



mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

SCOPING REPORT

FOR LISTED ACTIVITIES ASSOCIATED WITH MINING RIGHT AND/OR BULK SAMPLING ACTIVITIES INCLUDING TRENCHING IN CASES OF ALLUVIAL DIAMOND PROSPECTING

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: B&E International (Pty) Ltd

TEL NO: 011 966 4300

FAX NO: 086 540 7359

POSTAL ADDRESS: P.O. Box 26730, East Rand, Kempton Park, 1462

PHYSICAL ADDRESS: 92 & 93 Maple Street, Kempton Park

FILE REFERENCE NUMBER SAMRAD: To be supplied by DMR

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 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 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 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.

OBJECTIVE OF THE SCOPING PROCESS

- 1) The objective of the scoping process is to, through a consultative process-
 - (a) identify the relevant policies and legislation relevant to the activity;
 - (b) motivate 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 and confirm the preferred activity and technology alternative through an impact and risk assessment and ranking process;
 - (d) identify and confirm the preferred site, through a detailed site selection process, which includes an impact and risk assessment process inclusive of cumulative impacts and a ranking process of all the identified alternatives focusing on the geographical, physical, biological, social, economic, and cultural aspects of the environment;
 - (e) identify the key issues to be addressed in the assessment phase;
 - (f) agree on the level of assessment to be undertaken, including the methodology to be applied, the expertise required as well as the extent of further consultation to be undertaken to determine the impacts and risks the activity will impose on the preferred site through the life of the activity, including the nature, significance, consequence, extent, duration and probability of the impacts to inform the location of the development footprint within the preferred site, and
 - (g) identify suitable measures to avoid, manage, or mitigate identified impacts and to determine the extent of the residual risks that need to be managed and monitored.
-

SCOPING REPORT

2) Contact Person and correspondence address

a) Details of: Greenmined Environmental

In terms of NEMA the proponent must appoint an independent Environmental Assessment Practitioner (EAP) to undertake the EIA of any activities regulated in terms of the aforementioned Act. B&E International (Pty) Ltd appointed Greenmined Environmental to undertake the study needed. Greenmined Environmental has no vested interest in B&E International (Pty) Ltd or the proposed project and hereby declares its independence as required by the EIA Regulations.

i) The EAP who prepared the report

Name of the Practitioner: Ms. Christine Fouche (Senior Environmental Specialist)

Tel No: 021 851 2673

Fax No: 086 546 0579

E-mail address: christine.f@greenmined.co.za

ii) Expertise of the EAP

(1) The qualifications of the EAP

(With evidence attached as **Appendix 1**)

Ms. Fouche has a Diploma in Nature Conservation and a BSc in Botany and Zoology. Full CV with proof of expertise is attached as Appendix 1.

(2) Summary of the EAP's past experience

(Attach the EAP's curriculum vitae as **Appendix 2**)

Ms. Fouche has eleven years' experience in doing Environmental Impact Assessments and Mining Applications in South Africa. See a list of past project attached as Appendix 2.

b) Description of the property.

Farm Name:	Portion 30 and 42 of the farm Doornrug 302 JS
Application area (Ha)	42.75 ha
Magisterial district	Balmoral
Distance and direction from nearest town	±8 km to Balmoral
21 digit Surveyor General Code for each farm portion	T0JS00000000030200030 T0JS00000000030200042

c) **Locality map**

(show nearest town, scale not smaller than 1:250000 as **Appendix 3**)

The requested map is attached as Appendix 3.

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

i) **Listed and specified activities**

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 and attach as **Appendix 4**

The applicant, B&E International (Pty) Ltd, applied for environmental authorisation to crush and screen aggregates on 42.75 ha of Portion 30 & 42 of the farm Doornrug 302 JS, Balmoral District, Mpumalanga Province.

The proposed activity will entail the crushing, screening and stockpiling of aggregate obtained from the existing quarry on the property. The applicant will purchase the hard rock from the mining permit/right holders of the existing quarry pit and transport it to the proposed processing area. The proposed activity will not require any blasting as no mining will be done by the applicant.

The applicant will:

- ☞ Strip and stockpile the topsoil of the proposed processing area,
- ☞ Establish the site infrastructure,
- ☞ Crush and screen the hard rock at the crusher plant in order to reduce it to various size aggregate,
- ☞ Stockpile the aggregate until it is sold and collected by clients.

A site office, workshop and service area, weighbridge and ablution facilities will be established at the site. A generator will be used to power the infrastructure on site until an Eskom connection can be secured. Process water will be obtained from the existing quarry pit. The water will mainly be used for dust suppression purposes on the crusher plant, roads and stockpiling area. Potable water will daily be transported to site. The solid waste produced during the operational phase of the project will be transported from site to the eMalahleni landfill site. Approximately sixty workers will be employed at the site.

See attached as Appendix 4 a copy of the plan and schematic indication of the proposed processing 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 m ²	LISTED ACTIVITY Mark with an X where applicable or affected.	APPLICABLE LISTING NOTICE (GNR 544, GNR 545 OR GNR 546)/NOT LISTED
Demarcation of site with visible beacons	42.75 ha	N/A	Not Listed
Stripping and stockpiling of topsoil of the proposed processing area & Establishment of site infrastructure	9.8 ha	X	GNR 983 Listing Notice 1 Activity 28
Crush and screen the recovered material at the crusher plant in order to reduce it to various size aggregate,	9.8 ha	X	GNR 984 Listing Notice 2 Activity 21
Stockpile the aggregate until it is collected by clients.	29.3 ha	X	GNR 984 Listing Notice 2 Activity 15
Sloping and landscaping upon closure of the site	±39 ha	N/A	
Replacing the topsoil and vegetating the disturbed area	±39 ha	N/A	

ii) Description of the activities to be undertaken

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

The applicant, B&E International (Pty) Ltd, applied for environmental authorisation to crush and screen aggregates on 42.75 ha of Portion 30 & 42 of the farm Doornrug 302 JS, Balmoral District, Mpumalanga Province.

Howards Crushers CC currently holds a mining permit (Permit No 48/2011) to mine dolerite from the existing quarry on the property, and Inzalo Crushing and Aggregates (Pty) Ltd applied for a mining right (Reference Number MP 30/5/1/2/2/10104MR) to extend the existing quarry. This application will entail the applicant, B&E International, procuring hard rock from the mining permit/right holders and transporting it to the proposed processing area where it will be crushed and screened to produce various size aggregates. The applicant will only process the hard rock at the proposed area and no mining or blasting will be required within the footprint area.

The applicant will:

- ☞ grade the topsoil off the proposed processing area. The topsoil will be stockpiled along the boundary of the site to be replaced during the rehabilitation of the area,
- ☞ establish the site infrastructure,
- ☞ crush and screen the hard rock at the crusher plant in order to reduce it to various size aggregate,
- ☞ stockpile the aggregate until it is sold and collected by clients,
- ☞ once the site is closed, rehabilitate the area through landscaping and replacement of the topsoil.

The infrastructure to be established on-site entails:

- ☞ Site Office and Storage Area
- ☞ Workshop and Service Area with Wash Bay
- ☞ Weighbridge with associated Control Room
- ☞ Ablution Facilities
- ☞ Generator until an Eskom connection can be secured
- ☞ Crushing and Screening Plant
- ☞ Diesel and Water Tanks
- ☞ Security Fence

Site Establishment / Construction phase:

During the site establishment phase the applicant will have to clear the vegetation and topsoil from the footprint of the processing area to be used for the establishment of the above mentioned infrastructure and stockpile area.

1. Demarcation of Processing Area:

Upon receipt of the Environmental Authorisation (EA), and prior to site establishment, the boundary of the site will be demarcated and fenced off. In an attempt to conserve some vegetation within the footprint of the processing area, it is proposed that a 3.7 ha area, covered by a dense *Acacia* tree component, be demarcated as a no-go area and be protected throughout the life of the proposed processing activities.

Areas to be demarcated:

- ☞ Boundary of the entire 42.75 ha area,
- ☞ Crushing and Screening area (±9.8 ha),
- ☞ Stockpile area (±29.3 ha),
- ☞ No-go area (±3.7 ha).

2. Clearing of Vegetation:

Although the footprint of the proposed processing area falls partially over a previously disturbed area, sections of the footprint area will still require the removal of indigenous vegetation. The vegetation of the footprint area mainly consists of a well-established grass layer as well as a dense stand of Sweet thorn trees (*Acacia karoo*) in the south-western side. The applicant will strive to minimise the amount of vegetation to be removed in order to minimising the disturbed areas to be managed and rehabilitated afterwards. The conservation of the proposed 3.7 ha no-go area will also contribute to minimise the impact on the vegetation of the property. Upon receipt of the EA and prior to site establishment the ECO will conduct a walkthrough with site management in order to identify any trees/bushes that may be removed as well as any bulbous plants that may need translocation permits. Plants that can be rescued from the footprint area will be transplanted to a safe area resembling the plants original habitat. This will be supervised by the ECO. The wood of the trees that has to be removed from the footprint area will be chopped up and offered as fire wood to the landowner, employees or local community.

3. Topsoil Stripping:

Upon removal of the vegetation the topsoil will be stripped of all areas to be affected by the proposed activities. The stripped topsoil will be stockpiled along the boundaries of the processing area to be used during the rehabilitation phase. Site management has to ensure that topsoil and overburden heaps are stockpiled separately.

Topsoil stripping will be restricted to the areas needed during the operational phase of the activity. The complete A-horizon (topsoil – the top 100 – 200 mm of soil which is generally darker coloured due to high organic matter content) will be removed. If it is unclear where the topsoil layer ends the top 300 mm of soil will be stripped. The topsoil will be stockpiled in the form of a berm alongside the boundary of the area where it will not be driven over, contaminated, flooded or moved during the operational phase. The topsoil berm will measure a maximum of 1.5 m high and must be planted with an indigenous grass seed mix if stockpiled longer than 6 months. The grass will bind the soil and thus serve to control both wind and water erosion from the stockpiles as well as assist in keeping the soil viable for rehabilitation purposes.

4. Access Roads:

The applicant will make use of the existing R104 and farm roads to reach the property. The existing gravel road, currently used to access the quarry pit, will also be used to access the proposed processing area.

During the assessment process it was noted that the bridge on the R104, immediately west of the proposed entrance to the processing access road, carries a 10 ton restriction. In light of the above, trucks transporting material from the processing area will only travel from the site in an eastern direction along the R104. No truck exceeding 10 ton will cross the bridge on the R104.

5. Establishment of Site Infrastructure:

As mentioned above the site infrastructure to be established during the construction phase will consist of:

3 A Site Office and Storage Areas

The site office and storage area are proposed to be containers placed on concrete platforms. It is proposed that the office initially be supplied with power from a Genset (generator) until a connection from the Eskom grid can be secured.

3 Workshop and Service area with Wash Bay

The vehicles service area will entail the establishment of a workshop with associated wash bay and oil sump.

3 Weighbridge with associated Control Room

As with the site office the weighbridge and control room will also be powered by a Genset until further arrangements can be made.

3 Ablution Facilities

The ablution facilities to be established on site will entail toilets connected to a septic tank with separate showers to be used by the employees. The septic tank will be serviced by a contractor as the need arise.

3 Crusher and Screening Plant

The crusher infrastructure will consist of fixed plant with:

- ❖ Jaw Crusher,
- ❖ 3x Cone Crushers,
- ❖ 3x Screens,
- ❖ Barmac,
- ❖ Conveyors

The power of the crusher plant will also be supplied from the Genset.

3 Diesel and Water Tanks

Diesel storage will be less than 80 m³ at any given day. Should diesel storage be needed on site the diesel tank with associated bund area will also be established in the vicinity of the service/workshop area.

Plastic water tanks will be established on-site for the storage of water to be used for dust suppression purposes. B&E International will source the process water from the quarry pit for which Howards Crushers CC holds a Water Use Authorisation. Potable water will be sourced from the borehole on the property upon agreement with the landowner.

Operational phase:

The processing activity will entail the loading of hard rock material from the existing quarry pit upon which it is transported to the crushing and screening plant. The hard rock will be carried by conveyer belt to the coarse rock stockpile, from where the material will be transported by a series of conveyer belts to the secondary screens and secondary conical crusher. The screened material will be delivered to the various size category stockpiles. The oversize material will be delivered to the tertiary screens and crushers where it will be reworked. The secondary and tertiary screens and crushers will be in a closed circuit. Transportation of the final product will be from the stockpile area to the client by means of trucks.

It is proposed that the dolerite will be crushed to produce the following:

- ∞ G5 Crusher Run
- ∞ G2 Crusher Run
- ∞ 19 mm stone
- ∞ 13.2 mm stone
- ∞ 9.5 mm stone
- ∞ Crusher Dust
- ∞ Ballast

This will be sold to consumers such as:

- ∞ Ready Mix Concrete Suppliers
- ∞ Brick Suppliers
- ∞ Asphalt Suppliers
- ∞ Mine Developers
- ∞ Power Station Developments
- ∞ Road Construction

Decommissioning phase:

The closure objectives will be detailed in the Environmental Impact Assessment Report and Environmental Management Programme, to be approved by DMR, but will mainly entail the removal of all infrastructure and the landscaping of all disturbed areas in order to return it to agricultural use.

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
National Environmental Management Act, 1998 (Act No. 107 of 1998) and the Environmental Impact Assessment Regulations, 2014 - GNR 983 Listing Notice 1 Activity 28 - GNR 984 Listing Notice 2 Activity 15 - GNR 984 Listing Notice 2 Activity 21	Application for environmental authorisation Ref No: To be supplied by DMR
National Environmental Management Act: Biodiversity Act, 2004 (Act No. 10 of 2004) and amendments	Assessment of biophysical environment
Occupational Health and Safety Act, 1993 (Act No 85 of 1993)	The mitigation measures proposed for the site includes specifications of the OHS Act
National Heritage Resources Act No 25 of 1999	Assessment of the cultural and heritage environment
Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)	Assessment of biophysical environment
Public Participation Guideline in terms of the NEMA EIA Regulations	Used during the public participation process

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).

Portion 30 of the farm Doornrug 302 JS carries a mining permit (Permit No 48/2011) and an application for a mining right (Reference Number MP 30/5/1/2/2/10104MR), to extend the existing quarry, is pending with DMR.

B&E International (Pty) Ltd is an active and large participant in the aggregate and sand production industry. The applicant have been operating crushing plants around Southern Africa for the last 45 years and have been doing so at the Kusile Quarry (approximately 15 km from the proposed site on Portion 30 and 42 of the farm Doornrug 302 JS) over the last 5 years as well. The applicant intends to erect the plant, currently used at Kusile Quarry where the reserve is all but exhausted, at the proposed crushing area so as to continue with their business as aggregate suppliers. B&E International (Pty) Ltd has been serving the demand in the Bronkhorstspuit, Delmas, Witbank and Kusile areas over the last 5 years and have established a viable business which is obviously dependant on the availability of a readily available rock source or quarry. This need will be fulfilled

should the EIA application to crush and screen aggregate on the proposed area be approved and the applicant receives permission to continue.

The generation of aggregate material at the site will benefit the general society in that it will contribute to the upgrading of the road infrastructure of the area, thereby enabling road users to safely travel through the area. The upgrading and maintenance of roads is an important priority in order to improve the infrastructure network of South Africa.

The proposed labour complement of the activity will be 60 employees excluding top and senior management based in the head office of the company in Johannesburg. The operation will contribute to the local economy in the area, both directly and through the multiplier effect that its presence will create. Equipment and supplies will be purchased locally, and wages will be spent at local businesses, generating both jobs and income in the area. Although the employees will not be resident on the site, they will be selected from the surrounding community.

g) Period for which the environmental authorization is required

The applicant requests the Environmental Authorisation to be valid for a period of 20 years in order to allow them to process the material from the existing quarry on the property. This period will correspond with the validity of the Inzalo Crushing and Aggregates (Pty) Ltd mining right on the property once approved.

h) Description of the process followed to reach the proposed preferred site.

NB!! This section is not about the impact assessment itself, It is about the determination of the specific site layout having taken into consideration (1) the comparison of the originally proposed site plan, the comparison of that plan with the plan of environmental features and current land uses, the issues raised by interested and affected parties, and the consideration of alternatives to the initially proposed site layout as a result.

i) Details of all 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 applicant identified two alternative sites for the proposed processing activity namely:

1. **Site Alternative 1 (S1) (Preferred Alternative):** Site Alternative 1 entails the use of an area partially disturbed by mining activities as footprint area for the processing of hard rock dolerite within the boundaries of the following GPS coordinates:

SITE ALTERNATIVE 1 (PREFERRED ALTERNATIVE)		
NO	LATITUDE (SOUTH)	LONGITUDE (EAST)
A	25° 52'36.35" S	29°02'36.83"E
B	25°52'23.74"S	29°02'36.66"E
C	25°52'22.33"S	29°02'49.35"E
D	25°52'14.49"S	29°02'48.54"E
E	25°52'13.33"S	29°03'11.52"E
F	25°52'23.66"S	29°03'11.93"E
G	25°52'23.95"S	29°03'16.98"E
H	25°52'38.44"S	29°03'07.66"E

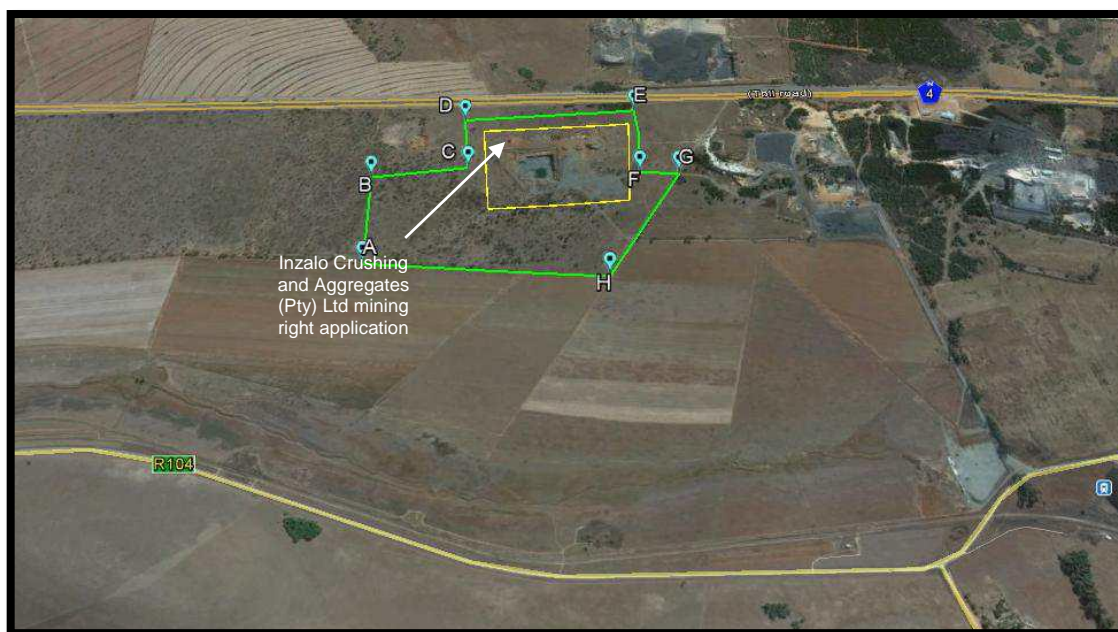


Figure 1: Satellite view indicating the position of Site Alternative 1 (Green outline) in relation to the Mining Right Application (Yellow outline) submitted by Inzalo Crushing and Aggregates (Pty) Ltd.

Site Alternative 1 was identified during the assessment phase of the environmental impact assessment, by the landowner, applicant and project team, as the **preferred alternative** due to the following:

- 3 The boundaries of the proposed footprint area corresponds with the current camp fences of the farm. The proposed activities can therefore easily be separated from animals grazing on the property.

- ⌘ Even though the footprint area will only be 42.75 ha (compared to the 55.3 ha proposed for Site Alternative 2) it can accommodate the proposed activity.
- ⌘ All mining and processing related activities will be contained to an already disturbed area on the farm. As the material to be crushed, at the processing plant, will be obtained from the existing quarry pit, it made sense to position the processing area as close as possible to the quarry. This will not only assist in minimising the visual impact on the surrounding area, but also ensure that existing access roads can be used to transport the material from the quarry to the processing plant.
- ⌘ The amount of undisturbed indigenous vegetation that needs to be removed in order to allow for the establishment of the site will be less than those required for Site Alternative 2.

2. **Site Alternative 2 (S2):** Site Alternative 2 entails the use of an undisturbed area, removed from the quarry pit and mining permit/right areas for the processing of hard rock dolerite within the boundaries of the following GPS coordinates:

SITE ALTERNATIVE 2		
NO	LATITUDE (SOUTH)	LONGITUDE (EAST)
1	25° 52'36.70" S	29°2'48.93"E
2	25°52'36.53"S	29°2'18.29"E
3	25°52'15.47"S	29°2'17.19"E
4	25°52'16.22"S	29°2'47.49"E



Figure 2: Satellite view indicating the position of Site Alternative 2 (Blue Block) in relation to the Mining Right Application (Yellow outline) submitted by Inzalo Crushing and Aggregates (Pty) Ltd

The applicant investigated the possibility of establishing the proposed processing area to the west of the current quarry pit. This alternative was however found **not to be the preferred alternative** due to the following reasons:

- Although the processing area could be established on this section of the farm it will entail the disturbance of a natural area that is currently used for grazing purposes. Opening the area to establish the processing site would therefore have a highly negative impact on the natural vegetation of the surrounding area.

- The footprint area to be disturbed will also be 12.6 ha more than that proposed for Site Alternative 1.
- The farmer will have to re-organize the camps on this farm, as the proposed area falls across numerous camps and hauling of the material from the quarry pit will be over a longer distance. This will require the building of additional access roads (between quarry and processing area) and an increase in the visual impact on the surrounding environment.
- Should the proposed processing activity be established as a removed area from the quarry pit it will greatly reduce the space available to the landowner for agricultural activities, and mining/processing activities will not be contained to a central point on the property.

3. No-go Alternative: The no-go alternative entails no change to the status quo and is therefore a real alternative that needs to be considered. The dolerite to be crushed and screened on site will be sold to clients in the area for building and construction purposes. If however the no-go alternative is implemented the applicant will not be able to process the rock from the quarry pit.

The no-go alternative was **not deemed to be the preferred alternative** as:

- The applicant will not be able to process the available hard rock from the quarry pit. This will negatively affect the current clients from the Bronkhorstspuit, Delmas, Witbank and Kusile areas.
- The landowner will not be able to diversify the income of the property.
- The holders of the mining authorisations on-site will not be able to deliver hard rock, mined from the quarry pit, for processing to B&E International.

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.

During the initial public participation process the stakeholders and I&AP's were informed of the project by means of I&AP comment/notification letters that were sent directly to the contact persons. A 30 days commenting period were allowed which extended to the 16th of January 2016. The following I&AP's and stakeholders were informed of the project:

SURROUNDING LANDOWNERS & INTERESTED AND AFFECTED PARTIES	STAKEHOLDERS
<ul style="list-style-type: none"> ∩ BMJ Coal (Pty) Ltd ∩ Cherangani Trade & Invest 30 CC ∩ Evraz Highveld Steel & Vanadium Ltd ∩ Hensa Boerdery CC ∩ Me MJ Liebenberg 	<ul style="list-style-type: none"> ∩ Department of Agriculture, Rural Development & Land Administration ∩ Department of Economic Development, Environment & Tourism ∩ Department of Labour

<ul style="list-style-type: none"> ↻ Mr A Hertzog ↻ Mr. JCM Hertzog (Landowner) ↻ National Government of the RSA ↻ Rondebult Colliery (Pty) Ltd ↻ Transnet Ltd ↻ Umcebo Prop (Pty) Ltd T/A Glencore ↻ Howards Crushers CC ↻ Inzalo Crushing and Aggregate (Pty) Ltd 	<ul style="list-style-type: none"> ↻ Department of Public Works, Roads & Transport ↻ Department of Rural Development and Land Reform Ehlanzeni District Office (REID) ↻ Department of Water & Sanitation ↻ Emalaheni Local Municipality ↻ Nkangala District Municipality ↻ SANRAL – Northern Region ↻ South African Heritage Resources Agency ↻ Trans African Concessions ↻ Ward Councillor of Ward 29 of Emalaheni Local Municipality
I&AP'S AND STAKEHOLDERS THAT REGISTERED DURING THE INITIAL NOTIFICATION PERIOD	
<ul style="list-style-type: none"> ↻ Evraz Highveld Steel & Vanadium Ltd ↻ Transnet Ltd 	

An advertisement was placed in the Middelburg Observer on the 27th of November 2015 and on-site notices were placed on the 24th of November 2015 at the entrance to the farm and the local café in town.

During the pre-application consultation process DMR confirmed that it will be the competent authority to handle the project and that the EIA application form should be manually submitted to their offices as the SAMRAD system currently cannot handle applications not linked to a mining/processing permit/right. The EIA application form was delivered to the DMR Witbank offices on the 1st of February 2016 and acceptance of the application is still awaited.

In order to comply with the timeframes stipulated in the EIA Regulations of December 2014 the Draft Scoping Report was compiled to allow perusal of the report by the I&AP's and stakeholders listed above. A 30 days commenting period will be allowed for perusal of the documentation by the I&AP's and stakeholders. Comments received on this document will be added to the Final Scoping Report to be submitted to DMR for review. See attached as Appendix 5 proof that the I&AP's and stakeholders were contacted.

iii) Summary of issues raised by I&As

(Complete the table summarising comments and issues raised, and reaction to those responses)

Interested and Affected Parties		Date Comments Received	Issues raised	EAP's response to issues raised by the applicant
List the names of persons consulted in this column, and Mark with an X where those must be consulted were in fact consulted				
AFFECTED PARTIES				
Landowner/s	X			
Mr JCM Hertzog			Mr. Hertzog signed a landowner consent letter to confirm that he is aware of the studies being conducted on his property. See attached under Appendix 5.	
Lawful occupier/s of the land				
Howards Crusher CC	X	The applicant has signed agreements with Howards Crushers CC and Inzalo Crushing and Aggregate (Pty) Ltd with regard to the proposed activity (See Appendix 5). As the material to be processed at the proposed area will be sourced from the mining areas of these parties, no objection was raised.		
Inzalo Crushing and Aggregates (Pty) Ltd	X			
Landowners or lawful on adjacent properties				
	X			
<ul style="list-style-type: none"> 3 BMJ Coal (Pty) Ltd 3 Cherangani Trade & Invest 30 CC 3 Hensa Boerdery CC 3 Me MJ Liebenberg 3 Mr A Hertzog 3 Mr. JCM Hertzog (Landowner) 3 National Government of the RSA 3 Rondebult Colliery (Pty) Ltd 3 Umcebo Prop (Pty) Ltd T/A Glencore 3 Mr. A Hertzog 3 Mr. S Bruwer 3 Mr. B Grove 3 Mr. G Joubert 3 Mr. M Marson 3 Mr. LA van Zyl 3 Mr. N Marais (Kranskop Wyne (Pty Ltd) 	X	No comments received to date	N/A	N/A
Evraz Highveld Steel & Vanadium Ltd	X	18 December 2015	Me Thia Oberholzer requested herself and colleagues from Evraz Highveld Steel & Vanadium to be registered as I&AP	Evraz Highveld Steel & Vanadium Ltd was registered as I&AP and will be provided with a copy of the Draft Scoping Report to comment on.
Transnet Ltd	X	30 November 2015	Transnet responded that the application does not affect Transnet property.	Greenmined accompanied the Transnet representatives to the site on the 22 nd of January 2016. On-site it was again confirmed that the proposed activity will not affect any railway line infrastructure.
		18 January 2016	Transnet responded that they had no objection to the proposed activity provided that the activity	

			will not have any negative impact on the railway line and other associated infrastructure.	
		21 January 2016	Transnet requested an inspection to ascertain themselves of the proposed processing area in relation to the railway line.	
Municipal councilor	X	No comments received to date	N/A	N/A
Municipality	X	No comments received to date	N/A	N/A
Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWA etc	X			
Department of Public Works, Roads & Transport	X	No comments received to date	N/A	N/A
Trans African Concessions	X	No comments received to date	N/A	N/A
SANRAL – Northern Region	X	No comments received to date	N/A	N/A
South African Heritage Resources Agency	X	No comments received to date	N/A	N/A
Communities				
No resident communities were identified in the immediate surrounding area.				
Dept. Land Affairs	X	To date no response was received from the Department of Land Affairs	N/A	N/A
Traditional Leaders				
No traditional authorities are resident in the immediate surrounding area.				
Dept. Environmental Affairs	X	No comments received to date	N/A	N/A

Other Competent Authorities affected				
Department of Agriculture, Rural Development & Land Administration	X	No comments received to date	N/A	N/A
Department of Labour	X	No comments received to date	N/A	N/A
Department of Rural Development and Land Reform Ehlanzeni District Office (REID)	X	No comments received to date	N/A	N/A
Department of Water & Sanitation	X	No comments received to date	N/A	N/A
Emalahleni Local Municipality	X	No comments received to date	N/A	N/A
Nkangala District Municipality	X	No comments received to date	N/A	N/A
Ward Councilor of Ward 29 of Emalahleni Local Municipality	X	No comments received to date	N/A	N/A
<u>OTHER AFFECTED PARTIES</u>				
<u>INTERESTED PARTIES</u>				

iv) The Environmental attributes associated with the sites

(1) Baseline Environment

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

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

This section describes the biophysical, cultural and socio-economic environment that may be affected and the baseline conditions which are likely to be affected by the proposed processing activity. A summary of the affected environment is provided and more detailed studies focused on significant environmental aspects of the proposed project will be provided during the impact assessment phase.

A detailed site selection and sensitivity analysis were conducted for the proposed processing project and it was indicated that the proposed site (Site alternative 1) is in a preferred and acceptable development area. A comprehensive Environmental Management Programme (EMPr) is to be developed and implemented to mitigate and minimise the impacts during the site establishment/construction and operational

phases. The EIA will investigate the impacts summarised in the baseline sections below.

PHYSICAL ENVIRONMENT

CLIMATE

According to SA Explorer the Emalahleni region normally receives approximately 533 mm of rain per year, with most rainfall occurring during summer. The lowest rainfall (0mm) is received in June and the highest (105 mm) in January. The monthly distribution of average daily maximum temperatures shows that the average midday temperatures for the Emalahleni region range from 17.2°C in June to 25.8°C in January. The region is the coldest during July when the mercury drops to 1.7°C on average during the night.

AIR AND NOISE QUALITY

The background air quality of the surrounding area is highly impacted on by vehicles travelling along the N4 and other mining activities, such as those of the neighbouring coal mines. Given the surrounding extent of mostly covered vegetated areas, no extreme dust generation under windy conditions is experienced.

Emission into the atmosphere is controlled by the National Management: Air Quality Act, 2004. The proposed activity at the site will however not trigger an application in terms of the Air Quality Act as the emissions to be produced at the processing area will only entail dust generation due to the disturbance of soil. Dust will be generated by the movement of earthmoving equipment, the loading of material, crushing and transporting of material from site.

The trucks driving on site has to comply with the speed limit and since the material is coarse and heavy, minimal dust is generated during the transportation of material from the quarry. Loads will be flattened to ensure that minimal spillage of the material takes place during transportation. Topsoil stockpiles will be planted with indigenous grass species to ensure that exposed surface areas are minimised, reducing windblown dust from the site. The vegetation will also assist in capturing wind born dust and minimising the spread of dust from the site.

Dust generation on the access roads as well as the crusher plant can be managed through the implementation of dust suppression measures via water carts and a sprinkler system. The applicant has to conduct formal dust monitoring on site to provide management with an effective management tool for mitigating the impact of the processing activity on the surrounding environment with regard to dust pollution.

The background noise level of the surrounding area is highly impacted on by traffic travelling along the N4 and R104 roads passing the property. The activities of the neighbouring coal mines to the east also contribute to the ambient noise of the area.

Due to the nature of the proposed activity, noise will be generated as a result of crushing and screening as well as loading and stockpiling of material.

The nuisance value of noise generated by heavy earthmoving equipment and the crusher plant to residence in the near vicinity is deemed to be of low – medium significance, as the processing area is expected to be operational 24 hours a day for 6 days a week. The distance of residents from the processing area (>2 km) will however assist in the mitigation of the noise impact. All vehicles associated with the proposed activity will also be equipped with silencers and maintained in a road worthy condition in terms of the National Road Traffic Act, 1996 (Act No 93 of 1996).

TOPOGRAPHY

The topography of the study area is representative of the slightly to moderate undulating plains between Belfast and the eastern side of Johannesburg. The gradient of both Site Alternative 1 (S1) and Site Alternative 2 (S2) is flat sloping slightly towards the south. As a result of the existing quarry pit on the property some irregular and steep sides can be seen on site. The proposed project will not have an impact on the topography as all activities will be conducted at surface level.

GEOLOGY AND SOIL

The geology of the area is characterised by Mucina and Rutherford, 2006 as quartzite ridges of the Witwatersrand Supergroup and the Pretoria Group as well as the Selon River Formation of the Rooiberg Group. The supporting soils are of various qualities with shallow Glenrosa and Mispah forms found especially on rocky ridges.

The predominant feature of the study area is the dolerite intrusion. Dolerite is visible and widely dispersed on the study area as well as the surrounding areas. The dolerite occurs in various degrees of weathering and the applicant intends to crush the hard rock to various sized aggregate.

The applicant will process the rock mined from the existing quarry, on site, in order to produce aggregate that can be sold to the construction industry. As this application is only for the crushing and screening of already mined material, the project will not have an impact on the geology or soil of the study area.

SURFACE AND GROUNDWATER

The site is located in Water Management Area 4 known as the Elands, Wilge, Steelpoort and Olifants WMA and falls into the quaternary drainage area B20G.

A tributary of the Saalklapspruit flows approximately 1.2 km south of the proposed processing area. As the proposed activities will be contained within the boundaries of the processing area the tributary should not be affected by the project. No river diversions will be needed and no wetland occurs within 500 m radius of the site.

Although the depth of the groundwater is unknown it is presumed to be deeper than 20 m as the existing quarry pit has been mined to 20 m and groundwater was not intersected. As all activities will be on surface level no impact on the groundwater could be identified. During the operational phase consideration will be given to storm water management in order to avert any impact on surface- or groundwater.

BIOLOGICAL ENVIRONMENT

GROUNDCOVER

The vegetation type of the study area, Rand Highveld Grassland (Gm 11), is regarded as endangered with almost half of it being transformed mostly by cultivation, plantations, urbanisation or dam-building. The vegetation of the Rand Highveld Grassland is species-rich, wiry, sour grassland alternative with low, sour shrubland on rocky outcrops and steeper slopes. The most common grasses on the plains belong to the genera *Themeda*, *Eragrostis*, *Heteropogon* and *Elionurus*. A high diversity of herbs, many belonging to the Asteraceae, is also a typical feature (Mucina and Rutherford, 2006).

Although the footprint of the proposed processing area falls over areas partially disturbed by agricultural and mining activities, the establishment and operation of the site will still require the removal of indigenous vegetation. The vegetation to be removed at the site mainly consists of a well-established grass layer representative of that of the Rand Highveld Grassland vegetation type, as well as Sweet thorn trees (*Acacia karoo*) especially on the south-western section of the proposed area. Although the grass component of the area could re-establish relatively fast upon closure of the site it is proposed that the applicant strive to minimise the amount of vegetation to be removed.

The applicant proposed the conservation of a 3.7 ha area within the footprint of the proposed processing area in an attempt to preserve some of the indigenous vegetation on-site. This area is characterized by a dense stand of *Acacia* trees and it is proposed that this section be demarcated as no-go area for the duration of the operational phase.

At the time of the inspection no protected or red data species could be identified in the proposed footprint area. However it is proposed that upon receipt of the EA and prior to site establishment of infrastructure the ECO conduct a walkthrough with site management in order to identify trees/bushes that may be removed as well as any bulbous plants that may need translocation permits. Plants that can be rescued from the footprint area have to be transplanted to a safe area resembling the plants original habitat. This has to be supervised by the ECO. The wood of the trees that has to be removed from the footprint area could be offered as fire wood to the landowner, employees or local community.

Due to the previous disturbance of the vegetation the presence of scattered weeds/invaser plants such as *Solanum sisymbriifolium* (Dense-thorned bitter apple) and *Asclepias fruticosa* (Milkweed) were identified on-site. Control of weeds and alien invasive plant species is an important aspect during all phases of the proposed activities. An alien invasive plant management plan must be developed for the site and needs to be implemented during the construction/site establishment-, operational-, decommissioning phase and 12 months aftercare period to address germination of problem plants in the area.

FAUNA

The resident fauna found during the site inspection mainly comprised of birds such as doves, starlings, sparrows and crows as well as commonly found insects, reptiles and a few small mammals. No protected or red data specie could be identified to be resident within the footprint area of the proposed processing area.

The fauna at the site will not be impacted by the proposed processing activity as they will be able to move away or through the site, without being harmed. Workers must be educated and managed to ensure that no fauna at the site is harmed. Upon commencement of the proposed processing activities, the processing area will be fenced to prevent livestock, such as cattle and sheep, wandering into the work areas.

HUMAN ENVIRONMENT

CULTURAL AND HERITAGE ENVIRONMENT

The area on which the proposed processing area is located consist of an area previously impacted on by mining activities and as such the chances of recovering archaeological material are limited. HCAC – Heritage Consultants were appointed to investigate the study area for any presence of cultural or heritage artefacts that might require protection. The findings and recommendations of the Heritage Impact Assessment (HIA) will be included in the EIA report. The HIA will also be uploaded onto the SAHRIS website of the South African Heritage Resources Agency (SAHRA) for their perusal and approval.

SOCIO-ECONOMIC ENVIRONMENT

Social and Economic Background

The property earmarked for the proposed activity is situated in the Emalahleni Local Municipality forming one of the six local municipalities in the Nkangala District Municipality.

The Emalahleni local municipal area forms part of the western regions of the Mpumalanga province and borders Gauteng province. The southern parts of

Emalahleni Local Municipality form part of the precinct referred to as the Energy Mecca of South Africa, due to its rich deposits of coal reserves and power stations such as Kendal, Matla, Duvha and Ga-Nala.

The economic growth for Emalahleni from 2001 – 2011 was 3.58% with 190 662 people being economically active (employed or unemployed but looking for work). Of the above figure 27,3% of the economically active persons are unemployed. Of the 101 062 economically active youth (15 – 34 years) in the area, 36,0% are unemployed.

Population Dynamics

According to Census 2011, Emalahleni Local Municipality has a total population of 395 466, of whom 81,3% are black African, 15,7% are white, with the other population groups making up the remaining 3,0% (Indian/Asian/Coloured).

DEMOGRAPHICS	
Young (0-14)	25,2%
Working Age (15-64)	71,2%
Elderly (65+)	3,6%
Dependency ratio	40,4%

GENDER	
Males (2011)	53%
Females (2011)	47%

HOUSEHOLD STRUCTURE	
Number of households	119,874
Average household size	3,2
Female headed households	27,9%
Formal dwellings	77,2%
Housing owned/paying off	45,3%
% Population in Informal Settlements	5%
% Population in Urban Areas	95%

HIV, Health and Wellbeing

HIV, AIDS and Tuberculosis contribute significantly to the burden of disease faced by the South African Government. Huge amounts of resources are expended on serving the health needs of citizens. If the situation continues unabated, it creates a situation whereby other services are sacrificed in order to meet the high costs of providing health services to a disproportionately large section of the population. It is for this reason that the South African Government has placed HIV/AIDS at the top of its health priorities.

This goal is also in line with the Millennium Development Goals of eradicating HIV/AIDS by 2015. The Emalahleni Metro is equally challenged by its vulnerability to

HIV/AIDS risks. It can never be over-emphasised that the situation needs serious and urgent attention.

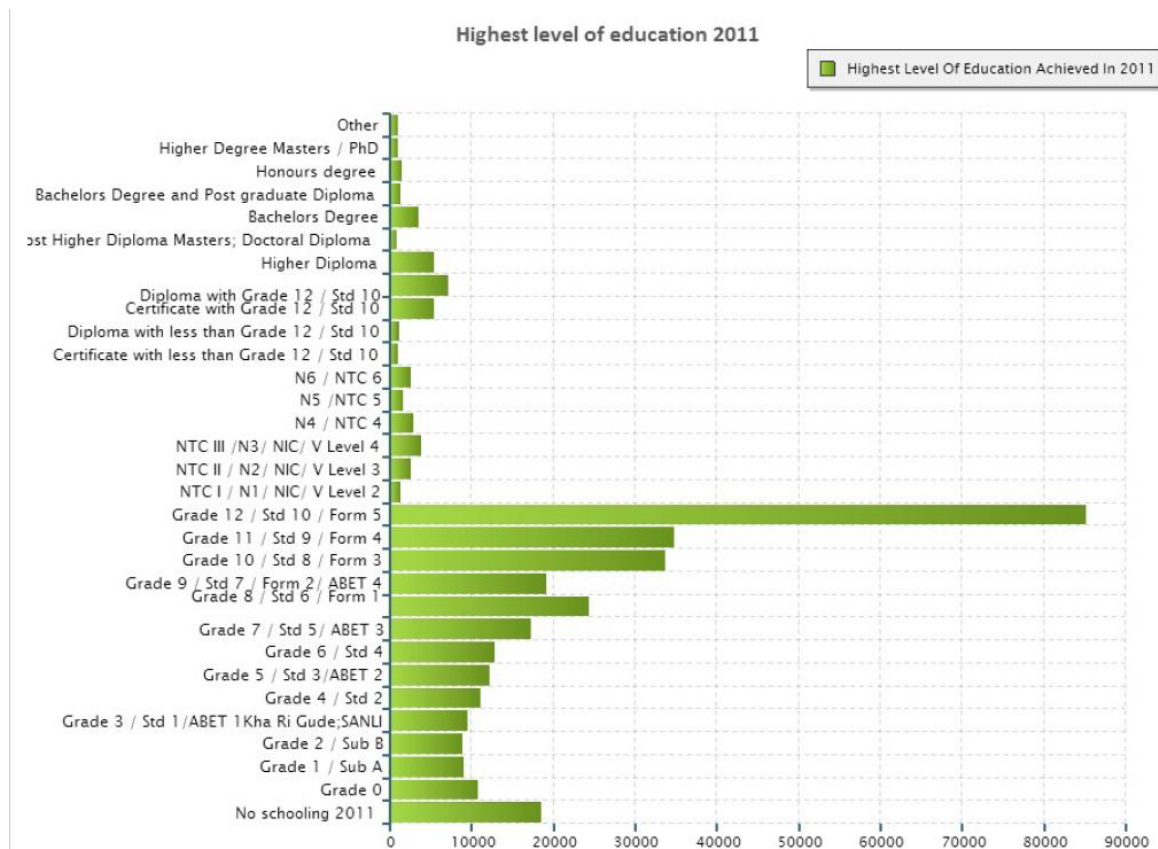
For South Africa to achieve its goal of eradicating HIV/AIDS by 2015, the responsibility lies with local municipalities, especially metropolitan municipalities, given their expanded functions which include the provision of health services and local municipalities' proximity to local residents.

The applicant acknowledges that HIV/AIDS is a national problem and will encourage employees to get tested and know their status by participating in local HIV / AIDS awareness campaigns. Educating employees on the subject matter is important and therefore the project will support the local municipality in its programs.

Education and Employment

The table and graph below provides information on the education levels of the region:

EDUCATION	
No schooling aged 20+	5,8%
Higher education aged 20+	13,9%
Matric aged 20+	31,4%



The creation of employment opportunities amongst semi- and unskilled persons remains a challenge. As a result, unemployment figures are still unacceptably high at 27.3% with youth unemployment at 36%.

It is proposed that sixty employees will be needed at the processing area. All the required labour will be sourced within the local Emalahleni municipal region and nearby surrounding areas. The proposed project will therefore have a positive impact on the employment figures of the region through job creation.

Income levels

From 2001 to 2011 the percentage of people earning less than R3 500/month grew at 1,20% per annum. From 2001 to 2011 the percentage of people earning between R3 500 to R12 801/month grew at 14,3% per annum. People in Emalahleni are relatively poor with almost 57% (of the economically active population) earning no income at all.

There has been significant growth in the income bracket earning between R3 500 and R12 800 p/month.

Basic Services in Emalahleni

HOUSING	
% population benefit from weekly refuse removal	67.2%
ELECTRICITY	
% population has access to electricity for lighting	73.4%
WATER & SANITATION	
% population have access to piped water inside the dwelling	54.9%
% population have a flush toilet connected to sewerage	68.8%

Key Economic activities

The dominant economic sector in Emalahleni is clearly mining, which contributes to more than 46% of the GVA of the municipality. The type of mining done in Emalahleni is also relatively labour intensive as it employs more than 28% of Emalahleni people. All other economic sectors contribute less than 10% each to the GVA of Emalahleni.

The proposed processing activity plans on employing 60 employees that support approximately 480 dependents. The value of the employment opportunities during the first year is expected to be in the vicinity of R7,7 million. Due to the fact that all employees reside in Emalahleni, it is fair to presume that the majority of monthly earned in salaries will be spent in the local area. Indirectly through the payment for services and suppliers the proposed activity also supports employment of the procurement partners.

(b) Description of the current land uses.

Portion 30 and 42 of the farm Doornrug 302 JS is situated in an agricultural setting between the National Road (N4) and the R104, approximately 8km from the town of Balmoral. The land use of the property comprise of the following:

- Agriculture – Mainly for grazing purposes
- Mining – Howard Crushers CC holds a mining permit for the existing quarry on the property and Inzalo Crushing and Aggregates (Pty) Ltd applied for a mining right to extend the quarry pit.

The following table provides a description of the land uses and/or prominent features that currently occur within a 500 m radius of the site:

Land use character	YES	NO	Description
Natural area	YES		The processing area is surrounded by natural areas used for agricultural purposes. The proposed activity will entail the crushing and screening of material from the existing quarry over a section of these natural areas.
Low density residential		NO	
Medium density residential		NO	
High density residential		NO	
Informal residential		NO	
Retail commercial & warehousing		NO	
Light industrial		NO	
Medium industrial		NO	
Heavy industrial		NO	
Power station		NO	
Office/consulting room		NO	
Military or police base/station/compound		NO	
Spoil heap or slimes dam	YES		An old gypsum mine border the property to the east. The proposed processing activities will not have an impact on the spoil heaps or slimes dams as the activities will be contained within the borders of the site.
Quarry, sand or borrow pit	YES		This footprint of the application lays directly next to the existing quarry pit on the property.
Dam or reservoir		NO	
Hospital/medical centre		NO	
School/ creche		NO	
Tertiary education facility		NO	
Church		NO	
Old age home		NO	
Sewage treatment plant		NO	
Train station or shunting yard		NO	
Railway line		NO	
Major road (4 lanes or more)	YES		The N4 passes the proposed site ±50 m to the north. The proposed activity is not anticipated to have an impact on the N4 or road users thereof, as the vehicles visiting the mine will make use of the

			R104 to access the property. No access directly onto the N4 will be allowed.
Airport		NO	
Harbour		NO	
Sport facilities		NO	
Golf course		NO	
Polo fields		NO	
Filling station		NO	
Landfill or waste treatment site		NO	
Plantation		NO	
Agriculture	YES		As mentioned above the proposed processing area is bordered by areas used for agricultural purposes, in particular grazing.
River, stream or wetland		NO	
Nature conservation area		NO	
Mountain, hill or ridge		NO	
Museum		NO	
Historical building		NO	
Protected Area		NO	
Graveyard		NO	
Archaeological site		NO	
Other land uses (describe)		NO	

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

SPECIFIC ENVIRONMENTAL FEATURES

VEGETATION

The site was historically covered by vegetation representative of the Rand Highveld Grassland (Gm 11) currently regarded as endangered. However the proposed footprint of the processing area has been partially transformed by agricultural and mining activities and very little natural Rand Highveld Grassland vegetation remains on site.

The applicant proposed that the stand of *Acacia* trees (3.7 ha) within the footprint area be protected as no-go area throughout the operational phase of the project.

EXISTING INFRASTRUCTURE

The infrastructure existing within close proximity of the application area mainly consist of the mining infrastructure used to mine the dolerite of the existing quarry. This infrastructure is however contained to the mining permit area of Howards Crushers CC and no infrastructure other than the farm fences exists within the boundaries of the proposed processing area.

The existing roads will be used to gain access to the processing area. Access to the site will be from the R104 along the existing gravel roads to the site. Due to the 10 ton restriction on the western side of the R104, trucks carrying material will only travel from

the site in an eastern direction along the R104. No truck exceeding 10 ton will cross the bridge on the R104.

(d) Environmental and current land use map.
(Show all environmental, and current land use features)

The environmental and current land use map is attached as Appendix 6.

v) Impacts identified

(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 consultants with affected parties together with the significance, probability and duration of the impacts)

The following potential impacts were identified of each main activity in each phase. The significance rating was determined using the methodology as explained under vi) *Methodology Used in Determining and Ranking the Significance*. The impact rating listed below was determined for each impact **prior** to bringing the proposed mitigation measures into consideration. The degree of mitigation indicates the possibility of partial, full or no mitigation of the identified impact.

STRIPPING AND STOCKPILING OF TOPSOIL:

Visual intrusion associated with the establishment of the processing area

Rating: Medium

Degree of Mitigation: Partial

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	4	2	2.7	5	5	5	13.5

Dust nuisance caused by the disturbance of the soil

Rating: Medium

Degree of Mitigation: Partial

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	2	2	2	5	5	5	10

Noise nuisance caused by machinery stripping and stockpiling the topsoil

Rating: Low

Degree of Mitigation: Partial

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	1	1	1.3	4	3	3.5	4.6

Infestation of the topsoil heaps by weeds or invader plants

Rating: Low – Medium

Degree of Mitigation: Fully Mitigated

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
3	4	1	2.7	4	2	3	8.1

Loss of topsoil due to incorrect storm water management

Rating: Low – Medium

Degree of Mitigation: Fully Mitigated

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
3	4	1	2.6	5	2	3.5	9.1

Contamination of area with hydrocarbons or hazardous waste materials

Rating: Medium

Degree of Mitigation: Fully Mitigated

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
4	4	2	3.3	4	4	4	13.2

Potential disturbance to cultural or heritage aspects present on site

Rating: Medium – High

Degree of Mitigation: Fully Mitigated

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
5	5	1	3.6	4	5	4.5	16.2

Potential impact on surrounding mining infrastructure

Rating: Low – Medium

Degree of Mitigation: Fully Mitigated

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
4	3	1	2.7	3	1	2	5.4

Potential impact on fauna and flora within footprint area

Rating: Medium

Degree of Mitigation: Fully Mitigated

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
3	5	1	3	4	5	4.5	13.5

Landowner to re-organize grazing camps should S2 be implemented

Rating: Medium

Degree of Mitigation: Fully Mitigated

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
4	5	2	3.6	5	1	3	10.8

Mining related projects not contained to a single area on the property (Site Alternative 2)

Rating: High

Degree of Mitigation: Fully Mitigated

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
3	5	4	4	5	5	5	20

CRUSHING AND SCREENING OF RECOVERED MATERIAL:

Visual intrusion associated with the crushing and screening activities

Rating: Medium – High

Degree of Mitigation: Partial

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	5	4	3.6	5	5	5	18

Dust nuisance due to crushing and screening activities

Rating: Medium – High

Degree of Mitigation: Fully Mitigated

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
3	5	2	3.3	5	5	5	16.5

Noise nuisance generated by crushing and screening activities

Rating: Medium

Degree of Mitigation: Partial

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	5	2	3	4	5	4.5	13.5

Contamination of area with hydrocarbons or hazardous waste materials

Rating: Medium

Degree of Mitigation: Fully Mitigated

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
4	4	1	3	4	5	4.5	13.5

Weed and invader plant infestation of the area

Rating: Medium

Degree of Mitigation: Fully Mitigated

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
3	5	1	3	5	2	3.5	10.5

Potential disturbance to cultural or heritage aspects present on site

Rating: Medium – High

Degree of Mitigation: Fully Mitigated

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
5	5	1	3.6	4	5	4.5	16.2

Potential impact on fauna and flora within footprint area

Rating: Medium

Degree of Mitigation: Fully Mitigated

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
3	5	1	3	4	5	4.5	13.5

STOCKPILING OF AGGREGATE

Dust nuisance due to loading and vehicles transporting the material

Rating: Medium – High

Degree of Mitigation: Fully Mitigated

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
3	5	2	3.3	5	5	5	16.5

Deterioration of access roads

Rating: High

Degree of Mitigation: Fully Mitigated

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
3	5	4	4	5	5	5	20

Loss of stockpiled material due to incorrect storm water handling

Rating: Low – Medium

Degree of Mitigation: Fully Mitigated

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
3	5	1	2.3	4	2	3	6.9

SLOPING AND LANDSCAPING UPON CLOSURE OF THE SITE

Soil erosion

Rating: Low – Medium

Degree of Mitigation: Fully Mitigated

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
4	4	1	3	3	3	3	9

Dust nuisance caused during landscaping activities

Rating: Low – Medium

Degree of Mitigation: Partial

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	3	1	2	4	5	4.5	9

Noise nuisance caused by machinery

Rating: Low – Medium

Degree of Mitigation: Partial

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
2	1	2	1.6	3	5	4	6.4

Contamination of area with hydrocarbons or hazardous waste materials

Rating: Low – Medium

Degree of Mitigation: Fully Mitigated

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
4	4	1	3	3	1	2	6

REPLACING OF TOPSOIL AND REHABILITATION OF DISTURBED AREA:

Loss of reinstated topsoil due to the absence of vegetation

Rating: Low – Medium

Degree of Mitigation: Fully Mitigated

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
3	3	1	2.3	4	2	3	6.9

Infestation of the area by weeds and invader plants

Rating: Low – Medium

Degree of Mitigation: Fully Mitigated

			Consequence			Likelihood	Significance
Severity	Duration	Extent		Probability	Frequency		
3	4	1	2.6	5	2	3.5	9.1

- vi) **Methodology used in determining the significance of environmental impacts**
(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)

Methodology for the assessment of the potential environmental, social and cultural impacts

DEFINITIONS AND CONCEPTS:

Environmental significance:

The concept of significance is at the core of impact identification, evaluation and decision-making. The concept remains largely undefined and there is no international consensus on a single definition. The following common elements are recognized from the various interpretations:

- Environmental significance is a value judgment
- The degree of environmental significance depends on the nature of the impact
- The importance is rated in terms of both biophysical and socio-economic values
- Determining significance involves the amount of change to the environment perceived to be acceptable to affected communities.

Significance can be differentiated into impact magnitude and impact significance. Impact magnitude is the measurable change (i.e. intensity, duration and likelihood). Impact significance is the value placed on the change by different affected parties (i.e. level of acceptability) (DEAT (2002) Impact Significance, Integrated Environmental Management, Information Series 5).

The concept of risk has two dimensions, namely the consequence of an event or set of circumstances, and the likelihood of particular consequences being realised (Environment Australia (1999) Environmental Risk Management).

Impact

The positive or negative effects on human well-being and / or the environment.

Consequence

The intermediate or final outcome of an event or situation OR it is the result, on the environment, of an event.

Likelihood

A qualitative term covering both probability and frequency.

Frequency

The number of occurrences of a defined event in a given time or rate.

Probability

The likelihood of a specific outcome measured by the ratio of a specific outcome to the total number of possible outcomes.

Environment

Surroundings in which an organisation operates, including air, water, land, natural resources, flora, fauna, humans and their interrelation (ISO 14004, 1996).

Methodology that will be used

The environmental significance assessment methodology is based on the following determination:

$$\text{Environmental Significance} = \text{Overall Consequence} \times \text{Overall Likelihood}$$

Determination of Overall Consequence

Consequence analysis is a mixture of quantitative and qualitative information and the outcome can be positive or negative. Several factors can be used to determine consequence. For the purpose of determining the environmental significance in terms of consequence, the following factors were chosen: **Severity/Intensity, Duration and Extent/Spatial Scale**. Each factor is assigned a rating of 1 to 5, as described in the tables below.

Determination of Severity / Intensity

Severity relates to the nature of the event, aspect or impact to the environment and describes how severe the aspects impact on the biophysical and socio-economic environment.

Table 1 will be used to obtain an overall rating for severity, taking into consideration the various criteria.

Rating of Severity:

Type of criteria	Rating				
	1	2	3	4	5
Quantitative	0-20%	21-40%	41-60%	61-80%	81-100%
Qualitative	Insignificant / Non-harmful	Small / Potentially harmful	Significant/ Harmful	Great/ Very harmful	Disastrous Extremely harmful
Social/ Community response	Acceptable / I&AP satisfied	Slightly tolerable / Possible objections	Intolerable/ Sporadic complaints	Unacceptable / Widespread complaints	Totally unacceptable / Possible legal action
Irreversibility	Very low cost to mitigate/ High potential to mitigate impacts to level of insignificance/ Easily reversible	Low cost to mitigate	Substantial cost to mitigate/ Potential to mitigate impacts/ Potential to reverse impact	High cost to mitigate	Prohibitive cost to mitigate/ Little or no mechanism to mitigate impact Irreversible
Biophysical (Air quality, water quantity and quality, waste)	Insignificant change / deterioration or disturbance	Moderate change / deterioration or disturbance	Significant change / deterioration or disturbance	Very significant change / deterioration or disturbance	Disastrous change / deterioration or disturbance

production, fauna and flora)					
---------------------------------	--	--	--	--	--

Determination of Duration

Duration refers to the amount of time that the environment will be affected by the event, risk or impact, if no intervention e.g. remedial action takes place.

Rating of Duration:

Rating	Description
1	Up to ONE MONTH
2	ONE MONTH to THREE MONTHS (QUARTER)
3	THREE MONTHS to ONE YEAR
4	ONE to TEN YEARS
5	Beyond TEN YEARS

Determination of Extent/Spatial Scale

Extent or **spatial scale** is the area affected by the event, aspect or impact.

Rating of Extent / Spatial Scale:

Rating	Description
1	Immediate, fully contained area
2	Surrounding area
3	Within Business Unit area of responsibility
4	Within the farm/neighboring farm area
5	Regional, National, International

Determination of Overall Consequence

Overall consequence is determined by adding the factors determined above and summarized below, and then dividing the sum by 3.

Example of calculating Overall Consequence

Consequence	Rating
Severity	Example 4
Duration	Example 2
Extent	Example 4
SUBTOTAL	10
TOTAL CONSEQUENCE: (Subtotal divided by 3)	3.3

Determination of Likelihood:

The determination of likelihood is a combination of Frequency and Probability. Each factor is assigned a rating of 1 to 5, as described below and in tables 6 and 7.

Determination of Frequency

Frequency refers to how often the specific activity, related to the event, aspect or impact, is undertaken.

Rating of Frequency:

Rating	Description
1	Once a year or once/more during operation
2	Once/more in 6 Months
3	Once/more a Month
4	Once/more a Week
5	Daily

Determination of Probability

Probability refers to how often the activity or aspect has an impact on the environment.

Rating of Probability:

Rating	Description
1	Almost never / almost impossible
2	Very seldom / highly unlikely
3	Infrequent / unlikely / seldom
4	Often / regularly / likely / possible
5	Daily / highly likely / definitely

Overall Likelihood

Overall likelihood is calculated by adding the factors determined above and summarized below, and then dividing the sum by 2.

Example of calculating Overall Likelihood

Consequence	Rating
Frequency	Example 4
Probability	Example 2
SUBTOTAL	6
TOTAL LIKELIHOOD (Subtotal divided by 2)	3

Determination of Overall Environmental Significance:

The multiplication of overall consequence with overall likelihood will provide the environmental significance, which is a number that will then fall into a range of **LOW, LOW-MEDIUM, MEDIUM, MEDIUM-HIGH** or **HIGH**, as shown in the table below.

Determination of Overall Environmental Significance

Significance or Risk	Low	Low-Medium	Medium	Medium-High	High
Overall Consequence X Overall Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 - 19.9	20 - 25

Qualitative description or magnitude of Environmental Significance

This description is qualitative and is an indication of the nature or magnitude of the Environmental Significance. It also guides the prioritizations and decision making process associated with this event, aspect or impact.

Description of Environmental Significance and related action required

Significance	Low	Low-Medium	Medium	Medium-High	High
Impact Magnitude	Impact is of very low order and therefore likely to have very little real effect. Acceptable.	Impact is of low order and therefore likely to have little real effect. Acceptable.	Impact is real, and potentially substantial in relation to other impacts. Can pose a risk to company	Impact is real and substantial in relation to other impacts. Pose a risk to the company. Unacceptable	Impact is of the highest order possible. Unacceptable. Fatal flaw.
Action Required	Maintain current management measures. Where possible improve.	Maintain current management measures. Implement monitoring and evaluate to determine potential increase in risk. Where possible improve	Implement monitoring. Investigate mitigation measures and improve management measures to reduce risk, where possible.	Improve management measures to reduce risk.	Implement significant mitigation measures or implement alternatives.

Based on the above, the significance rating scale has been determined as follows:

High Of the highest order possible within the bounds of impacts which could occur. In the case of negative impacts, there would be no possible mitigation and / or remedial activity to offset the impact at the spatial or time scale for which it was predicted. In the case of positive impacts, there is no real alternative to achieving the benefit.

Medium-High Impacts of a substantial order. In the case of negative impacts, mitigation and / or remedial activity would be feasible but difficult, expensive, time-consuming or some combination of these. In the case of positive impacts, other means of achieving this benefit would be feasible, but these would be more difficult, expensive, time-consuming or some combination of these.

Medium Impact would be real but not substantial within the bounds of those, which could occur. In the case of negative impacts, mitigation and / or remedial activity would be both feasible and fairly easily possible, In case of positive impacts; other means of achieving these benefits would be about equal in time, cost and effort.

Low-Medium Impact would be of a low order and with little real effect. In the case of negative impacts, mitigation and / or remedial activity would be either easily achieved or little would be required, or both. In case of positive impacts alternative means for achieving this benefit would likely be easier, cheaper, more effective, less time-consuming, or some combination of these.

Low Impact would be negligible. In the case of negative impacts, almost no mitigation and or remedial activity would be needed, and any minor steps, which might be needed, would be easy, cheap and simple. In the case of

positive impacts, alternative means would almost all likely be better, in one or a number of ways, than this means of achieving the benefit

Insignificant There would be a no impact at all – not even a very low impact on the system or any of its parts.

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)

Site Alternative 1 (S1) entails the use of an area partially disturbed by mining activities. The area proposed for S1 corresponds with the current camp fences of the farm and all mining and processing related activities will be contained to an already impacted area on the farm. The footprint area to be disturbed will be 12.55 ha smaller than that proposed for S2. S1 is deemed to be a more preferred alternative than the area proposed for S2.

S2 will necessitate the use of an area currently used for grazing purposes and the disturbance of a larger area than that proposed for S1.

Potential Negative Impacts associated with the project (Site Alternative 1) includes:

- ⌘ Visual intrusion associated with the establishment of the processing area and crushing and screening activities
- ⌘ Dust nuisance caused by the disturbance of the soil, crushing activities and loading and transporting of material
- ⌘ Noise nuisance caused by machinery stripping and stockpiling the topsoil, crushing activities
- ⌘ Infestation of the topsoil heaps and processing area by weeds or invader plants
- ⌘ Loss of topsoil due to incorrect storm water management
- ⌘ Contamination of area with hydrocarbons or hazardous waste materials
- ⌘ Potential disturbance to cultural or heritage aspects present on site
- ⌘ Potential impact on surrounding mining infrastructure
- ⌘ Potential impact on fauna and flora within footprint area
- ⌘ Landowner to re-organize grazing camps should S2 be implemented
- ⌘ Mining related projects not contained to a single area on the property (S2)
- ⌘ Deterioration of access roads
- ⌘ Loss of stockpiled material due to incorrect storm water handling
- ⌘ Soil erosion
- ⌘ Loss of reinstated topsoil due to the absence of vegetation

Potential Positive Impacts associated with the project (Site Alternative 1) includes:

- ∞ Work opportunities for up to sixty employees
- ∞ The holders of the mining authorisations on the farm will be able to supply B&E International with the hard rock mined from the quarry pit.
- ∞ The applicant will be able to continue supplying in the need of his current clients of the surrounding areas.

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 preliminary mitigation measures are proposed to address/minimize the impact of the proposed activity on the surrounding environment:

Visual Mitigation:

In order to mitigate the visual impact of the proposed activity on the surrounding environment the following mitigation measures are proposed:

- ∞ The site needs to have a neat appearance and be kept in good condition at all times.
- ∞ Upon closure the site needs to be rehabilitated and topsoil needs to be replaced to ensure that the visual impact on the aesthetic value of the area is kept to a minimum.
- ∞ As many as possible of the *Acacia* trees, growing within the footprint of the proposed processing area, should be conserved to assist in the screening of the activities.

Topsoil Handling:

- ∞ The first 300 mm of topsoil should be removed and stored along the boundary of the processing area. Stockpiling of topsoil must be done to protect it from erosion and mixing with other material. The topsoil must be used to cover the rehabilitated area and improve the establishment of natural vegetation.
- ∞ The temporary topsoil stockpiles should be kept free of weeds.
- ∞ Topsoil stockpiles should be placed on a levelled area and measures should be implemented to safeguard the piles from being washed away in the event of heavy rains/storm water.
- ∞ Topsoil heaps should not exceed 1.5 m in order to preserve micro-organisms within the topsoil, which can be lost due to compaction and lack of oxygen.
- ∞ Storm- and runoff water should be diverted around the stockpile area and access roads to prevent erosion.

Dust Handling:

- ∞ The liberation of dust into the surrounding environment must be effectively controlled by the use of, inter alia, water spraying and/or other dust-allaying agents.

- ⌘ The site manager must ensure continuous assessment of all dust suppression equipment to confirm its effectiveness in addressing dust suppression.
- ⌘ Speed on the gravel access roads must be limited to 40km/h to prevent the generation of excess dust.
- ⌘ Roads must be sprayed with water or an environmentally friendly dust-allaying agent that contains no PCB's (e.g. DAS products) if dust is generated above acceptable limits.
- ⌘ The crusher plant must have operational water sprayers to alleviate dust generation from the conveyor belts.

Noise Handling:

- ⌘ The applicant must ensure that employees and staff conduct themselves in an acceptable manner while on site.
- ⌘ No loud music may be permitted at the processing area.
- ⌘ All associated vehicles/machinery must be equipped with silencers and maintained in a road worthy condition in terms of the Road Transport Act.

Management of weed or invader plants:

- ⌘ A weed and invader plant control management plan must be implemented at the site to ensure eradication of all listed invader plants in terms of Conservation of Agricultural Act (Act No 43 1983).
- ⌘ Management must take responsibility to control declared invader or exotic species on the rehabilitated areas. The following control methods can be used:
 - "The plants can be uprooted, felled or cut off and can be destroyed completely."
 - "The plants can be treated with an herbicide that is registered for use in connection therewith and in accordance with the directions for the use of such an herbicide."
- ⌘ The temporary topsoil stockpiles needs to be kept free of weeds.

Waste Management:

- ⌘ Regular vehicle maintenance may only take place within the workshop and service bay area. All waste products must be disposed of in a 200 liter closed container/bin to be stored within a bunded area at the workshop in order to ensure proper disposal.
- ⌘ Any effluents containing oil, grease or other industrial substances must be collected in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognised facility.
- ⌘ Spills must be cleaned up immediately to the satisfaction of the Regional Manager by removing the spillage together with the polluted soil and by disposing it at a recognised facility. Proof should be filed.
- ⌘ Suitable covered receptacles should be available at all times and conveniently placed for the disposal of waste.
- ⌘ Non-biodegradable refuse such as glass bottles, plastic bags, metal scrap, etc, should be stored in a container with a closable lid at a collecting point and collected on a regular

basis and disposed of at a recognised landfill site. Specific precautions should be taken to prevent refuse from being dumped on or in the vicinity of the mine area.

- ⌘ Biodegradable refuse generated should be handled as indicated above.

Protection of fauna and flora:

- ⌘ The site manager should ensure that no fauna is caught, killed, harmed, sold or played with.
- ⌘ Workers should be instructed to report any animals that may be trapped in the working area.
- ⌘ No snares may be set or nests raided for eggs or young.
- ⌘ No plants may be removed without the approval of the ECO.
- ⌘ A walk-through inspection with the ECO must be done prior to site establishment in order to identify any sensitive or protected plants to be removed from the footprint area.
- ⌘ The 3.7 ha area with indigenous vegetation (as indicated on the Mine Activities Map) should be demarcated and maintained as no-go area.

Storm water Handling:

- ⌘ Storm water must be diverted around the topsoil heaps, processing areas and access roads to prevent erosion and loss of material.
- ⌘ All activities must be conducted only in accordance with the Best Practice Guideline for small scale mining that relates to storm water management, erosion and sediment control and waste management, developed by the Department of Water and Sanitation (DWS), and any other conditions which that Department may impose:
 - Clean water (e.g. rainwater) must be kept clean and be routed to a natural watercourse by a system separate from the dirty water system. You must prevent clean water from running or spilling into dirty water systems.
 - Dirty water must be collected and contained in a system separate from the clean water system.
 - Dirty water must be prevented from spilling or seeping into clean water systems.
 - The storm water management plan must apply for the entire life cycle of the mine and over different hydrological cycles (rainfall patterns).
 - The statutory requirements of various regulatory agencies and the interests of stakeholders must be considered and incorporated into the storm water management plan.

Culture and Heritage Aspects:

- ⌘ Should any historical or archaeological sites be uncovered during the processing operations, the operation have to be stop immediately and the relevant authority (SAHRA and/or SAPS) has to be contacted. Activities may only commence once the area has been cleared for work by the authorities.

Potential impact on existing infrastructure:

- ⌘ All activities must be contained within the boundaries of the approved processing area to prevent negative impacts on the infrastructure within close proximity to the proposed activity.
- ⌘ Roads needs to be maintained in a working order for the duration of the project.

Management of Access Roads:

- ⌘ Storm water should be diverted around the access roads to prevent erosion.
- ⌘ Vehicular movement must be restricted to existing access routes to prevent crisscrossing of tracks through undisturbed areas.
- ⌘ Rutting and erosion of the access road caused as a result of the processing activities should be repaired by the applicant.

Management of Health and Safety Risks:

- ⌘ Workers must have access to the correct personal protection equipment (PPE) as required by law.
- ⌘ All operations must comply with the Occupational Health and Safety Act.

ix) The outcome of the site selection Matrix Final Site Layout Plan

(Provide a final site layout plan as informed by the process of consultation with interested and affected parties)

The site layout plan was compiled upon assessment of the site specific conditions, contribution of the consultation process, and reflection on site alternatives, and is attached as Appendix 6 to this document.

x) Motivation where no alternative sites were considered.

N/A

xi) Statement motivating the preferred site.

(Provide a statement motivation of the final site layout that is proposed)

As mentioned previously Site Alternative 1 is deemed to be the preferred site as it will ensure all mining and processing related activities is contained to one designated area on the property. The footprint area earmarked for the development will also be compatible with the current camp fences and agricultural activities on the farm.

Even though the footprint area will only be 42.75 ha (compared to the 55.3 ha proposed for Site Alternative 2) it can accommodate the proposed activity and reduces the amount of indigenous vegetation to be disturbed.

i) Plan of study for the Environmental Impact Assessment process

i. Description of alternatives to be considered including the option of not going ahead with the activity.

The alternatives described under Section 2 Point h) i) Details of All Alternatives Considered will be considered in the EIA process and entails the following:

1. Site Alternative 1 (S1) Preferred Alternative: Site Alternative 1 entails the use of an area partially disturbed by mining activities as footprint area for the processing of hard rock dolerite within the boundaries of the following GPS coordinates:

A. 25°52'36.35"S 29°02'36.83"E

B. 25°52'23.74"S 29°02'36.66"E

C. 25°52'22.33"S 29°02'49.35"E

D. 25°52'14.49"S 29°02'48.54"E

E. 25°52'13.33"S 29°03'11.52"E

F. 25°52'23.66"S 29°03'11.93"E

G. 25°52'23.95"S 29°03'16.98"E

H. 25°52'38.44"S 29°03'07.66"E

2. Site Alternative 2 (S2): Site Alternative 2 entails the use of an undisturbed area, removed from the quarry pit and mining permit/right areas for the processing of hard rock dolerite within the boundaries of the following GPS coordinates:

1. 25°52'36.70"S 29°02'48.93"E

B. 25°52'36.53"S 29°02'18.29"E

C. 25°52'15.47"S 29°02'17.19"E

D. 25°52'16.22"S 29°02'47.49"E

3. No-go Alternative

ii. Description of the aspects to be assessed as part of the environmental impact assessment process

(The EAP must undertake to assess the aspects affected by each individual mining activity whether listed or not, including activities such as blasting, Loading, hauling and transport, and mining activities such as Excavations, stockpiles, discard dumps or dams, water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc....etc.)

Environmental aspects to be assessed as part of the EIA process will include the following:

1. Potential impact the activity could have on cultural or heritage aspects that may be present on site.
2. Potential impact the proposed activity may have on surrounding mining infrastructure.
3. Other aspects that will be discussed in more detail in the EIA report will be:
 - the nature, probability and significance of the potential impacts associated with the project.
 - methodology used to rate the above mentioned impacts.
 - mitigation measures proposed to minimize the impact of the proposed activity on the surrounding environment.
 - response to comments that may be submitted by stakeholders and I&AP's during the public participation phase.
 - any additional requirements received from DMR.

iii. Description of aspects to be assessed by specialists

HCAC – Heritage Consultants were appointed to investigate the study area for any presence of cultural or heritage artefacts that might require protection. The findings and recommendations of the Heritage Impact Assessment (HIA) will be included in the EIA report.

iv. Proposed method of assessing the environmental aspects including the proposed method of assessing alternatives

The impact assessment component of the EIA is subdivided into several environmental aspects to be studied as listed below:

- Air and Noise Quality
- Access Route to be used and associate traffic impact
- Groundcover & Hydrology
- Proposed alternatives including the no-go alternative

Greenmined will use in-house specialists to review the environmental aspects which will be assessed as part of the environmental impact assessment process. The environmental aspects briefly described in the Scoping Report will be updated, and site

and technology specific impacts and mitigation recommendations will be made and be reviewed by the project team.

The significance of the impacts will be assessed in terms of the methodology described in Section 2 vi) Methodology Used in Determining and Ranking the Significance.

v. The proposed method of assessing duration significance

The significance of the identified impacts will be determined using the approach outlined in Section 2 vi) Methodology Used in Determining and Ranking the Significance. The environmental significance assessment methodology is based on the Overall Consequence x Overall Likelihood.

Consequence analysis is a mixture of quantitative and qualitative information and the outcome can be positive or negative. For the purpose of determining the environmental significance in terms of consequence, the following factors were chosen: Severity/Intensity, Duration and Extent/Spatial Scale.

The determination of likelihood is a combination of Frequency and Probability.

The multiplication of overall consequence with overall likelihood will provide the environmental significance, which is a number that will then fall into a range of **LOW, LOW-MEDIUM, MEDIUM, MEDIUM-HIGH** or **HIGH**.

Qualitative description or magnitude of Environmental Significance is qualitative and is an indication of the nature or magnitude of the Environmental Significance. It also guides the prioritisations and decision making process associated with this event, aspect or impact.

Assessing duration significance forms part of the environmental significance determination of the impacts and will be assessed accordingly

vi. The stages at which the competent authority will be consulted

The EAP has been in continuous consultation with the competent authority (DMR) throughout the initial stages of the project.

DMR was contacted during the application phase and will be invited to comment on the Draft Scoping Report during the Scoping Phase, upon which DMR will be requested to consider the Final Scoping Report.

Should DMR accept the Final Scoping Report the draft EIA report, including all investigations, assessments and specialist studies, will be submitted to DMR for comments.

Any additional requirements will be added to the Final EIA report to be submitted to DMR for approval.

It is proposed that the EIA process will entail the following steps:

1. Application for Environmental Authorization to DMR
2. DMR responds with reference number
3. Draft Scoping Report for perusal by I&AP's and stakeholders (including DMR)
4. Final Scoping Report (FSR) submitted to DMR
5. DMR decision on FSR
6. Draft EIA report for perusal by I&AP's and stakeholders (including DMR)
7. Final EIA report submitted to DMR
8. DMR decision on Final EIA report
9. Issuing of Environmental Authorisation

vii. Particulars of the public participation process with regard to the Impact Assessment process that will be conducted

1. Steps to be taken to notify interested and affected parties.

(These steps must include the steps that will be taken to ensure consultation with the affected parties identified in (h) (ii) herein).

The aspects to be assessed as part of the environmental impact assessment process has been added to the draft Scoping Report that will be distributed to all registered I&AP's and stakeholders for a 30 days commenting period.

As Evraz Highveld Steel & Vanadium (Pty) Ltd and Transnet (Pty) Ltd is currently the only registered I&AP's they will be provided with a copy of the Draft Scoping Report for their perusal, while the rest of the stakeholders and I&AP's (unregistered) will be notified of the availability of the DSR for their perusal should they be interested.

All issues, comments and recommendations received on the Draft Scoping Report will be incorporated into the Final Scoping Report to be submitted to DMR for approval.

2. Details of the engagement process to be followed

(Describe the process to be 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 the attended public meetings and records of such consultation will be required in the EIA at a later stage).

Public participation during the impact assessment phase of the EIA will entail a review of the findings of the EIA, presented in the Draft Scoping Report and Draft EIA and EMPr Reports. These reports will be made available for public comment as described above.

I&APs will be advised timeously of the availability of these reports and how to obtain them. They will be encouraged to comment in writing (mail or email). Ample notification of due dates will be provided.

All the issues, comments and suggestions raised during the comment period on the Draft Scoping Report and Draft EIA Report/EMPr will be added to the Comments and Response Report (CRR) that will accompany the Final Scoping Report and Final EIA Report/EMPr.

The Final Scoping Report will be submitted to the DMR for approval upon which the Draft EIA report will be compiled.

3. Description of the information to be provided to Interested and Affected Parties.

(Information to be provided must include the initial site plan and sufficient detail of the intended operation and the typical impacts of each activity, to enable them to assess what impact the activities will have on them or on the use of their land.)

The Draft Scoping Report and Draft EIA report will be the documents circulated to the registered I&AP's and stakeholders for their perusal.

The Scoping Report and Environmental Impact Assessment Report and Environmental Management Programme Report templates prescribed by DMR in terms of the National Environmental Management Act, 1998 in respect of listed activities that have been triggered by this application will be used to describe information with regard to the proposed crushing and screening project.

The research and analysis with regard to the project will be processed and interpreted to compile the information required in the abovementioned template to be distributed for public comment.

viii. Description of the tasks that will be undertaken during the environmental impact assessment process

The EIA process for the proposed processing project on Portion 30 and 42 of the farm Doornrug 302 JS is depicted below:

1. Application for Environmental Authorisation to DMR
2. DMR responds with reference number
3. Draft Scoping Report for perusal by I&AP's and stakeholders
4. Final Scoping Report (FSR) submitted to DMR
5. DMR decision on FSR
6. Impact Assessment Process
 - Project description and site environmental baseline
 - Impact assessment
 - Mitigation measures and recommendations
 - EMPr compilation
 - Cumulative impacts assessment
7. Draft EIA report for perusal by I&AP's and stakeholders
8. Final EIA report submitted to DMR
9. DMR decision on Final EIA report
10. Announcement of Environmental Authorization and Appeal Procedure
11. Opportunity to Appeal

ix. Measures to avoid, reverse, mitigate, or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored.

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 through rehabilitation.	POTENTIAL FOR RESIDUAL RISK
Demarcation of site with visible beacons	No impact could be identified other than the beacons being outside the boundaries of the approved processing area.	<u>Control:</u> Implementation of proper housekeeping	LOW
STRIPPING AND STOCKPILING OF TOPSOIL & ESTABLISHMENT OF SITE INFRASTRUCTURE	Visual intrusion associated with the establishment of the processing area.	<u>Control:</u> Implementation of proper housekeeping	LOW – MEDIUM
	Dust nuisance caused by the disturbance of the soil.	<u>Control:</u> Dust suppression	LOW
	Noise nuisance caused by machinery stripping and stockpiling the topsoil.	<u>Control:</u> Noise control measures	LOW
	Infestation of the topsoil heaps by weeds and invader plants.	<u>Control & Remedy:</u> Implementation of weed control	LOW – MEDIUM
	Loss of topsoil due to incorrect storm water management.	<u>Control:</u> Storm water management	LOW

	Contamination of area with hydrocarbons or hazardous waste material.	<u>Control & Remedy:</u> Implementation of waste management	LOW – MEDIUM
	Potential disturbance to cultural and heritage aspects present on site.	<u>Control & Stop:</u> Proper conservation of any artefacts of cultural and heritage importance. Stopping work when a discovery is made.	MEDIUM
	Potential impact on surrounding mining infrastructure.	<u>Control & Remedy:</u> Implementation of proper housekeeping and repair of any infrastructure that may be damaged as a result of the processing activities.	LOW
	Potential impact on fauna and flora within footprint area..	<u>Control:</u> Implementation of proper housekeeping and site management.	LOW
	Landowner to re-organise grazing camps should S2 be implemented.	<u>Modify:</u> Consider changing site layout to correspond with existing camp fences.	LOW – MEDIUM
	Mining related projects not contained to a single area on the property (Site Alternative 2).	<u>Modify:</u> Consider altering site layout to group mining related projects to a specific area on the property.	MEDIUM
CRUSHING AND SCREENING OF RECOVERED MATERIAL	Visual intrusion associated with the crushing and screening activities.	<u>Control:</u> Implementation of proper housekeeping	LOW – MEDIUM
	Dust nuisance due to crushing and screening activities.	<u>Control:</u> Dust suppression	LOW
	Noise nuisance generated by crushing and screening activities.	<u>Control:</u> Noise control measures	LOW
	Contamination of area with hydrocarbons or hazardous waste material.	<u>Control:</u> Implementation of waste management	LOW – MEDIUM
	Weed and invader plant infestation of the area.	<u>Control:</u> Implementation of weed control	LOW – MEDIUM

	Potential disturbance to cultural or heritage aspects present on site	<u>Control & Stop:</u> Proper conservation of any artefacts of cultural and heritage importance. Stopping work when a discovery is made.	MEDIUM
	Potential impact on fauna and flora within footprint area	<u>Control:</u> Implementation of proper housekeeping and site management.	LOW
STOCKPILING OF AGGREGATE	Dust nuisance due to loading and vehicles transporting the material.	<u>Control:</u> Dust suppression	LOW
	Deterioration of access roads.	<u>Control & Remedy:</u> Road management	MEDIUM
	Loss of stockpiled material due to incorrect storm water handling.	<u>Control:</u> Implementation of storm water management	LOW
SLOPING AND LANDSCAPING UPON CLOSURE OF THE SITE	Soil erosion.	<u>Control:</u> Soil management	LOW – MEDIUM
	Dust nuisance caused during landscaping activities.	<u>Control:</u> Dust suppression	LOW
	Noise nuisance caused by machinery.	<u>Control:</u> Noise monitoring	LOW
	Contamination of area with hydrocarbons or hazardous waste materials.	<u>Control:</u> Waste management	LOW
REPLACING THE TOPSOIL AND REHABILITATION OF DISTURBED AREA	Loss of reinstated topsoil due to the absence of vegetation.	<u>Control:</u> Soil management	LOW – MEDIUM
	Infestation of the area by weeds and invader plants.	<u>Control & Remedy:</u> Implementation of weed control	LOW – MEDIUM

l) 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 following potential impacts were identified that may impact on socio-economic conditions of directly affected persons:

- **Visual intrusion associated with the establishment of the processing area and crushing and screening activities**

The footprint of the proposed processing area will be visible from the R104 passing the site to the south as well as the N4 to the north of the site. Although the proposed area will be established on a farm with natural features, the surrounding environment has extensively been disturbed by mining activities. The proposed footprint area is therefore not allocated to a pristine area. The 3.7 ha no-go area where the applicant propose to conserve the *Acacia* trees will assist in mitigating the visual impacts on the receiving environment. The visual impact on the surrounding area is deemed to be of low - medium significance. There will be no residual impact after closure as all the infrastructure will be removed, and the area will be returned to its prior status to allow for agricultural use.

- **Dust nuisance caused by the disturbance of the soil, crushing activities and loading and transporting of material.**

Although the proposed operation requires no blasting or excavation the crusher plant will generate dust that could affect the air quality of the surrounding environment. If needed dust suppression will be implemented on the crusher plant and access roads in order to control dust generation. The liberation of dust during the operational phase will be limited to the immediate vicinity and can be controlled through the spraying of water or other dust alleviating agents. The impact on the surrounding area is deemed to be of low – medium significant. There will be no residual impact after closure.

- **Deterioration of access roads**

The proposed production of aggregate on the property will increase the amount of trucks visiting the property. This will have a direct impact on the traffic volumes of the surrounding roads. Rutting and erosion of the access road caused as a result of the processing activities will be repaired by the applicant. The impact on the surrounding area is deemed to be of medium significant.

- **Employment opportunities and Socio-economic impact**

The proposed labour complement of the activity will be 60 employees. The operation will contribute to the local economy in the area, both directly and through the multiplier effect that its presence will create. Equipment and supplies will be purchased locally, and wages will be spent at local businesses, generating both jobs and income in the area. Although the employees will not be resident on the site, they will be selected from the surrounding community.

(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)

The area on which the proposed processing area is located consist of an area previously impacted on by mining activities and as such the chances of recovering archaeological material are limited. HCAC – Heritage Consultants were appointed to investigate the study area for any presence of cultural or heritage artefacts that might require protection. The findings and recommendations of the Heritage Impact Assessment (HIA) will be included in the EIA report. The HIA will also be uploaded onto the SAHRIS website of the South African Heritage Resources Agency (SAHRA) for their perusal and approval.

m) 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**)

The site alternatives that will be investigated during the impact assessment process will be done at the hand of information obtained during the site investigation, public participation process as well as desktop studies conducted of the study area. As discussed earlier the following alternatives were considered that will be assessed in the EIAR:

1. **Site Alternative 1 (S1) (Preferred Alternative):** Site Alternative 1 entails the use of an area partially disturbed by mining activities as footprint area for the processing of hard rock dolerite within the boundaries of the following GPS coordinates:

SITE ALTERNATIVE 1 (PREFERRED ALTERNATIVE)		
NO	LATITUDE (SOUTH)	LONGITUDE (EAST)
A	25° 52'36.35" S	29°02'36.83"E
B	25°52'23.74"S	29°02'36.66"E

C	25°52'22.33"S	29°02'49.35"E
D	25°52'14.49"S	29°02'48.54"E
E	25°52'13.33"S	29°03'11.52"E
F	25°52'23.66"S	29°03'11.93"E
G	25°52'23.95"S	29°03'16.98"E
H	25°52'38.44"S	29°03'07.66"E

2. **Site Alternative 2 (S2):** Site Alternative 2 entails the use of an undisturbed area, removed from the quarry pit and mining permit/right areas for the processing of hard rock dolerite within the boundaries of the following GPS coordinates:

SITE ALTERNATIVE 2		
NO	LATITUDE (SOUTH)	LONGITUDE (EAST)
1	25° 52'36.70" S	29°2'48.93"E
2	25°52'36.53"S	29°2'18.29"E
3	25°52'15.47"S	29°2'17.19"E
4	25°52'16.22"S	29°2'47.49"E

3. **No-go Alternative:** The no-go alternative entails no change to the status quo and is therefore a real alternative that needs to be considered.

j) **UNDERTAKING REGARDING CORRECTNESS OF INFORMATION**

I Christine Fouche herewith undertake that the information provided in the foregoing report is correct, and that the comments and inputs from stakeholders and Interested and Affected parties has been correctly recorded in the report.



Signature of the EAP

DATE: 04 April 2016

k) **UNDERTAKING REGARDING LEVEL OF AGREEMENT**

I Christine Fouche herewith undertake that the information provided in the foregoing report is correct, and that the level of agreement with interested and Affected Parties and stakeholders has been correctly recorder and reported herein.



Signature of the EAP

DATE: 04 April 2016

- END -