

**GLENCORE OPERATIONS SOUTH AFRICA (PTY)
LTD – RHOVAN MINE**

**BASIC ASSESSMENT
REPORT (BAR)
&
DRAFT EMP**

DRAFT FOR I&AP REVIEW (30 Days)

**Date: 14 May 2015
JMA Project No: 10413
JMA File Reference: Prj5852**

*Decommissioning of Domestic Landfill
DMR Ref: (NW) 30/5/1/1/3/2/1/87 EM*

COMPILED FOR

GLENCORE

RHOVAN

COMPILED BY



JMA Consulting (Pty) Ltd
*Sustainable Environmental Solutions
through
Integrated Science and Engineering*



JMA/10413

DEA Reference Number: (NW) 30/5/1/1/3/2/1/87 EM

14 May 2015

Department of Mineral Resources
Private Bag A1
Klerksdorp
2570

ATTENTION: TSHILIDZI PHALALA

RE: THE DECOMMISSIONING OF THE DOMESTIC WASTE DISPOSAL FACILITY/LANDFILL AT GLENCORE OPERATIONS SOUTH AFRICA (PTY) LTD. - RHOVAN MINE, LOCATED WITHIN THE BOUNDARIES OF THE RUSTENBURG LOCAL MUNICIPALITY IN THE NORTH WEST PROVINCE.

With reference to the above mentioned the documentation included with this submission is to support the formal Basic Assessment (BA) Process as defined by the Environmental Impact Assessment Regulations 2014 of the National Environmental Management Act (NEMA), Act No. 107 of 1998 and consists of the following:

1. The completed **Basic Assessment Report (BAR) Template** as provided by the North West Department of Rural, Environment and Agricultural Development (READ).
2. The **Appendices listed in Section F of the BAR Template** which comprises of:

Appendix A: Maps

- Appendix A1: Locality Map (A3)
- Appendix A2: Layout/Route Plan
- Appendix A3 (i)-(iii): Sensitivity Map

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports (including terms of reference)

- Appendix D1: Geochemical Specialist Report
- Appendix D2: Geohydrological Specialist Report
- Appendix D3: Soils Specialist Report
- Appendix D4: Biodiversity Map (Habitat Condition)

Appendix E: Public Participation

- Appendix E1: Advertisements and Notices
- Appendix E2: Letter of notification (I&AP's)
- Appendix E3: Issues (Comments) and Response Register
- Appendix E4: Letter of notification (Authorities)
- Appendix E5: I&AP's database
- Appendix E6: Minutes of meetings

Appendix F: Impact Assessment Tables

2005/039663/07

Appendix G: Environmental Management Programme (EMPr) and Technical details of management measures and environmental monitoring

Appendix H: Details of EAP and expertise (CV and declaration of interest)

Appendix I: Specialist's declaration of interest

- Appendix I1: Geochemical and Geohydrological Specialist
- Appendix I2: Soils specialist

Appendix J: Additional Information

- Appendix J1: Impact Assessment Methodology
- Appendix J2: Closure Plan
- Appendix J3: End-use Plan
- Appendix J4: Environmental Awareness Plan

3. The Final BAR will be completed and finalised after the 30 days for commenting on the Draft report has lapsed. The Final BAR will then be submitted to DEA for them to evaluate and make a decision.

We trust that the Department will find this in order. If you require any additional information or clarification please do not hesitate to contact us.

Yours sincerely



Kobus Du Plessis (**Cand.Sci.Nat**)

LET8410



read

Department:
**Rural, Environment and Agricultural
Development**
North West Provincial Government
REPUBLIC OF SOUTH AFRICA



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(For official use only)

File Reference Number:

Application Number:

Date Received:

Basic assessment report in terms of the Environmental Impact Assessment Regulations, 2010, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2010 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. This report format is current as of **1 July 2014**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
3. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
4. Where applicable **tick** the boxes that are applicable in the report.
5. An incomplete report may be returned to the applicant for revision.
6. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
7. This report must be handed in at offices of the relevant competent authority as determined by each authority.
8. No faxed or e-mailed reports will be accepted.
9. The signature of the EAP on the report must be an original signature.
10. The report must be compiled by an independent environmental assessment practitioner.
11. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
12. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
13. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.
14. Two (2) colour hard copies and one (1) electronic copy of the report must be submitted to the competent authority.
15. Shape files (.shp) for maps must be included on the electronic copy of the report submitted to the competent authority.

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?

YES

NO

If YES, please complete the form entitled "Details of specialist and declaration of interest" for the specialist appointed and attach in **Appendix I**.

1. PROJECT DESCRIPTION

a) Describe the project associated with the listed activities applied for

The project associated with this application relates to the decommissioning of a small historical domestic landfill facility (0.62 ha) at the Glencore Operations South Africa (Pty) Ltd – Rhovan Mine. The Mine is located near the town of Brits in the Rustenburg Local Municipality within the Bojanala District Municipality. The domestic landfill facility was constructed in 2002 and used until 2006 when active disposal was terminated.

Waste disposed of on the landfill consisted mainly of garden waste, domestic waste and business waste. These waste streams are listed as General Waste in terms of the National Environmental Management: Waste Act 59 of 2008 (Schedule 3). In terms of the provisions listed in Annexure 1 of GNR 634 – Waste Classification and Management Regulations, General Waste should be disposed of at a Class B Landfill.



However, further waste classification conducted for the waste body, indicates the waste to be Type 4 waste. In terms of the "National Norms and Standards for disposal of Waste to Landfill" – GNR 636, the existing landfill can therefore be classified as a Class D Landfill. The closure capping containment barrier specification for a Class D Landfill as detailed in Chapter 2 of GNR 636, comprises a capping on top of the waste body of a 150 mm base preparation layer followed by a layer of in-situ soil.

The waste body will first be shaped and compacted by reworking of the waste material in-situ. The compaction is done to minimize the infiltration potential and the shaping is done to achieve a free draining landform.

After shaping and compaction the capping layers will be constructed.

The base preparation layer will comprise of a 150 mm layer of re-worked in-situ subsoil, sourced from the berms surrounding the site. The subsoil is derived from the original in-situ subsoil cleared from the site during its construction. It will be reworked to a minimum thickness of 150 mm and compacted to a minimum density of 95% Standard Proctor maximum dry density at a water content of Proctor optimum to optimum +2%.

The base preparation layer will be covered by a topsoil layer also sourced from the berms surrounding the site. The soil is also derived from the original in-situ soil cleared from the site during its construction.

Finally, the shaped and capped landfill site will be re-vegetated with indigenous vegetation species.

- b) Provide a detailed description of the listed activities associated with the project as applied for

Listed activity as described in GN R.544, 545 and 546	Description of Project Activity
GNR 921 – Category A (14)	The decommissioning of a facility for a waste management activity listed in Category A of this Schedule.

2. FEASIBLE AND REASONABLE ALTERNATIVES

“alternatives”, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives 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.

Describe alternatives that are considered in this application as required by Regulation 22(2)(h) of GN R.543. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity (NOT PROJECT) could be accomplished in the specific instance taking account of the interest of the applicant in the activity.

The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed.

(a) <u>Property:</u>	Alternatives considered in terms of the property/location where the activity (decommissioning of a domestic landfill facility) will take place are not deemed relevant, as the domestic landfill is an existing facility which is situated within the Rhovan Mine property boundary (the Remainder of Portion 2 of Losperfontein 405JQ) and which represents a brown field's site.
(b) <u>Type of Activity:</u>	<p>Three alternative options are available in terms of the type of activity to be undertaken:</p> <p>Firstly to appoint an external service provider that will collect the waste and remove it to an approved landfill site for re-disposal, Secondly to move the waste to another footprint on the Rhovan site, Thirdly to shape, cap and close the landfill site at its current locality (<i>in-situ</i>).</p>
(c) <u>Design or Layout:</u>	<p>In view of the fact that the facility contains General Waste, the in-situ closure of this site is considered to be the Best Practicable Environmental Option and is therefore proposed as the preferred alternative.</p> <p>Any alternatives for the design and layout of the site should meet the minimum requirements for decommissioning of the site as informed by the waste classification. In order to motivate the preferred alternative as proposed, composite waste body samples (mixture of waste and topsoil used for operational covering), were analysed using the Distilled Water Extraction and Aqua Regia Extraction tests. Classification was then done according to the National Norms and Standards for the assessment of Waste for Landfill disposal (GNR 635) of NEM:WA (Act 59 of 2008). Interpretation of the generated chemistry data, taking cognizance of the in-situ topsoil composition, indicated the waste to be of Type 4. The covering topsoil for the site, being the weathering product of a vanadium bearing magnetite ore body is naturally elevated in V, Co, Cu, Mn, Ni, and Zn. Elevated concentrations observed for these elements are therefore attributed to the topsoil in the samples as there exists no possible source for these in the General Waste disposed of on the site.</p>
(d) <u>Technology:</u>	The closure of the domestic landfill will comprise the shaping and capping of the site through standard civil construction activities. No technology alternatives were considered as none are deemed required.
(e) <u>Operational Aspects:</u>	The site will be closed and therefore fully dormant. No operational aspect alternatives are therefore applicable.
(f) <u>The no-go Option:</u>	If the site is not closed and decommissioned it may pose an ongoing threat to the environment as well as representing a legal non-compliance.

The determination of whether a site or activity (including different processes, etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the, competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

The identification of alternatives should be in line with the Integrated Environmental Assessment Guideline Series 11, published by the DEA in 2004. Should the alternatives include different locations and lay-outs, the co-ordinates of the different alternatives must be provided. The co-ordinates should be in degrees, minutes and seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

a) Site alternatives

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
Coordinates for the four corner points of the domestic landfill facility within the Rhovan Mine property boundary.	25°34'37.44"S	27°34'50.95"E
	25°34'39.48"S	27°34'54.34"E
	25°34'41.74"S	27°34'53.15"E
	25°34'39.89"S	27°34'49.46"E
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
N/A	N/A	N/A
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)
N/A	N/A	N/A

No alternative sites are applicable to this activity as the domestic landfill facility is situated within the Rhovan Mine property boundary (the Remainder of Portion 2 of Losperfontein 405JQ) which represents a brown field's site.

In the case of linear activities:

Alternative:

Latitude (S):

Longitude (E):

Alternative S1 (preferred)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

N/A	N/A
N/A	N/A
N/A	N/A

Alternative S2 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

N/A	N/A
N/A	N/A
N/A	N/A

Alternative S3 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

N/A	N/A
N/A	N/A
N/A	N/A

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

In the case of an area being under application, please provide the co-ordinates of the corners of the site as indicated on the lay-out map provided in Appendix A.

b) Lay-out alternatives

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
No alternative layouts are applicable to this activity as the domestic landfill facility is an existing layout situated within the Rhovan Mine property boundary (the Remainder of Portion 2 of Losperfontein 405JQ).	25°34'37.44"S	27°34'50.95"E
	25°34'39.48"S	27°34'54.34"E
	25°34'41.74"S	27°34'53.15"E
	25°34'39.89"S	27°34'49.46"E
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
N/A	N/A	N/A
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)
N/A	N/A	N/A

c) Technology alternatives

Alternative 1 (preferred alternative)
The formal waste classification conducted for the waste body, indicates the waste to be Type 4 waste. In terms of the "National Norms and Standards for disposal of Waste to Landfill" – GNR 636, the existing landfill can therefore be classified as a Class D Landfill. The closure capping containment barrier specification for a Class D Landfill as detailed in Chapter 2 of GNR 636, comprises a capping on top of the waste body of a 150 mm base preparation layer followed by a layer of in-situ soil. The closure of the domestic landfill will comprise the shaping and capping of the site through standard civil construction activities.
Alternative 2
The technology proposed is prescribed in the Regulations and will be adhered to.
Alternative 3
The technology proposed is prescribed in the Regulations and will be adhered to.

d) Other alternatives (e.g. scheduling, demand, input, scale and design alternatives)

Alternative 1 (preferred alternative)
N/A
Alternative 2
N/A
Alternative 3
N/A

e) **No-go alternative**

If the site is not closed and decommissioned it may pose an ongoing threat to the environment as well as representing a legal non-compliance.

Paragraphs 3 – 13 below should be completed for each alternative.

3. **PHYSICAL SIZE OF THE ACTIVITY**

a) **Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):**

Alternative:

Alternative A1¹ (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

Size of the activity:

6 200 m ²
N/A
N/A

or, for linear activities:

Alternative:

Alternative A1 (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

Length of the activity:

N/A
N/A
N/A

b) **Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):**

Alternative:

Alternative A1 (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

Size of the site/servitude:

1 200 000 m ²
N/A
N/A

¹ "Alternative A.." refer to activity, process, technology or other alternatives.

4. SITE ACCESS

Does ready access to the site exist?

YES	NO
N/A	

If NO, what is the distance over which a new access road will be built

Describe the type of access road planned:

Existing Access Road.

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

5. LOCALITY MAP

An A3 locality map must be attached to the back of this document, as Appendix A. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map.). The map must indicate the following:

- an accurate indication of the project site position as well as the positions of the alternative sites, if any;
- indication of all the alternatives identified;
- closest town(s);
- the accurate indication of the site in relation to closest protected environments or national parks (i.e. within 2.5 km)
- road access from all major roads in the area;
- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow;
- a legend; and
- locality GPS co-ordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection).

An A3 locality map detailing the information listed above is attached as **Appendix A1** to this form.

6. LAYOUT/ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this document. The site or route plans must indicate the following:

- the property boundaries and numbers of all the properties within 50 metres of the site;
- the current land use as well as the land use zoning of the site;
- the current land use as well as the land use zoning each of the properties adjoining the site or sites;
- the exact position of each listed activity applied for (including alternatives);
- servitude(s) indicating the purpose of the servitude;
- a legend; and
- a north arrow.

A layout/route plan detailing the information listed above is attached as **Appendix A2** to this form.

7. SENSITIVITY MAP

The layout/route plan as indicated above must be overlain with a sensitivity map that indicates all the sensitive areas associated with the site, including, but not limited to:

- watercourses;
- the 1:100 year flood line (where available or where it is required by DWA);
- ridges;
- for gentle slopes the 1 metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and
- cultural and historical features;
- areas with indigenous vegetation (even if it is degraded or infested with alien species); and
- critical biodiversity areas and ecological support area.
- protected areas (e.g Magaliesberg Protected Environment, Pilanesberg National Park etc.)

The sensitivity map must also cover areas within 100 m of the site and must be attached in Appendix A.

Sensitivity maps detailing the information listed above are attached as **Appendix A3 (i) –A3 (iii)** to this form.

8. SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this report. It must be supplemented with additional photographs of relevant features on the site, if applicable.

Colour photographs were taken from the centre of the site (coordinates 25°34'39.52"S, 27°34'51.97"E) in the eight major compass directions and are attached as **Appendix B** to this form.

9. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of at least 1:200 as Appendix C for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

A detailed illustration of the activity was prepared at a scale of 1:200 and is attached as **Appendix C** to this form.

10. ACTIVITY MOTIVATION

Motivate and explain the need and desirability of the activity (including demand for the activity):

1. Is the activity permitted in terms of the property's existing land use rights?	YES	NO	Please explain
Current land-use zoning is Agricultural. Applicant has agreed to submit a change of land-use application.			
2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	YES it will be in line	NO	Please explain
The activity falls within the property boundary within which Rhovan Mine lawfully operates since 1989 and as such must be considered an existing land use in any PSDF compiled by any authority. The activity will have no impact on the surrounding area and land use.			
(b) Urban edge / Edge of Built environment for the area	YES it will be in line	NO	Please explain
The activity falls within the property boundary within which Rhovan Mine lawfully operates since 1989. The activity will have no impact on the surrounding area and land use.			
(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).	YES it will be in line	NO	Please explain
The activity falls within the property boundary within which Rhovan Mine lawfully operates since 1989 and as such must be considered an existing land use in any IDP and SDF compiled by any authority. The activity will have no impact on the surrounding area and land use.			
(d) Approved Structure Plan of the Municipality	YES it will be in line	NO	Please explain
The activity falls within the property boundary within which Rhovan Mine lawfully operates since 1989 and as such must be considered an existing land use in any SP compiled by any authority. The activity will have no impact on the surrounding area and land use.			
(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)	YES it will be in line	NO	Please explain

The activity falls within the property boundary within which Rhovan Mine lawfully operates since 1989 and as such must be considered an existing land use in any EMF compiled by any authority. The activity will have no impact on the surrounding area and land use.			
(f) Any other Plans (e.g. Guide Plan)	YES it will be in line	NO	Please explain
The activity falls within the property boundary within which Rhovan Mine lawfully operates since 1989 and as such must be considered an existing land use in any GP compiled by any authority. The activity will have no impact on the surrounding area and land use.			
3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?	YES	NO	Please explain
The activity falls within the property boundary within which Rhovan Mine lawfully operates since 1989 and as such must be considered an existing land use in any SDF and IDP compiled by any authority. The activity will have no impact on the surrounding area and land use.			
4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)	YES	NO	Please explain
The activity falls within the property boundary within which Rhovan Mine lawfully operates since 1989 and as such must be considered an existing land use. The activity is in support of the lawful mining and beneficiation at the site.			
5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	YES	NO	Please explain
The activity falls within the property boundary within which Rhovan Mine lawfully operates since 1989. Adequate services are available.			
6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	YES	NO	Please explain
The activity falls within the property boundary within which Rhovan Mine lawfully operates since 1989 and as such must be considered an existing land use in any planning conducted by any authority. The activity will have no impact on the surrounding area and land use.			
7. Is this project part of a national programme to address an issue of national concern or importance?	YES	NO	Please explain
8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)	YES	NO	Please explain

The activity falls within the property boundary within which Rhovan Mine lawfully operates since 1989. The activity will have no impact on the surrounding area and land use.			
9. Is the development the best practicable environmental option for this land/site?	YES	NO	Please explain
The decommissioning of the domestic landfill facility at Rhovan Mine is in accordance with the requirements and guidelines stipulated in GNR 636 of 23 August 2013 – National Norms and Standards for disposal of Waste to Landfill and is therefore an example of a sound and sensible environmental management strategy.			
10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	YES	NO	Please explain
The decommissioning of the domestic landfill facility at Rhovan Mine is in accordance with the requirements and guidelines stipulated in GNR 636 of 23 August 2013 – National Norms and Standards for disposal of Waste to Landfill and is therefore an example of a sound and sensible environmental management strategy.			
11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?	YES	NO	Please explain
The decommissioning of the domestic landfill facility at Rhovan Mine is in accordance with the requirements and guidelines stipulated in GNR 636 of 23 August 2013 – National Norms and Standards for disposal of Waste to Landfill and is therefore an example of a sound and sensible environmental management strategy.			
12. Will any person's rights be negatively affected by the proposed activity/ies?	YES	NO	Please explain
The activity falls within the property boundary within which Rhovan Mine lawfully operates since 1989. The activity will have no impact on the surrounding area, land use of local communities.			
13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?	YES	NO	Please explain
The activity falls within the property boundary within which Rhovan Mine lawfully operates since 1989. The activity will have no impact on the surrounding area and land use.			
14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?	YES	NO	Please explain
The activity falls within the property boundary within which Rhovan Mine lawfully operates since 1989. The activity will have no impact on the surrounding area and land use.			
15. What will the benefits be to society in general and to the local communities?	Please explain		
No socio-economic or socio-cultural benefits are associated with the decommissioning of the existing dormant domestic landfill facility. The activity falls within the property boundary within which Rhovan Mine lawfully operates since 1989. The activity will have no impact on the surrounding area, land use of local communities. However, the decommissioning will prevent any potential further impact on the environment.			
16. Any other need and desirability considerations related to the proposed activity?	Please explain		
None			
17. How does the project fit into the National Development Plan for 2030?	Please explain		
This project will have no influence on the National Development Plan for 2030.			
18. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.			
A comprehensive assessment of the potential impacts (i.e. Impact Assessment) associated with the activity was performed in terms of the relevant aspects associated with the activity and the relevant environmental components affected. An Environmental Aspect as defined by ISO 14000 states "Elements of an Organisations Activity, Products or Services which can interact with the Environment. A significant Environmental Aspect is an Environmental Aspect which has, or can have a Significant			

Environmental Impact.” The Environmental components considered were the following: Socio-Cultural, Heritage, Socio-Economic, Land Use, Infrastructure, Topography, Soils, Land Capability, Geology, Ground Water, Surface Water, Plant Life, Animal Life, Wetlands, Aquatic Ecosystems, Air Quality, Noise, Traffic and Visual Aspects. The Impact Assessment is presented in tabular format to not only facilitate the structured inclusion of requirements as stated in *inter alia* the DMR guideline (Guideline For the Compilation of an Environmental Impact Assessment and a Draft Environmental Management Programme) but also to provide the basis for the compilation of a comprehensive Management Programme (EMP) ensuring that a management objective and management measure is presented for all the identified impacts. The impact assessment methodology used to assess this activity is based on an Impact Assessment Rating Matrix developed by JMA Consulting (the EAP). This matrix contains all the critical elements for Environmental Impact Assessment as proposed in the formal DEAT Protocol for Environmental Impact Assessment – DEAT (2002) Impact Significance, Information Series 5, Department of Environmental Affairs and Tourism (DEAT), Pretoria. Refer to Section D of this form/report for more details pertaining to the Impact Assessment and the Draft Management Programme. The public participation process relevant to the activity was structured in accordance with Section 19 of GNR 982 – Environmental Impact Assessment Regulations, 2014 taken effect on 8 December 2014 to include the compilation of a interested and affected parties (I&AP's) database (stakeholder database), pre-application meeting with the competent authority, notification of the I&AP's of the application, preparation of the draft Basic Assessment (BA) form (report), newspaper advertisements of the public meeting, site notices of the public meeting, a public meeting, the minutes of the meeting and circulation to I&AP's, distribution of the draft BA form (report) for I&AP review (Authorities and I&AP's), capturing of the I&AP's comments and issue acknowledgement of receipt, compilation of an Issues and Response register, preparation of the final BA form/report and submission to authorities and I&AP's. Refer to Section C of this form/report for more details relating to the Public Participation process.

19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.

The activity of concern relates to the decommissioning of a small domestic landfill facility (0.62 ha) at the Glencore Operations South Africa (Pty) Ltd – Rhovan Mine. The domestic landfill facility was constructed in 2002 and is no longer in operation. Waste disposed of on the landfill consisted mainly of garden waste, domestic waste and business waste, which is listed as General Waste in terms of the National Environmental Management: Waste Act 59 of 2008 (Schedule 3). Hence, this activity will not generate any waste. In terms of the alternatives considered for the type of activity to be undertaken, the option to cap, shape and re-vegetate the landfill as is, was deemed to be environmentally and economically sustainable.

No alternatives were considered in terms of the technology used during the decommissioning of the landfill facility, as the design and layout specifications are in line with the requirements specified in the most recent guidelines available (GNR 636 of 23 August 2013 – National Norms and Standards for disposal of Waste to Landfill). In order to achieve these requirements, the Rhovan domestic landfill facility will be closed with soil from the surrounding berms and the landfill will be shaped in order to ensure that it is free-draining. The capped and shaped landfill facility will be re-vegetated. The activity falls within the property boundary within which Rhovan Mine lawfully operates, therefore the activity will have no impact on the surrounding area, land use of local communities. A comprehensive impact assessment in accordance with relevant legislation and guidelines was conducted, where the impact of the activity on the social, economic and bio-physical environment was assessed. If the management objectives and measures proposed in the Draft Environmental Management Programme (EMP) are carried out, the impacts associated with the activity (i.e. pollution and degradation of the environment) can be avoided and mitigated. No cultural sites will be disturbed during the activity, and no significant impacts/disturbances are expected on any ecosystems or the biological diversity. Finally, all information relevant to this application as well as the BA form/report will be made available and accessible to all the I&AP's and competent authorities.

11. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable:

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
National Environmental Management: Waste Act 59 of 2008 (NEMWA)	Classification of waste disposed of at domestic landfill facility	Department of Environmental Affairs (DEA)	01 July 2009
GNR 921 of 29 November 2013 – List of Waste Management Activities that have, or are likely to have, a Detrimental Effect on the Environment	Classification of waste disposed of at domestic landfill facility	Department of Environmental Affairs (DEA)	29 November 2013
GNR 634 of 23 August 2013 – Waste Classification and Management Regulations	Classification of waste disposed of at domestic landfill facility	Department of Environmental Affairs (DEA)	23 August 2013
GNR 635 of 23 August 2013 – National Norms and Standards for the Assessment of Waste for Landfill Disposal	Assess waste for the purpose of disposal to landfill	Department of Environmental Affairs (DEA)	23 August 2013
GNR 636 of 23 August 2013 – National Norms and Standards for Disposal of Waste to Landfill	Determine the requirements for the disposal of waste to landfill	Department of Environmental Affairs (DEA)	23 August 2013
National Environmental Management Act 107 of 1998 (NEMA)	Information pertaining to Environmental Authorisations and to determine the principles and general objectives for decision-making on matters affecting the environment	Department of Environmental Affairs (DEA)	29 January 1999
GNR 982 of December 2014: Environmental Impact Assessment Regulations	Guideline on the procedure and criteria relating to the submission, processing and consideration of, and decision on, applications for environmental authorisations	Department of Environmental Affairs (DEA)	04 December 2014
GNR 983 of 04 December 2014: Environmental Impact Assessment Regulations - Listing Notice 1 of 2014	Identify activities that would require environmental authorisations prior to commencement of that activity as per Listing Notice 1	Department of Environmental Affairs (DEA)	04 December 2014
GNR 807 of 10 October 2012: Publication of Public Participation Guideline	Guideline to determine the structure of the Public Participation Programme	Department of Environmental Affairs (DEA)	10 October 2012

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
GN 792 of 5 October 2012: Draft Guideline on Need and Desirability in Terms of the Environmental Impact Assessment (EIA) Regulations, 2010.	Guidance for applicants on the requirement for the consideration of need and desirability in terms of NEMA, the EIA regulation and NEMWA	Department of Environmental Affairs (DEA)	05 October 2012
DWAF, Second Edition, 1998. Waste Management Series. Minimum Requirements for Waste Disposal by Landfill.	To determine the design and layout specifications necessary for the decommissioning of a domestic landfill facility	Department of Water Affairs (DWAF)	1998
Integrated Environmental Management, Information Series 3, Stakeholder Engagement	Guideline to determine the structure of the Public Participation Programme	Department of Environmental Affairs (DEA)	2004
Integrated Environmental Management, Information Series 5, Impact Significance	Concept of significance in the identification, prediction and evaluation of impacts	Department of Environmental Affairs (DEA)	2004
Integrated Environmental Management, Information Series 6, Ecological Risk Assessment	Integrating the results of the risk assessment with economic and socio-political considerations	Department of Environmental Affairs (DEA)	2004
Integrated Environmental Management, Information Series 7, Cumulative Effects Assessment	Understanding cumulative effects assessments	Department of Environmental Affairs (DEA)	2004
Integrated Environmental Management Guideline Series 7, Public Participation	Guideline to determine the structure of the Public Participation Programme	Department of Environmental Affairs (DEA)	2010
Guideline For The Compilation of an Environmental Impact Assessment And An Environmental Management Programme	Guideline for the compilation of an environmental impact assessment and an environmental management programme	Department Mineral Resources	

12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?

YES

NO

m³

If YES, what estimated quantity will be produced per month?

How will the construction solid waste be disposed of (describe)?

N/A.

Where will the construction solid waste be disposed of (describe)?

N/A.

Will the activity produce solid waste during its operational phase?

YES

NO

m³

If YES, what estimated quantity will be produced per month?

How will the solid waste be disposed of (describe)?

N/A.

If the solid waste will be disposed of into a municipal waste stream, indicate which registered landfill site will be used.

N/A.

Where will the solid waste be disposed of if it does not feed into a municipal waste stream (describe)?

N/A.

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Can any part of the solid waste be classified as hazardous in terms of the NEM:WA?

YES

N/A

If YES, inform the competent authority and request a change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

Is the activity that is being applied for a solid waste handling or treatment facility?

YES

NO

If YES, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?

YES	NO
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If YES, what estimated quantity will be produced per month?

m ³	
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Will the activity produce any effluent that will be treated and/or disposed of on site?

YES	NO
-----	-----------

If YES, describe the type of effluent and the disposal mechanism/method

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Will the activity produce effluent that will be treated and/or disposed of at another facility?

YES	NO
-----	-----------

If YES, provide the particulars of the facility:

Facility name:

Contact

person:

Postal

address:

Postal code:

Telephone:

E-mail:

Cell:

Fax:

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

--

c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere other than exhaust emissions and dust associated with construction phase activities?

YES	NO
-----	-----------

If YES, is it controlled by any legislation of any sphere of government?

YES	NO
-----	----

If YES, the applicant must consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If NO, describe the emissions in terms of type and concentration:

--

d) Waste Licence/Registration

Will any aspect of the activity produce waste that will require a waste licence/registration in terms of the NEM:WA?

YES	NO
-----	-----------

If YES, please submit evidence that an application for a waste permit has been submitted to the competent authority

e) **Generation of noise**

Will the activity generate noise?

YES	NO
YES	NO

If YES, is it controlled by any legislation of any sphere of government?

If YES, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If NO, describe the noise in terms of type and level:

The only noise that will be generated will be from the construction machinery used during the shaping and capping of the waste disposal facility. These activities will be completed within three months after which the noise impact will cease. The noise impact will be restricted to within the Rhovan site perimeter and its intensity is expected to be low to medium. The overall noise impact significance rating is low. The effects of the impact are fully reversible.

13. **WATER USE**

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es):

Municipal	Water Board (Karee Water Scheme)	Groundwater	River, Stream, Dam or Lake	Other	The activity will only use clean water to moisturize the capping layer during its compaction.
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If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:

Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?

If YES, please provide proof that the application has been submitted to the Department of Water Affairs.

litres	
YES	NO

14. **ENERGY EFFICIENCY**

Describe the design measures, if any, that have been taken to ensure that the activity is energy efficient:

N/A.

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

N/A.

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

1. For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section B and indicate the area, which is covered by each copy No. on the Site Plan.

Section B Copy No. (e.g. A):

A

2. Paragraphs 1 - 6 below must be completed for each alternative.

3. Has a specialist been consulted to assist with the completion of this section?

YES NO

If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed and attach it in Appendix I. All specialist reports must be contained in Appendix D.

Property
description/physical
address:

Province	North West
District Municipality	Bojanala District Municipality
Local Municipality	Rustenburg Local Municipality
Ward Number(s)	Ward Numbers 29 and 30
Farm name and number	Farm Losperfontein 405JQ
Portion number	Remainder of Portion 2
SG Code	SG diagram as per title deed (14807/1998); Surveyor General 21 digit code: (TOJQ00000000040500002)

Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application including the same information as indicated above.

Current land-use
zoning as per
local municipality
IDP/records:

Agricultural

In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to, to this application.

Is a change of land-use or a consent use application required?

YES NO

Locality map:

An A3 locality map must be attached to the back of this document, as Appendix A. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map.) The map must indicate the following:

- an indication of the project site position as well as the positions of the alternative sites, if any;
- road access from all major roads in the area;
- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow;
- a legend; and
- locality GPS co-ordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection)

An A3 locality map detailing the information listed above is attached as **Appendix A1** to this form.

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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Alternative S2 (if any):

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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Alternative S3 (if any):

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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2. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site:

2.1 Ridgeline	<input type="checkbox"/>	2.4 Closed valley	<input type="checkbox"/>	2.7 Undulating plain / low hills	<input type="checkbox"/>
2.2 Plateau	<input type="checkbox"/>	2.5 Open valley	<input type="checkbox"/>	2.8 Dune	<input type="checkbox"/>
2.3 Side slope of hill/mountain	<input type="checkbox"/>	2.6 Plain	<input checked="" type="checkbox"/>	2.9 Seafront	<input type="checkbox"/>

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site(s) located on any of the following?

	Alternative S1:		Alternative S2 (if any):		Alternative S3 (if any):	
Shallow water table (less than 1.5m deep)	YES	NO	YES	NO	YES	NO
Dolomite, sinkhole or doline areas	YES	NO	YES	NO	YES	NO
Seasonally wet soils (often close to water bodies)	YES	NO	YES	NO	YES	NO
Unstable rocky slopes or steep slopes with loose soil	YES	NO	YES	NO	YES	NO
Dispersive soils (soils that dissolve in water)	YES	NO	YES	NO	YES	NO
Soils with high clay content (clay fraction more than 40%)	YES	NO	YES	NO	YES	NO
Any other unstable soil or geological feature	YES	NO	YES	NO	YES	NO
An area sensitive to erosion	YES	NO	YES	NO	YES	NO

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted.

4. GROUNDCOVER

Indicate the types of groundcover present on the site. The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Natural veld - good condition ^E	Natural veld with scattered aliens ^E	Natural veld with heavy alien infestation ^E	Veld dominated by alien species ^E	Gardens
Sport field	Cultivated land	Paved surface	Building or other structure	Bare soil

If any of the boxes marked with an "E" is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn't have the necessary expertise.

5. SURFACE WATER

Indicate the surface water present on and or adjacent to the site and alternative sites?

Perennial River	YES	NO	UNSURE
Non-Perennial River	YES	NO	UNSURE
Permanent Wetland	YES	NO	UNSURE
Seasonal Wetland	YES	NO	UNSURE
Artificial Wetland	YES	NO	UNSURE

If any of the boxes marked YES or UNSURE is ticked, please provide a description of the relevant watercourse.

The Tshukutswe non-perennial stream is located some 1445 m due east from the historic Waste Disposal Facility. The stream runs from south to north and eventuates into the Sterkstroom perennial river, which eventually drains into the Roodekopjes Dam catchment.

6. LAND USE CHARACTER OF SURROUNDING AREA

Indicate land uses and/or prominent features that currently occur within a 500m radius of the site and give description of how this influences the application or may be impacted upon by the application:

Natural area	Dam or reservoir	Polo fields
Low density residential	Hospital/medical centre	Filling station ^H
Medium density residential	School	Landfill or waste treatment site
High density residential	Tertiary education facility	Plantation
Informal residential ^A	Church	Agriculture
Retail commercial & warehousing	Old age home	River, stream or wetland
Light industrial	Sewage treatment plant ^A	Nature conservation area
Medium industrial ^{AN}	Train station or shunting yard ^N	Mountain, koppie or ridge
Heavy industrial ^{AN}	Railway line ^N	Museum
Power station	Major road (4 lanes or more) ^N	Historical building
Office/consulting room	Airport ^N	Protected Area
Military or police base/station/compound	Harbour	Graveyard
Spoil heap or slimes dam^A	Sport facilities	Archaeological site
Quarry, sand or borrow pit	Golf course	Mining

If any of the boxes marked with an "N" are ticked, how will this impact / be impacted upon by the proposed activity?

N/A.

If any of the boxes marked with an "AN" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A.

If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A.

Does the proposed site (including any alternative sites) fall within any of the following:

Critical Biodiversity Area (as per provincial conservation plan)	YES	NO
Core area of a protected area?	YES	NO
Buffer area of a protected area?	YES	NO
Planned expansion area of an existing protected area?	YES	NO
Existing offset area associated with a previous Environmental Authorisation?	YES	NO

If the answer to any of these questions was YES, a map indicating the affected area must be included in Appendix A.

Refer to **Appendix A3 (iii)** which shows that the Rhovan Mine domestic landfill facility is located within a biodiversity corridor (CBA2).

7. CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or paleontological sites, on or close (within 20m) to the site? If YES, explain:	YES	NO
	Uncertain	
No such elements within 20 m.		

If uncertain, conduct a specialist investigation by a recognised specialist in the field (archaeology or palaeontology) to establish whether there is such a feature(s) present on or close to the site. Briefly explain the findings of the specialist:

Specialist Study was conducted for the entire Rhovan site during EMPR Addendum Study in 2006/2007.

Will any building or structure older than 60 years be affected in any way?	YES	NO
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	YES	NO
If YES, please provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority.		

8. SOCIO-ECONOMIC CHARACTER

a) Local Municipality

Please provide details on the socio-economic character of the local municipality in which the proposed site(s) are situated.

Level of unemployment:

26.40%

Economic profile of local municipality:

The economy of Rustenburg is largely shaped by, and vulnerable to, changes in mining activities (producing 70% of national and 50% of world production of platinum) with 65% of output and 37% of employment opportunities contributed to the mining sector in 2011.

Level of education:

Education (aged 20 +): No Schooling (5.40%); Higher Education (8.90%); Matric (31.00%)

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R	250 000.00
What is the expected yearly income that will be generated by or as a result of the activity?	R	0.00
Will the activity contribute to service infrastructure?	YES	NO
Is the activity a public amenity?	YES	NO
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	ZERO	
What is the expected value of the employment opportunities during the development and construction phase?	R	150 000.00
What percentage of this will accrue to previously disadvantaged individuals?	70 %	
How many permanent new employment opportunities will be created during the operational phase of the activity?	ZERO	
What is the expected current value of the employment opportunities during the first 10 years?	R	0.00
What percentage of this will accrue to previously disadvantaged individuals?	0 %	

9. BIODIVERSITY

Please note: The Department may request specialist input/studies depending on the nature of the biodiversity occurring on the site and potential impact(s) of the proposed activity/ies. To assist with the identification of the biodiversity occurring on site and the ecosystem status consult <http://bgis.sanbi.org> or BGIShelp@sanbi.org. Information is also available on compact disc (cd) from the Biodiversity-GIS Unit, Ph (021) 799 8698. This information may be updated from time to time and it is the applicant/EAP's responsibility to ensure that the latest version is used. A map of the relevant biodiversity information (including an indication of the habitat conditions as per (b) below) and must be provided as an overlay map to the property/site plan as Appendix D to this report.

- a) Indicate the applicable biodiversity planning categories of all areas on site and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category)

Systematic Biodiversity Planning Category				If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan
Critical Biodiversity Area (CBA)	Ecological Support Area (ESA)	Other Natural Area (ONA)	No Natural Area Remaining (NNR)	The Rhovan historic domestic landfill facility is located within a biodiversity corridor (CBA2).

b) Indicate and describe the habitat condition on site

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).
Natural		
Near Natural (includes areas with low to moderate level of alien invasive plants)		
Degraded (includes areas heavily invaded by alien plants)		
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	100%	The waste disposal site to be decommissioned at Rhovan Mine is located in a 100 % transformed area and is located right in the centre of the Rhovan Mine Beneficiation Plant Area. It is surrounded by process water dams, effluent dams, storm water pollution control and mine residue disposal facilities.

c) Complete the table to indicate:

- (i) the type of vegetation, including its ecosystem status, present on the site; and
- (ii) whether an aquatic ecosystem is present on site.

Terrestrial Ecosystems		Aquatic Ecosystems		
Ecosystem threat status as per the National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	Critical	Wetland (including rivers, depressions, channelled and unchanneled wetlands, flats, seeps pans, and artificial wetlands)		
	Endangered			
	Vulnerable			
	Least Threatened			
		YES	NO	UNSURE

The overall Rhovan Mine site is located in the Marikana Thornveld vegetation type and the status of this ecosystem has been classified as vulnerable. However the waste disposal site applicable to this application is located right in the centre of the Rhovan Mine Beneficiation Plant Area on a 100% transformed habitat condition.

- d) Please provide a description of the vegetation type and/or aquatic ecosystem present on site, including any important biodiversity features/information identified on site (e.g. threatened species and special habitats)

The overall larger Rhovan Mine site is located in the Marikana Thornveld vegetation type and the status of this ecosystem has been classified as vulnerable. However the waste disposal site applicable to this application is located right in the centre of the Rhovan Mine Beneficiation Plant Area on a 100% transformed habitat condition. No aquatic ecosystem is present on the domestic landfill facility site.

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

Publication name	Brits Post	
Date published	30 April 2015	
Site notice position (Google Earth)	Latitude	Longitude
	25°34'21.30"S	27°34'55.90"E
Date placed	1 May 2015	

Publication name	Platinum Weekly
Date published	1 May 2015

Include proof of the placement of the relevant advertisements and notices in Appendix E1.

2. DETERMINATION OF APPROPRIATE MEASURES

Provide details of the measures taken to include all potential I&APs as required by Regulation 54(2)(e) and 54(7) of GN R.543.

The following measures were taken to include all potential I&AP's.

At the start of the public participation process a formal I&AP Data Base was compiled and updated/expanded as the process continued. The relevant regulations define I&AP's as:

- Any person, group of persons or organisation interested in, or affected by an activity
- Any organ of state that may have jurisdiction over any aspect of the activity

In the DMR guidelines I&AP's are defined as:

- Host Communities
- Traditional Land Owners
- Title Deed Land Owners

- Traditional Authority
- Land Claimants
- Lawful Land Occupier
- Any other person on adjacent or even non-adjacent land whose socio-economic conditions may be directly affected by the proposed project
- The Local Municipality
- The Regional Municipality
- The Department of Rural Development and Land Reform
- The Department of Rural, Environment and Agricultural Development
- The Department of Water Affairs
- The Department of Mineral Resources
- The Department of Environmental Affairs
- The relevant Government Agencies and Institutions responsible for the various aspects of the environment and for infrastructure

Having full regard for the above, a formal I&AP Data Base was compiled for the Rhovan project. This data base was and will continually be updated throughout the process. An existing I&AP database was received from Rhovan for I&AP's involved in previous Rhovan projects. This database was updated and expanded to include all I&AP's in the surrounding area into a new I&AP's Database for this specific project.

A Background Information Document (BID), comment pages and notification letters were e-mailed to I&AP's in cases where relevant details were available. Notifications and invitations to attend the public meeting were sent via sms's and e-mails to all I&AP's on the I&AP's database. The BID document and comment pages were also available to I&AP's during the public meeting.

Advertisements were placed two weeks prior to the Public meeting to appear on 30 April and 1 May 2015 in the Brits Post and Platinum Weekly respectively. These advertisements notified I&AP's of the Public Meeting that was held on 14 May 2015 at "The Bush Ranch" venue.

Site Notices were put up two weeks in advance of the Public meeting at the Rhovan Main Entrance and the surrounding fence line. Site notices were provided to the Ward Councillors responsible for the area to be put up at various locations in the communities as they deemed fit.

After the meeting I&AP's were informed where the Draft BAR was available for public review. The BAR was available from 14 May 2015 for a time period of 30 days. The last date for I&AP's to comment on the report was on 15 June 2015 at 17h00. At the meeting it was indicated where the hard copies of all reports would be made available for I&AP's to comment on. Electronic copies of the Draft BAR were also available on the JMA website: www.jmaconsult.co.za.

Key stakeholders (other than organs of state) identified in terms of Regulation 54(2)(b) of GN R.543:

Title, Name and Surname	Affiliation/ key stakeholder status	Contact details (tel number or e-mail address)
Ms Nokukhanya Khumalo	SAHRA	021 462 4502 nkhumalo@sahra.org.za
Mr D.S. Motilhamme	Ward Councillor - Ward 29	072 600 4394
Ms E.B. Matabane	Ward Councillor - Ward 30	073 815 0811

Robert Nemanashi	Department of Rural Development and Land Reform	014 597 3597 rnemanashi@nwpg.gov.za
Lufuno Nevhufumba	Department of Agriculture, Forestry and Fisheries (DAFF)	nevhufumbaL@daff.gov.za
Caroline Shai	North West Department Water Affairs,	012 253 1026 shaic@dwa.gov.za
Mathekga Thapelo	Bojanala District Municipality	014 590 4502 mathekgath@yahoo.com
Mr KgaboJames Masebe	Rustenburg Local Municipality	014 590 3109 kjmasebe@rustenburg.gov.za

Include proof that the key stakeholder received written notification of the proposed activities as Appendix E2. This proof may include any of the following:

- e-mail delivery reports;
- registered mail receipts;
- courier waybills;
- signed acknowledgements of receipt; and/or
- or any other proof as agreed upon by the competent authority.

The complete I&AP data base is included as Appendix E5 and the proof of notifications is included in Appendix E2.

3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summary of main issues raised by I&APs	Summary of response from EAP
This section will be compiled once the BAR has undergone public scrutiny and will therefore be included in the Draft BAR prior to submission to the Authorities for consideration.	This section will be compiled once the BAR has undergone public scrutiny and will therefore be included in the Draft BAR prior to submission to the Authorities for consideration.

4. COMMENTS AND RESPONSE REPORT

The EAP will record all comments received from I&APs and will respond to each comment before the Draft BAR is submitted. The comments and responses will be captured in a comments and response report as prescribed in the EIA regulations and which will be attached to the Final BAR as Appendix E3.

5. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders:

Authority/Organ of State	Contact person (Title, Name and Surname)	Tel No	Fax No	e-mail	Postal address
DMR	Mr Tshilidzi Phalala (Case Officer)	018) 487 9830	018) 4879831	tshilidzi.phalala@dmr.gov.za	Private Bag A1 Klerksdorp 2570
DEA	Mr Lucas Mahlangu	012 399 9791		lmahlangu@environment.gov.za	Private Bag X447 Pretoria 0001
READ	Ms Queen Imasiku	014) 597 3597		Qimasika@nwpg.gov.za	Private Bag X 82298 RUSTENBURG 0300

Include proof that the Authorities and Organs of State received written notification of the proposed activities as appendix E4.

6. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for any activities (linear or other) where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that sub-regulation to the extent and in the manner as may be agreed to by the competent authority.

Proof of any such agreement must be provided, where applicable. Application for any deviation from the regulations relating to the public participation process must be submitted prior to the commencement of the public participation process.

A list of registered I&APs must be included as appendix E5.

Copies of any correspondence and minutes of any meetings held must be included in Appendix E6.

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2010, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

1. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

Provide a summary and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed. This impact assessment must be applied to all the identified alternatives to the activities identified in Section A(2) of this report.

A complete impact assessment in terms of Regulation 22(2)(i) of GN R.543 must be included as Appendix F.

A comprehensive discussion of the Potential impacts associated with the activity is given below in terms of the relevant aspects associated with the activity and the relevant environmental components affected.

In addition, a comprehensive impact assessment was conducted for the activity (decommissioning and post closure phase ONLY) and is presented in tabular format (see **Appendix F**). The impact assessment methodology utilized for the assessment is attached as **Appendix J1**. The impact assessment tables consist of the following columns:

Column 1 - Activity
Column 2 - Aspect
Column 3 - Potential Impact Description
Column 4 - Spatial Extent
Column 5 - Intensity/Severity
Column 6 - Duration
Column 7 - Unacceptability
Column 8 - Mitigatory Difficulty
Column 9 - Significance Total
Column 10 - Significance S Number
Column 11 - Probability of Occurrence
Column 12 - Risk Level Before Management

This not only facilitates the structured inclusion of requirements as stated in *inter alia* the DMR guideline (Guideline for the Compilation of an Environmental Impact Assessment and a draft Environmental Management Programme) but also provides the basis for the compilation of a comprehensive draft Environmental Management Programme (EMPr) ensuring that all identified impacts are managed/mitigated. The draft environmental management programme tables consist of the following columns:

Column 1:	Activity
Column 2:	Aspect
Column 3:	Potential Impact Description
Column 4:	Risk Level Before Management
Column 5:	Management Objective
Column 6:	Proposed Management Measure
Column 7:	Risk Level After Management
Column 8:	Responsible Person
Column 9:	Management Time Schedule
Column 10:	Management Budget Quantum
Column 11:	Management Budget Allocation/Provisioning
Column 12:	Monitoring Requirement
Column 13:	Monitoring Frequency
Column 14:	Monitoring Budget Quantum
Column 15:	Monitoring Budget Allocation/Provisioning
Column 16:	Performance Assessment
Column 17:	Performance Assessment Time Schedule

The draft Environmental Management Measures tables (EMPr) are attached as **Appendix G** to this form. A brief discussion of the technical details of the proposed management measures and monitoring requirements for every environmental component potentially impacted upon is also presented in **Appendix G** following the draft EMPr tables.

The potential impacts that the **Activity (i.e. Decommissioning of a domestic landfill facility)** will have on the environment were assessed in terms of the different environmental aspects related to the activity. An Environmental Aspect as defined by ISO 14000 states "Elements of an Organisations Activity, Products or Services which can interact with the Environment. A significant Environmental Aspect is an Environmental Aspect which has, or can have a Significant Environmental Impact."

The **Aspects associated with this activity** can be listed as the following:

- 1) Shape and compact the waste body
- 2) Construct capping comprising the following layers:
 - 150 mm base preparation layer comprising of reworked in-situ subsoil sourced from stockpiled berms around the landfill site – was cleared from site during construction and stockpiled as berms. Placed and compacted to Regulation Specifications.
 - In situ soil layer comprising of reworked in-situ soil sourced from stockpiled berms around the landfill site – was cleared from site during construction and stockpiled as berms.
- 3) Fertilize the soil layer
- 4) Re-vegetate the soil layer

The potential impact that these aspects might have on the environment was assessed by the EAP for each the following **Environmental Components**:

Socio-Cultural, Heritage, Socio-Economic, Land Use, Infrastructure, Topography, Soils, Land Capability, Geology, Ground Water, Surface Water, Plant Life, Animal Life, Wetlands, Aquatic Ecosystems, Air Quality, Noise, Traffic and Visual Aspects.

A complete Impact Assessment is reflected in Impact Assessment Tables attached to this BAR as **Appendix F**. A summary of the potential impacts are discussed below for each environmental component individually.

1) **Socio-cultural**: No potential impacts are anticipated as the activity falls within the property boundary within which Rhovan Mine lawfully operates, and will therefore have **no impact** on the surrounding land use patterns, population composition of the local communities, or any change in the institutional/legal/cultural processes.

2) **Heritage**: No historical and cultural sites (places/buildings/structures/burial sites/graves) are located on or near the domestic landfill footprint, hence **no associated impact**.

3) **Socio-Economic**: No potential impacts are anticipated in terms of the socio-economic environment, as the activity falls within the property boundary within which Rhovan Mine lawfully operates, no additional equipment or workers are required to execute the activity. Therefore **no impact** is anticipated in terms of economic efficiency (labour, employment, output or growth), economic equity (poverty, income) or economic stability (diversity, resource use).

4) **Land Use**: No potential impact is predicted in terms of land use, as the activity falls within the property boundary within which Rhovan Mine lawfully operates, therefore it will have **no impact** on the surrounding land use patterns. The site is an existing one and the post closure land use will not compromise the current land use.

5) **Infrastructure**: **No impact** is anticipated in terms of the surrounding infrastructure (roads, pipelines, power lines, rail lines or telecommunications), as the aspects associated with the activity will be carried out with and from existing Rhovan machinery/equipment and access points/roads.

6) **Topography**: **No impact** is expected on the topography in terms of the morphology and stability, as the soil berms surrounding the landfill site will be dozed (i.e. flattened) and the soil will be used to cover and re-vegetate the domestic landfill facility after the waste body has been compacted. Therefore no dangerous excavations or mounds will be generated or areas prone to surface subsidence.

7) **Soils**: **No impact** is expected on the soils (soil horizon, soil fertility, contamination of soil) as the activity will not alter the existing footprint size or adjacent soils. After the waste body has been compacted, the existing sub-soil and soil berms surrounding the domestic landfill facility will be used to cap and re-soil the facility.

8) **Land Capability**: **No impact** is expected on the land capability, as the domestic landfill facility will be capped and re-soiled with soil from the surrounding berms.

9) **Geology**: **No impact** is expected in terms of the geology as the aspects associated with the activity will have no impact on the lithology or mineral resources.

10) **Ground Water:** In terms of the decommissioning activity specifically, **no potential impact** relating to either ground water **quantity** (presence, flow and availability) or **quality** is expected. The waste classification confirmed the waste not to possess the potential to leach contaminants that could pollute the ground water. The closure and capping **will effectively prevent any post closure ground water impacts**.

11) **Surface Water:** The activity **could potentially impact on the surface water resource**, due to the potential for suspended solids to be present in storm water run-off during the decommissioning period. However, the site is located within the storm water management system for the Rhovan Beneficiation Plant and should contaminated run-off be generated, it will be dealt with by the existing storm water management system. **The closure and capping will effectively prevent any post closure surface water impacts**.

12) **Plant Life:** **No negative impact** is expected on the plant life as the domestic landfill facility is currently in an un-rehabilitated state. The decommissioning and closure of the site will facilitate a re-vegetation of the site with indigenous vegetation which represents a **positive impact**. **Post closure the site will have a sustainable vegetative cover**.

13) **Animal Life:** **No negative impact** is expected on the animal life as the domestic landfill facility is currently in an un-rehabilitated state. The decommissioning and closure of the site will facilitate a re-vegetation of the site with indigenous vegetation, thereby re-establishing animal life habitat which represents a **positive impact**. **Post closure the site will have a sustainable animal life habitat**.

14) **Wetlands:** **No impact is expected on wetlands** as the domestic landfill site is located within a highly industrialized complex and nowhere near any wetland feature. The existing storm water management system will effectively capture any contaminated water that may originate from the site during decommissioning, hence protecting any off-site wetland feature. **Post closure the site will have no potential impact on Wetlands**.

15) **Aquatic Ecosystems:** The activity **could potentially impact on the aquatic ecosystems** associated with off-site surface water resources, due to the potential for suspended solids to be present in storm water run-off during the decommissioning period. However, the site is located within the storm water management system for the Rhovan Beneficiation Plant and should contaminated run-off be generated, it will be dealt with by the existing storm water management system. **The closure and capping will effectively prevent any post closure aquatic ecosystem impacts**.

16) **Air Quality:** The activity could potentially have a **negative impact** on the air quality due to dust generated during decommissioning as well as due to gaseous emissions emanating from the machinery and vehicles used during decommissioning. **Post closure the site will be re-vegetated and no air quality impact will occur**.

17) **Noise:** The decommissioning activity could potentially have an **impact on the ambient noise** levels due to an increase in noise generated from the machinery and vehicles operated during the activity. However, **post closure the site will have no noise impact**.

18) **Traffic:** Because the activity falls within the Rhovan Beneficiation Plant boundary, it will have **no impact** on the surrounding traffic and roads.

19) **Visual Aspects:** The **only possible impact** during the decommissioning relates to dust generation emanating from the shaping, capping and re-soiling. **Post closure** the site will have a **positive visual impact**.

Direct impacts: An impact was considered to be direct of nature, if an immediate effect on one or more of the environmental components considered was evident as a result of the activity. The potential impacts anticipated on surface water, aquatic ecosystems, air quality, noise and visual aspects, were considered to be direct impacts.

Indirect impacts: No potential impacts were deemed to not directly result from the activity.

Cumulative impacts: As defined by GNR 982 – Environmental Impact Assessment Regulations, 2014 taken effect on 8 December 2014, a cumulative impact means the impact of an activity that in itself may not be significant, but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area. Noise and air quality represent such cumulative impacts. However, in both instances their intensity is so low and their duration so limited, that **their cumulative effect is deemed insignificant**.

A concise summary of the impact assessment and proposed mitigation measures is given for both the decommissioning and post closure phase below. The highest obtained significance level for an impact during a particular phase is presented in the table below. Refer to **Appendix F** and **Appendix G** for the **comprehensive impact assessment** and the **EMP**. The Impact Assessment and Management Plan is only given for the preferred alternative as none other were deemed realistic.

Activity	Impact summary	Significance	Proposed mitigation
Alternative 1 (preferred alternative) – Decommissioning and Closure Phase			
	Direct impacts: Surface Water Quality, Aquatic Ecosystems (water quality), Air Quality (dust and gaseous emissions), Noise and Visual Aspects	Low Risk	Schedule work for the dry season and complete if possible. Provide bunding for activity area to convey "dirty" water to existing "dirty" storm water management system. Prevent unnecessary idling of motors. Perform regular dust suppression. Restrict decommissioning activities to daylight hours as far as possible.
	Indirect impacts: None	No Impact	None required.
	Cumulative impacts: Air Quality and Noise.	Very Low Risk	Management measures as proposed for direct impacts will suffice.
Alternative 1 (preferred alternative) – Post Closure Phase			
	Direct impacts: The comprehensive impact assessment indicated a low risk negative impact prior to mitigation if the post closure maintenance is not done properly. However, if	Low Positive Impact	Maintain dirty water management systems until rehabilitation has been fully established. Conduct bi-annual vegetation condition assessments.

Activity	Impact summary	Significance	Proposed mitigation
	maintained properly, low positive impacts occur for Plant Life, Animal Life and Visuals.		
	<i>Indirect impacts:</i>	N/A	N/A
	<i>Cumulative impacts:</i>	N/A	N/A
Alternative 2			
None	<i>Direct impacts:</i>	N/A	N/A
	<i>Indirect impacts:</i>	N/A	N/A
	<i>Cumulative impacts:</i>	N/A	N/A
Alternative 3			
None	<i>Direct impacts:</i>	N/A	N/A
	<i>Indirect impacts:</i>	N/A	N/A
	<i>Cumulative impacts:</i>	N/A	N/A
No-go option			
	<i>Direct impacts:</i> In its un-rehabilitated state, the domestic landfill site has the potential to impact on Land Use and Land Capability, Topography, Soils, Ground Water, Surface Water, Plant Life, Animal Life, Aquatic Ecosystems, Air quality and Visuals.	Medium Risk	The best possible mitigation is the decommissioning and closure of the site in accordance with regulatory guidelines – preferred alternative applied for.
	<i>Indirect impacts:</i>	N/A	N/A
	<i>Cumulative impacts:</i>	N/A	N/A

2. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

Alternative A (preferred alternative)

The decommissioning and closure of the historic domestic landfill at Rhovan will have a **very low (significance) impact** on the environment provided that the proposed management and mitigation measures are implemented. The potential impacts on surface water, aquatic ecosystems, air quality, noise and visual aspects will potentially be direct in nature and the duration will be very short term (3 months for decommissioning and then 1 year to fully re-vegetate). The likelihood of the impacts actually occurring after appropriate management and mitigation measures have been put in place is highly unlikely. Once closed, the environmental risk associated with the closed facility will be insignificant.

Alternative B

N/A

Alternative C

N/A

No-go alternative (compulsory)

The no-go alternative will leave the historic domestic waste site as it is. This implies that a real and significant risk will exist for several components of the environment to be harmed. However, if the site is decommissioned and closed as proposed, this **risk will become insignificant**.

SECTION E. RECOMMENDATION OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?

YES

NO

If "NO", indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment).

N/A

If "YES", please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application.

The planning and design of the proposed activity took full cognizance of the potential impacts on the environment. Bearing this in mind and based on the outcome of the high integrity impact and risk assessments undertaken, there exists, however, no scientific evidence that environmental impacts associated with the proposed activity will result in impacts of unacceptable magnitude and risk.

All impacts and risks identified for all the applicable life-cycle phases of the project can indeed be fully managed to acceptable levels provided that the measures prescribed in the EMP be implemented.

It is therefore recommended by the EAP that approval be granted to proceed with the activity, subject to compliance with the attached EMP.

YES

NO

Is an EMPr attached?

The EMPr must be attached as Appendix G.

The details of the EAP who compiled the BAR and the expertise of the EAP to perform the Basic Assessment process must be included as Appendix H.

If any specialist reports were used during the compilation of this BAR, please attach the declaration of interest for each specialist in Appendix I.

Any other information relevant to this application and not previously included must be attached in Appendix J.

Jasper Lodewyk Muller

NAME OF EAP

SIGNATURE OF EAP

DATE

SECTION F: APPENDICES

The following appendices must be attached:

Appendix A: Maps

- Appendix A1: Locality Map (A3)
- Appendix A2: Layout/Route Plan
- Appendix A3 (i)-(iii): Sensitivity Map

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports (including terms of reference)

- Appendix D1: Geochemical Specialist Report
- Appendix D2: Geohydrological Specialist Report
- Appendix D3: Soils Specialist Report
- Appendix D4: Biodiversity Map (Habitat Condition)

Appendix E: Public Participation

- Appendix E1: Advertisements and Notices
- Appendix E2: Letter of notification (I&AP's)
- Appendix E3: Issues (Comments) and Response Register
- Appendix E4: Letter of notification (Authorities)
- Appendix E5: I&AP's database
- Appendix E6: Minutes of meetings

Appendix F: Impact Assessment Tables

Appendix G: Environmental Management Programme (EMPr) and Technical details of management measures and environmental monitoring

Appendix H: Details of EAP and expertise (CV and declaration of interest)

Appendix I: Specialist's declaration of interest

- Appendix I1: Geochemical and Geohydrological Specialist
- Appendix I2: Soils specialist

Appendix J: Additional Information

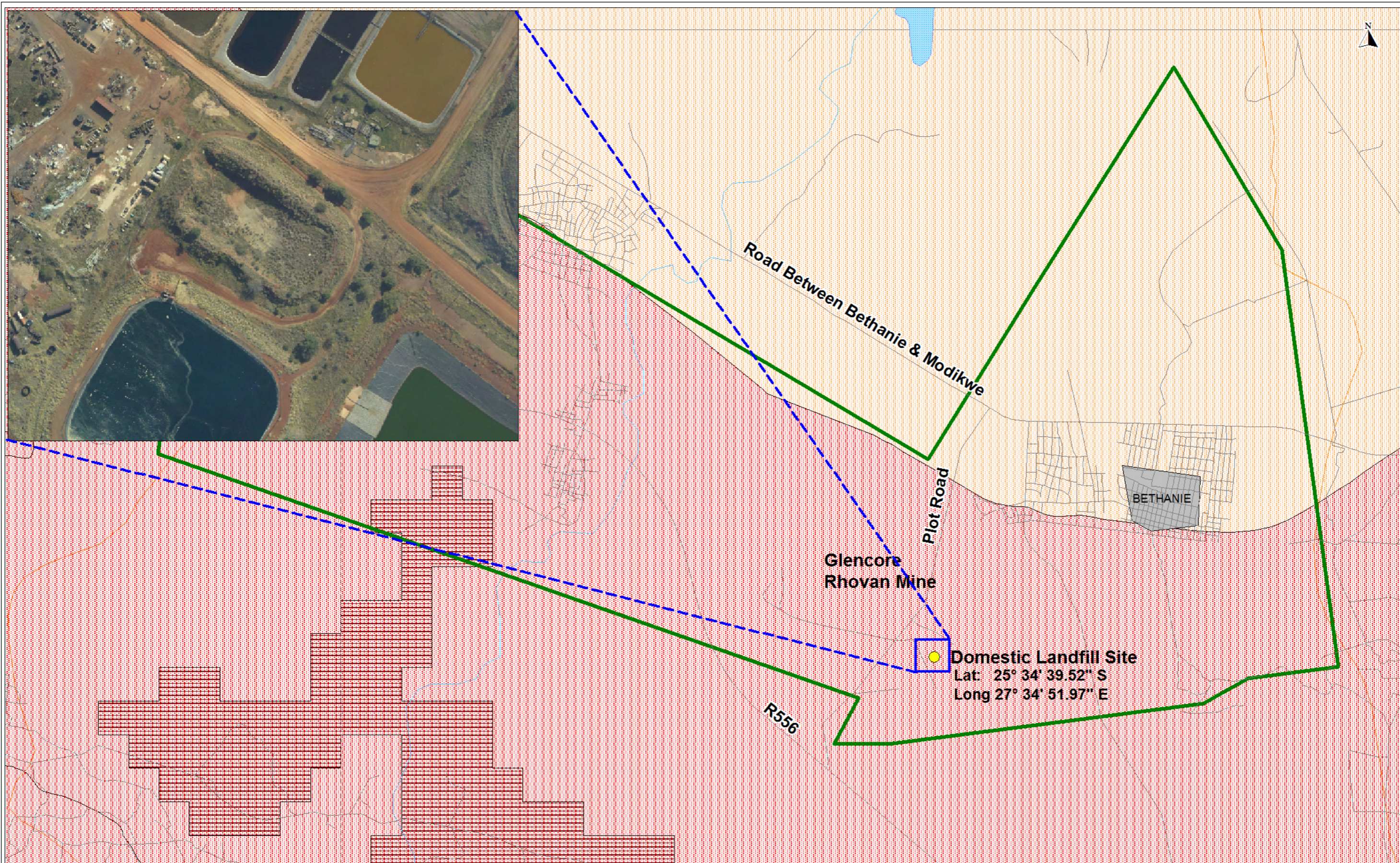
- Appendix J1: Impact Assessment Methodology
- Appendix J2: Closure Plan

- Appendix J3: End-use Plan
- Appendix J4: Environmental Awareness Plan

APPENDIX A1

An A3 locality map detailing the information listed below is attached as **Appendix A1**:

- an accurate indication of the project site position as well as the positions of the alternative sites, if any;
- closest town(s);
- the accurate indication of the site in relation to closest protected environments or national parks (i.e. within 2.5 km)
- road access from all major roads in the area;
- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow;
- a legend; and
- locality GPS co-ordinates



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Client: Glencore - Rhovan Mine

Project: Decommissioning of
Domestic Landfill

LEGEND

Rhovan Property Boundaries

Roads

Nearest Town

Formal Protected Areas

NPAES Focus Areas

Ecosystem Protection Level

Well protected

Moderately Protected

Poorly Protected

Not Protected

WGS84

DD

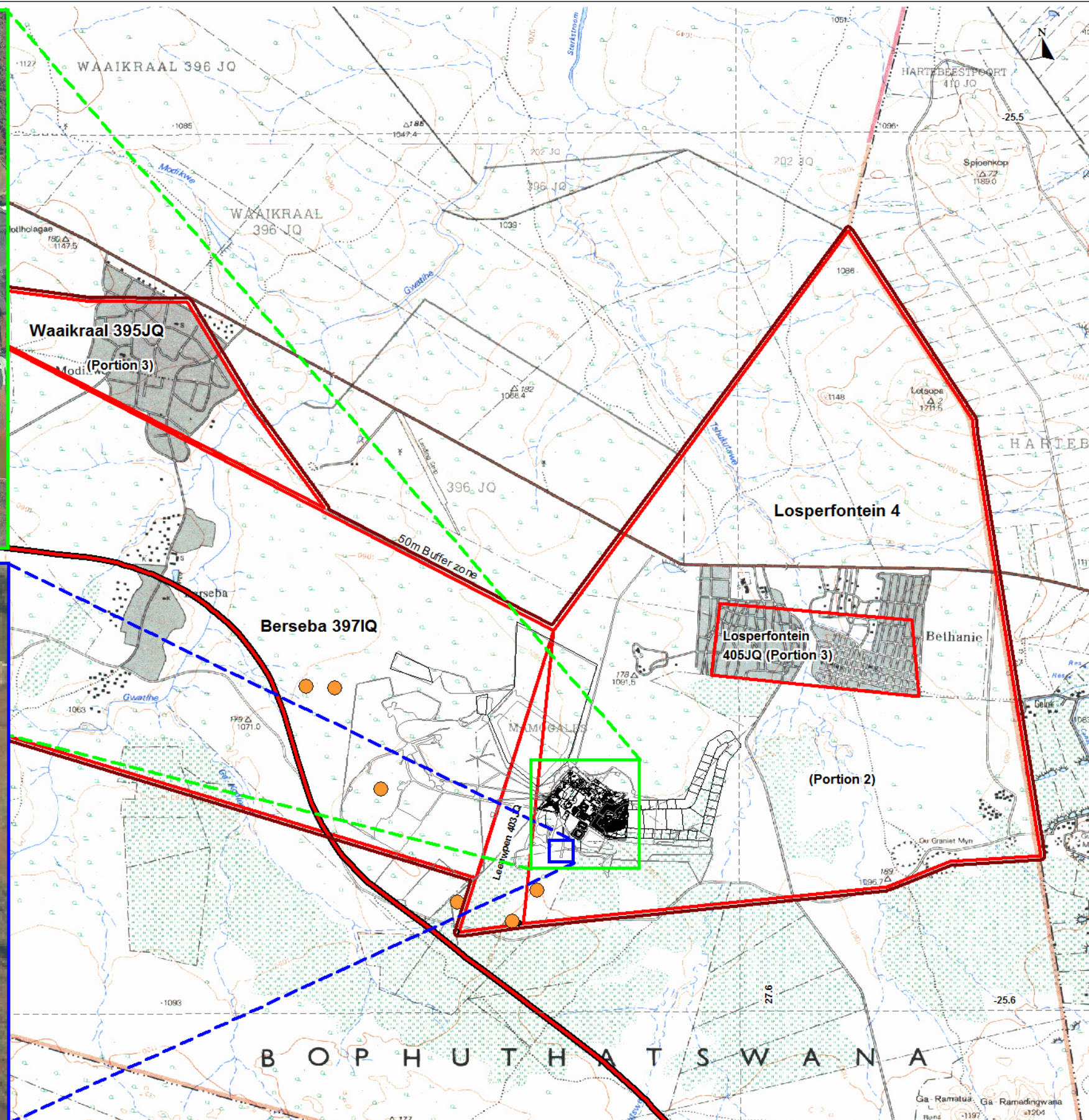
Date Compiled: October 2014

**Locality Map of
Domestic Landfill Site**

APPENDIX A2

A layout/route plan detailing the information listed below is attached as **Appendix A2**:

- the property boundaries and numbers of all the properties within 50 metres of the site;
- the current land use as well as the land use zoning of the site;
- the current land use as well as the land use zoning each of the properties adjoining the site or sites;
- the exact position of each listed activity applied for (including alternatives);
- servitude(s) indicating the purpose of the servitude;
- a legend; and
- a north arrow.



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LEGEND

- Rhovan Property Boundaries
- 50m Buffer Zone
- Historical Features

WGS84

DD

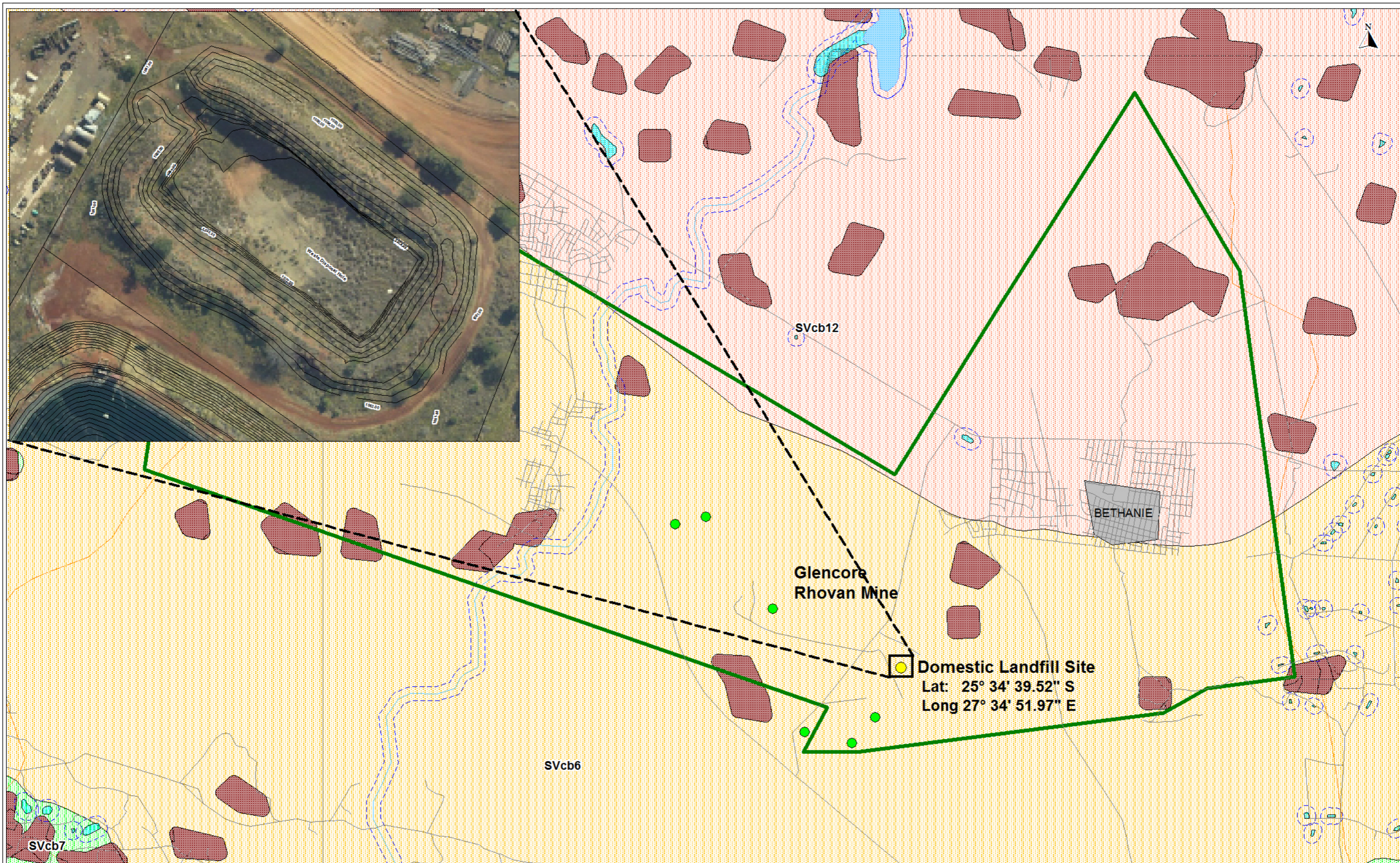
Date Compiled: October 2014

Layout / Route Plan

APPENDIX A3(i)

A sensitivity map detailing the information listed below is attached as **Appendix A3(i)**:

- watercourses;
- the 1:100 year flood line (100m buffer around watercourses);
- ridges;
- for gentle slopes the 1 metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and
- cultural and historical features;
- areas with indigenous vegetation (even if it is degraded or infested with alien species)



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LEGEND

- Rhovan Property Boundaries
- Roads
- Nearest Town
- Cultural/Historical Sites

- Hills and Ridges
- Wetlands
- Rivers & Streams
- 100m Buffer zone

Indigenous Vegetation

- SVcb7 Norite Koppies Bushveld
- SVcb6 Marikana Thornveld
- SVcb12 Central Sandy Bushveld

WGS84

DD

Date Compiled: October 2014

**Sensitivity Map:
Watercourses, Ridges
and Indigenous Vegetation**