complaints register is created, managed and maintained.
* Vehicles and earthmoving equipment should be equipped with the necessary silencers and regularly maintained in a good working condition.

- Waste:
* Non-biodegradable refuse such as glass bottles, plastic bags, metal scrap, etc., shall be disposed and stored in a suitable container at a collecting point and collected on a regular basis and disposed of at an authorized waste disposal facility in the area. Specific precautions shall be taken to prevent refuse from being dumped on or in the vicinity of the site.
* Suitable covered receptacles shall be available at all times and conveniently placed for the disposal of waste for general and hazardous waste.
* Spills of any product such as paint, oil, cleaning agents etc. should be cleaned up immediately by removing the spillage together with the polluted soil and by disposing it at a recognised facility.
* All used oils, grease or hydraulic fluids, paints, thinners etc. that cannot be re-used shall be placed in a hazardous waste container for disposal at a suitable waste disposal facility.
* Temporary toilet facilities must be made available on site during construction, operational and decommissioning phase.
* Sewage from these toilets should be managed appropriately and not be disposed of on site or the surrounding environment to cause water or other pollution.

- Loss Of Vegetation:
* Activities will be restricted to the existing prospecting area.
* Vegetation will not be removed from any area where it is not part of the prospecting or current tailings operation activities.
* No firewood will be collected on site or the surrounding environment.
* No open fires will be allowed on site to prevent veld fires.
* Replace the vegetation by reseeding of grasses.
* Red data and protected vegetation types will be transplanted to other areas where it will not be affected after permits have been granted.

- Soil loss and contamination
* The clearing of soil surface areas would be restricted to what is really necessary for the construction of infrastructure. Wherever possible all topsoil should be removed and stockpiled for rehabilitation purposes.
* Overburden material should also be stockpiled separately if practically possible.
* Topsoil and overburden material should be transported to an area earmarked for rehabilitation.
* Vehicles to be inspected to ensure no oil and hydraulic fluid leaks occur.
* All oil spills on soil to be removed with the contaminated soil and disposed of as hazardous waste.
* No servicing of vehicles must occur except on a concrete floor in an area allocated for that. Emergency repairs must be done with drip trays placed underneath the vehicles/machinery.
* Training with reference to pollution hazards and their impact on the environment must be given as part of induction.
* An incidence register for this purpose must be kept.

- Safety:
* No employee at the proposed site will be allowed to wander on adjacent land to the site.
* No animals in the surrounding area to the site will be injured or killed.
* Employees at the quarry will cook food and eat at home and will not be allowed to gather food from the environment surrounding the proposed quarry site.
* Employees will be transported to and from work before and after every shift to ensure that no one trespasses on adjacent property.

* No employee will be permitted to stay at the site if it is not during his shift. Employees not working, should be transported to their homes in town.

- Land Use:

* The disturbance of vacant land must be restricted to the authorised area.
* Remove topsoil where it is available.
* Existing roads should be used as far as practically possible.
* If new land is used for roads to enter the area it must be done in consultation with surface owner.
* Topsoil will be placed in areas where it was removed and the areas will be re-vegetated accordingly.

m) Final proposed alternatives.

(Provide an explanation for the final layout of the infrastructure and activities on the overall site as shown on the final site map together with the reasons why they are the final proposed alternatives which respond to the impact management measures, avoidance, and mitigation measures identified through the assessment)

Due to the nature of the activities to be undertaken (i.e. prospecting for diamonds) the applicant is limited to the area where the minerals may potentially be located. This is based on desktop studies according to geological maps and existing data of the area. Therefore, the applicant cannot identify any location alternatives as the properties applied for are most likely to contain the mineral.

The activity is limited to the drilling of boreholes, trenching/pitting and bulk sampling. There are no alternatives to these activities as this is the only way to prospect for diamonds in order to locate the mineral to be mined.

Most of the prospecting will be conducted on areas where historic mining and/or disturbance during mining activities occurred and will also be limited to the areas where there is the highest potential to locate diamonds. However, the location of the trenching/pitting will only be confirmed after drilling of boreholes and sampling.

Technology to be used during prospecting is limited to the drilling of boreholes and excavations for trenching/pitting. This may also involve large diameter drilling to up to 450mm. The existing operation has an Dense Medium Separation (DMS) plant which will be used for the processing of the samples.

The option of not implementing the activity will result in the applicant not having the opportunity to prospect for diamonds on the properties. No further mining of diamonds will occur on the properties by the applicant which will result in job losses after completion of the current reprocessing of surface tailings. The applicant will remove all existing infrastructure after completion of the current activities and will rehabilitate the site.

n) Aspects for inclusion as conditions of Authorisation.

Any aspects which have not formed part of the EMPr that must be made conditions of the Environmental Authorisation

No water will be abstracted from sources without the necessary water use license applications submitted to Department of Water and Sanitation.
Watercourses (i.e. Drainage Lines and wetlands) will not be disturbed by the prospecting activities.

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

(Which relate to the assessment and mitigation measures proposed)

No assumptions, uncertainties and gaps in knowledge.

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.

The proposed activity should be authorized due to the following reasons:

- The prospecting will be done by the applicant which currently employs local residents from Jagersfontein at the surface tailings operation. Should the prospecting require more people it will result in more people from the local community being employed at the operation which will have a positive impact on the socio-economic conditions of local residents.
- The proposed site is already disturbed due to the the tailings operation that is present on the site. The ecological status of the site is therefore very degraded.

ii) Conditions that must be included in the authorisation

(1) Specific conditions to be included into the compilation and approval of EMPr

- People from the local community must be employed at the prospecting site,
- An application for a water use license/registration of a water use will be submitted to the Department of Water and Sanitation if any water will be abstracted.

(2) Rehabilitation requirements

The following requirements should be met during rehabilitation:

- After all the foreign matter has been removed from the sites, the excavations shall be backfilled with subsoil, compacted and levelled with previously stored topsoil. No foreign matter such as cement or other rubble shall be introduced into such backfilling.
- On completion of the prospecting operation, the area shall be cleared of any contaminated soil.
- Where vegetation is lacking or compacted, the surface shall then be ripped or ploughed and levelled in order to re-establish a growth medium.
- Develop and implement an invasive and alien control programme to control the spread of weeds and other invasive species. Eradicate exotic weeds and invader species if it invades the terrain.
- NOTE: THE PROCESSING PLANT, OFFICES AND OTHER INFRASTRUCTURE ASSOCIATED WITH IT FORMS PART OF THE EXISTING TAILINGS OPERATION AND WILL BE REHABILITATED UPON CLOSURE OF THE TAILINGS OPERATION. IT WILL NOT BE DECOMMISSIONED AND REHABILITATED AFTER PROSPECTING.

q) Period for which the Environmental Authorisation is required.

5 years

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.

I confirm that the undertaking is provided.

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.

R81 000.00
The amount required for rehabilitation was determined by using the Quantum Calculation. Furthermore, the prospecting areas will be rehabilitated concurrently by closing each prospecting trench/pit after completion of prospecting and rehabilitating that trench and the entire disturbed surrounding environment before relocating and openring the next trench. Immidiate closure of the operation (i.e. Prospecting) will therefore require this amount for closure.
It should be noted that the prospecting operation will make use of infrastructure, structures and machinery used for the current tailings operation. This processing plant and machinery will therefore not be demolished and rehabilitated as part of the prospecting project.

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 R81 000.00 can be provided for by the applicant.

t) Deviations from the approved scoping report and plan of study.

i) Deviations from the methodology used in determining the significance of potential environmental impacts and risks.

(Provide a list of activities in respect of which the approved scoping report was deviated from, the reference in this report identifying where the deviation was made, and a brief description of the extent of the deviation).

There were no deviations from the methodology.

ii) Motivation for the deviation.

N/A

u) Other 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 **Appendix 2.19.1** and confirm that the applicable mitigation is reflected in 2.5.3; 2.11.6.and 2.12.herein).

The socio-economic condition of no person will be negatively affected by the proposed prospecting for diamonds on the land as described. However, the prospecting will be done by the applicant which currently employs local residents from Jagersfontein at the surface tailings operation. Should the prospecting require more people it will result in more people from the local community being employed at the operation which will have a positive impact on the socio-economic conditions of local residents.

(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)(*i*)(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).

It is not expected that any graves and structures or buildings older than 60 years will be disturbed and/or demolished by the prospecting operation as the areas where prospecting is planned will occur in open spaces. However, if any graves or other archaeological artefacts are identified and/or unearthed during the prospecting the heritage specialist and SAHRA will be contacted for investigations. Refer to the HIA in Appendix 4.

v) 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)**.

Due to the nature of the activities to be undertaken (i.e. prospecting for diamonds) the applicant is limited to the area where the minerals may potentially be located. This is based on desktop studies according to geological maps and existing data of the area. Therefore the applicant cannot identify any location alternatives as the properties applied for are most likely to contain the mineral.

The activity is limited to the drilling of boreholes, trenching/pitting and bulk sampling. There are no alternatives to this activities as this is the only way to prospect for diamonds in order to locate the mineral to be mined.

Most of the prospecting will be conducted on areas where historic mining and/or disturbance during mining activities occurred and will also be limited to the areas where there is the highest potential to locate diamonds. However, the location of the trenching/pitting will only be confirmed after drilling of boreholes and sampling.

Technology to be used during prospecting is limited to the drilling of boreholes and excavations for trenching/pitting. This may also involve large diameter drilling to up to 450mm. The existing operation has an Dense Medium Separation (DMS) plant which will be used for the processing of the samples.

The option of not implementing the activity will result in the applicant not having the opportunity to prospect for diamonds on the properties. No further mining of diamonds will occur on the properties by the applicant which will result in job losses after completion of the current reprocessing of surface tailings. The applicant will remove all existing infrastructure after completion of the current activities and will rehabilitate the site.

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).

Details included in Part A, Section 1(a).

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).

Details included in Part A, Section 1(h).

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 any areas that should be avoided, including buffers)

Attached in Appendix 2

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 in 2.4 herein)

* The topsoil removed in the site preparation process should be replaced during the rehabilitation exercise.
* Alleviation of compaction of soils will be done during rehabilitation of the terrain, including roads.
* No soil erosion must be visible and no potential for soil erosion must be present at closure.
* No soil contamination must be visible or known before closure can be given.
* No compaction of any roads or any other area must be present during closure. It should be noted that this relates to new roads established where necessary to gain access to the prospecting areas as the tailings operation has an existing road network which will be used as far as practically possible.
* If the soil structure is disturbed mitigation measures e.g. the use of organic material, lime and fertilisers must be implemented to restore the soil structure.
* The soil must be fertile enough to sustain vegetation.

* Rehabilitate the area by backfilling excavations to such a state that vegetation can recover and sustain sustainable growth and be used for natural grazing again.
* No invasive and alien species must be present after closure.
* The animal life habitat must be restored after decommissioning.
* Rehabilitation of the excavation areas would ensure that no dust is generated from exposed surfaces.
* No noise attributed to prospecting will be generated from the site after closure anymore.
* The economic development must deliver a multiplier effect that will contribute to the local economy long after closure.

ii) **The process for managing any environmental damage, pollution, pumping and treatment of extraneous water or ecological degradation as a result of undertaking a listed activity.**

It is not anticipated that the undertaking of the activities will cause significant environmental damage due to the degraded state of the proposed site and the low ecological status. However, it must be ensured that all mitigation and management measures are implemented throughout all phases of the project to ensure that impacts are minimised.

iii) **Potential risk of Acid Mine Drainage**. (Indicate whether or not the mining can result in acid mine drainage).

None

iv) **Steps taken to investigate, assess, and evaluate the impact of acid mine drainage.**

Due to the method and the mineral prospected for (daimonds), acid mine drainage will not occur.

v) **Engineering or mine design solutions to be implemented to avoid or remedy acid mine drainage.**

N/A

vi) **Measures that will be put in place to remedy any residual or cumulative impact that may result from acid mine drainage.**

N/A

vii) **Volumes and rate of water use required for the mining, trenching or bulk sampling operation.**

Water will not be used for the prospecting operation. A WUL was obtained for the tailings operation and the existing process plant will be used.

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

A Water Use License (WUL) was obtained for the tailings operation. If required for the prospecting right a new Water Use License Application will be submitted to the Department of Water and Sanitation. It is however unlikely that the prospecting operation will require a WUL.

ix) Impacts to be mitigated in their respective phases

Measures to rehabilitate the environment affected by the undertaking of any listed activity

ACTIVITIES (as listed in 2.11.1)	**PHASE** of operation in which activity will take place. State; Planning and design, Pre-Construction' Construction, Operational, Rehabilitation, Closure, Post closure.	**SIZE AND SCALE of disturbance** (volumes, tonnages and hectares or m^2)	**MITIGATION MEASURES** (describe how each of the recommendations in herein will remedy the cause of pollution or degradation and migration of pollutants)	**COMPLIANCE WITH STANDARDS** (A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)	**TIME PERIOD FOR IMPLEMENTATION** Describe the time period when the measures in the environmental management programme must be implemented Measures must be implemented when required. With regard to Rehabilitation specifically this must take place at the earliest opportunity. .With regard to Rehabilitation, therefore state either:-.. Upon cessation of the individual activity or. Upon the cessation of mining, bulk sampling or alluvial diamond prospecting as the case may be.
Clearance of vegetation	Pre-operational	600m2	- No petrochemical substances and/or dangerous goods will be stored outside designated areas to prevent spillages of hazardous substances which will lead to contamination of soil and water. - Topsoil and overburden will be stored in a manner to prevent erosion of topsoil in order to return topsoil to the rehabilitated area to improve revegetation. - Machinery will be serviced to prevent spillage of potentially hazardous substances to prevent	- Best practices - NHRA	Upon commencement of the clearance of the area.

			contamination of soil and water. To maintenance of machinery will also reduce noise levels. - Machinery and vehicles will make use of existing access roads to limit soil compaction and unnecessary disturbance of vegetation. - No material, substances and/or stockpiles will be placed within the 1:100 year flood line of any watercourse. - The area will be investigated pre-clearance to determine the presence of any heritage artefacts. - Bags/drums will be placed on prospecting areas to dispose of general waste to prevent littering. The refuse bins will be removed after every day.		
Excavation (trenching/pitting)	Operational	600m2	- No petrochemical substances and/or dangerous goods will be stored outside designated areas to prevent spillages of hazardous substances which will lead to contamination of soil and water. - Topsoil stockpiles will be monitored and measures will be implemented (where necessary) to limit erosion and the growth of alien vegetation. - Machinery will be serviced to prevent spillage of potentially hazardous substances to prevent contamination of soil and water. To maintenance of machinery will also reduce noise levels. - Machinery and vehicles will make use of existing access roads to limit soil compaction and unnecessary disturbance of vegetation. - No material, substances and/or stockpiles will be placed within the	- Comply with Dust Fallout limits - Best Practices - NHRA	Throughout the excavation phase.

			1:100 year flood line of any watercourse. - The area will be investigated during excavation to determine the presence of any heritage artefacts. - Material will be hauled to the plant as soon as possible. - The Dust Fallout on the site will be monitored to determine the impact of excavation on air quality. In the event that dust from the prospecting is a problem, measures will be implemented to reduce dust emissions. - Bags/drums will be placed on prospecting areas to dispose of general waste to prevent littering. The refuse bins will be removed after every day.		
Loading, hauling and transportation	Operational	600m2	- No petrochemical substances and/or dangerous goods will be stored outside designated areas to prevent spillages of hazardous substances which will lead to contamination of soil and water. - Existing roads and conveyors will be used to transport material to the plant as far as practically possible to reduce vegetation clearance and soil compaction. - New roads will not be made over watercourses and/or within 100m from any watercourse. - Machinery will be serviced to prevent spillage of potentially hazardous substances to prevent contamination of soil and water. To maintenance of machinery will also reduce noise levels. - The area will be investigated during excavation to determine the presence of any heritage artefacts.	Best Practices	Loading and hauling phase

			- Material will be hauled to the plant as soon as possible. - The Dust Fallout on the site will be monitored to determine the impact of excavation on air quality. In the event that dust from the prospecting is a problem, measures will be implemented to reduce dust emissions. - Bags/drums will be placed on prospecting areas to dispose of general waste to prevent littering. The refuse bins will be removed after every day.		
Rehabilitation of trenches	Rehabilitation	600m2	- Non diamond bearing material from the process plant will be returned to the voids as backfilling. - No chemicals are used in the process plant as material is only washed with water. - Apart from the material from the process plant, overburden and topsoil will be returned from stockpiles to the voids to level the area. - The prospected areas will be revegetated and vegetation establishment will be monitored to ensure regrowth. This will prevent erosion and dust emissions. - Existing roads will be used when returning material to voids and roads will be ripped after ceasing of the backfilling. - Bags/drums will be placed on prospecting areas to dispose of general waste to prevent littering. The refuse bins will be removed after every day.	Dust fallout limits Best practice Biodiversity Management Plan	During rehabilitation

e) Impact Management Outcomes

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

ACTIVITY 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.).**	**POTENTIAL IMPACT** **(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc.…etc…)**	**ASPECTS AFFECTED**	**PHASE** In which impact is anticipated **(e.g. Construction, commissioning, operational Decommissioning, closure, post-closure)**	**MITIGATION TYPE** **(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** • **Remedy through rehabilitation..**	**STANDARD TO BE ACHIEVED** **(Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.**
Clearance of vegetation and topsoil stockpiling	- Loss of topsoil and vegetation, - Loss of geology, - Loss of animal life and habitat, - Dust emissions, - Elevated noise levels, - Pollution, - Soil and water contamination from hydrocarbons, - Soil compaction, - Erosion and sedimentation, - Loss of heritage artefacts.	- Geology and soil, - Animals and habitat, - Ambient air quality, - Ambient noise levels, - Surface and groundwater, - Archaeology	Pre-excavation	- Rehabilitation - Relocation of endangered species and rehabilitation of area for resettlement of species, - Dust control measures, - Noise control measures, - Stormwater control measures, avoidance of spillage, - Monitoring	- Closure plan and end landuse, - Biodiversity Management Plan, - Dust fallout limits - Noise limits, - Stormwater management plan and comply to water standards (water monitoring), - HIA

Trenching/Pitting	- Loss of soil and geology - Air pollution, - Noise, - Surface- and ground water contamination, - Littering and pollution, - Erosion and sedimentation, - Change of land use - Loss of heritage artefacts	- Geology and Soil - Air quality, - Ambient noise levels, - Surface and groundwater, - Land use, - Heritage artefacts,	Prospecting phase	- Rehabilitation, - Dust control measures, - Noise control measures, - Water monitoring and erosion control measures, - General and hazardous waste management, - Not exceeding boundaries, Monitoring of artefacts.	- Closure plan and end landuse, - Biodiversity Management Plan, - Dust fallout limits - Noise limits, - Stormwater management plan and comply to water standards (water monitoring), - HIA
Loading and hauling	- Compacting and contamination of soil, - Loss of vegetation, - Loss of animals and habitat, - Elevated noise levels, - Elevated dust emissions, - Obstruction and/or contamination of watercourses, - Loss of heritage artefacts.	- Soil, - Vegetation, - Animal life, - Ambient noise levels, - Ambient air quality, - Surface water resources, - Archaeolog	Prospecting phase	- Rehabilitation and no entry of vehicles into veld, - Rehabilitation, - Rehabilitation, - Noise control measures, - Dust control measures, - Monitoring of watercourses, - Waste management, - Monitoring of prospecting area and archaeology.	- Closure plan, - Biodiversity Management Plan and closure plan, - Biodiversity Management Plan and closure plan, - Noise limits, - Dust fallout limits, - Water limits, - HIA.
Rehabilitation	- Dust emissions - Erosion, - Noise levels, - Contamination of surface and	- Ambient air quality - Ambient noise levels - Surface and	Rehabilitation	- Dust control measures, - Storm water management measures, - Noise control measures, - Water monitoring,	- Dust fallout limits - Storm water management plan - Noise levels - Water limits.

	groundwater, - Littering	groundwater		- Environmental monitoring and waste management.	

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).

ACTIVITY 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.).**	**POTENTIAL IMPACT** **(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc….etc…)**	**MITIGATION TYPE** **(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** **Remedy through rehabilitation..**	**TIME PERIOD FOR IMPLEMENTATION** Describe the time period when the measures in the environmental management programme must be implemented Measures must be implemented when required. With regard to Rehabilitation specifically this must take place at the earliest opportunity. .With regard to Rehabilitation, therefore state either:-.. Upon cessation of the individual activity or. Upon the cessation of mining, bulk sampling or alluvial diamond prospecting as the case may be.	**COMPLIANCE WITH STANDARDS** (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)
Clearance of vegetation and topsoil stockpiling	- Loss of topsoil and vegetation, - Loss of geology, - Loss of animal life and habitat, - Dust emissions, - Elevated noise levels, - Pollution, - Soil and water contamination from hydrocarbons, - Soil compaction, - Erosion and sedimentation, - Loss of heritage artefacts.	- Rehabilitation - Relocation of endangered species and rehabilitation of area for resettlement of species, - Dust control measures, - Noise control measures, - Stormwater control measures, avoidance of spillage, - Monitoring	Before and during clearance of site	- Dust fallout monitoring will be implemented to monitor compliance to dust fallout limits, - Monitoring of noise levels to comply with standards, - Water sampling and analysis to comply with standards. - Health and safety inspections, - Environmental compliance monitoring to establish effective waste management and best practices.

Trenching/pitting	- Loss of soil and geology - Air pollution, - Noise, - Surface- and ground water contamination, - Littering and pollution, - Erosion and sedimentation, - Change of land use - Loss of heritage artefacts	- Rehabilitation, - Dust control measures, - Noise control measures, - Water monitoring and erosion control measures, - General and hazardous waste management, - Not exceeding boundaries, Monitoring of artefacts.	Before trenching/pitting	- Dust fallout monitoring will be implemented to monitor compliance to dust fallout limits, - Monitoring of noise levels to comply with standards, - Water sampling and analysis to comply with standards. - Health and safety inspections, - Environmental compliance monitoring to establish effective waste management and best practices.
Loading and hauling	- Compacting and contamination of soil, - Loss of vegetation, - Loss of animals and habitat, - Elevated noise levels, - Elevated dust emissions, - Obstruction and/or contamination of watercourses, - Loss of heritage artefacts.	- Rehabilitation and no entry of vehicles into veld, - Rehabilitation, - Rehabilitation, - Noise control measures, - Dust control measures, - Monitoring of watercourses, - Waste management, - Monitoring of prospecting area and archaeology.	During prospecting phase	- Dust fallout monitoring will be implemented to monitor compliance to dust fallout limits, - Monitoring of noise levels to comply with standards, - Water sampling and analysis to comply with standards. - Health and safety inspections, - Environmental compliance monitoring to establish effective waste management and best practices.
Rehabilitation	- Dust emissions - Erosion, - Noise levels, - Contamination of surface and groundwater, - Littering	- Dust control measures, - Storm water management measures, - Noise control measures, - Water monitoring, - Environmental monitoring and waste management.	During rehabilitation phase (as soon as possible).	- Dust fallout monitoring will be implemented to monitor compliance to dust fallout limits, - Monitoring of noise levels to comply with standards, - Water sampling and analysis to comply with standards. - Health and safety inspections, - Environmental compliance monitoring to establish effective waste management and best practices, - Biodiversity Management Plan

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 Regulation 22 (2) (d) as described in 2.4 herein.

The trench will be backfilled and levelled. Topsoil will be returned to the backfilled area and will be seeded (before the rainy season).

All machinery, equipment, infrastructure and waste products will be removed from the prospecting site and compacted areas, including access roads not to be used for the tailings operation will be ripped.

The site will be monitored monthly to ensure regrowth of vegetation and alien vegetation will be monitored and removed throughout.

Watercourses in close proximity to treanches will be monitored to ensure that there are no impacts on the watercourses as a result of the prospecting operation.

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

The closure objectives were discussed with the landowner whom is also an I&AP. No comments have been received regarding the closure objectives.

It should be noted that if the results from prospecting indicates that mining is feasible, a mining right will be applied for to undertake the mining operation. Should it not be feasible to undertake mining the area will be rehabilitated to be used for agricultural activities (i.e. grazing).

(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.

Refer to Appendix 2

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

The rehabilitation plan and objectives for closure indicates that the area will be used for either diamond mining or agriculture after closure depending of the results of the prospecting.

(e) Calculate and state the quantum of the financial provision required to manage and rehabilitate the

environment in accordance with the applicable guideline.

The quantum of the financial provision was calculated using the DMR template and the "GUIDELINE DOCUMENT FOR THE EVALUATION OF THE QUANTUM OF CLOSURE-RELATED FINANCIAL PROVISION PROVIDED BY A MINE".

The quantum of the financial provision is R80 639.00.

Note that the quantum will be reviewed and updated annually during the prospecting operation to ensure relevance to disturbed areas. This innitial quantum makes provision for the area disturbed by 1 trench. Furthermore, the prospecting operation will make use of the facilities of the existing tailings operation which does not form part of the rehabilitation.

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

Financial provisions will be provided by the applicant before commencement of prospecting.

Mechanisms for monitoring compliance with and performance assessment against the environmental management programme and reporting thereon, including

g) Monitoring of Impact Management Actions
h) Monitoring and reporting frequency
i) Responsible persons
j) Time period for implementing impact management actions
k) Mechanism for monitoring compliance

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
Clearance of vegetation and topsoil	- Elevated dust levels - Elevated noise levels - Littering - Surface and groundwater contamination - Erosion and siltation of water resources (storm water) - Animal life and habitat - Impact on heritage resources	- Dust fallout monitoring programme - Health and safety monitoring (noise levels) - Environmental compliance monitoring - Water sampling and analysis - Storm water management plan and sampling and analysis - Environmental compliance monitoring - Environmental compliance monitoring	Dedicated Environmental Officer and external Environmental Compliance Officer	- Monthly - Monthly - Monthly - Quarterly - Quarterly
Trenching/pitting	- Elevated dust levels - Elevated noise levels - Littering - Surface and groundwater contamination - Erosion and siltation of water resources (storm water) - Animal life and	- Dust fallout monitoring programme - Health and safety monitoring (noise levels) - Environmental compliance monitoring - Water sampling and analysis - Storm water management plan and sampling and analysis - Environmental compliance monitoring	Dedicated Environmental Officer and external Environmental Compliance Officer	- Monthly - Monthly - Monthly - Quarterly - Quarterly

	habitat - Impact on heritage resources	- Environmental compliance monitoring		
Loading, hauling and transport	- Elevated dust levels - Elevated noise levels - Littering - Surface and groundwater contamination - Erosion and siltation of water resources (storm water) - Animal life and habitat - Impact on heritage resources	- Dust fallout monitoring programme - Health and safety monitoring (noise levels) - Environmental compliance monitoring - Water sampling and analysis - Storm water management plan and sampling and analysis - Environmental compliance monitoring - Environmental compliance monitoring	Dedicated Environmental Officer and external Environmental Compliance Officer	- Monthly - Monthly - Monthly - Quarterly - Quarterly
Rehabilitation	- Elevated dust levels - Elevated noise levels - Littering - Surface and groundwater contamination - Erosion and siltation of water resources (storm water) - Animal life and habitat - Impact on heritage resources	- Dust fallout monitoring programme - Health and safety monitoring (noise levels) - Environmental compliance monitoring - Water sampling and analysis - Storm water management plan and sampling and analysis - Environmental compliance monitoring - Environmental compliance monitoring	Dedicated Environmental Officer and external Environmental Compliance Officer	- Monthly - Monthly - Monthly - Quarterly - Quarterly

l) Indicate the frequency of the submission of the performance assessment report.

The Environmental Performance Assessment will be submitted to DMR Annually with the updated Quantum.

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.

- Toolbox talks before any activities occur,
- Weekly meetings
- Induction given to employees with employment

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

An environmental risk assessment will be undertaken for all activities before commencement. Once risks are identified and assessed, employees will be made aware of risks associated with the activities on site. Employees will be made aware of how to manage certain pollutants and dangerous goods, waste and effluent to minimize the risks on site. Employees will be trained on the management programmes.

n) Specific information required by the Competent Authority
(Among others, Confirm that the financial provision will be reviewed annually).

An annual environmental performance assessment will be undertaken.

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) the acceptability of the project in relation to the finding of the assessment and level of mitigation proposed; ☒

-END-