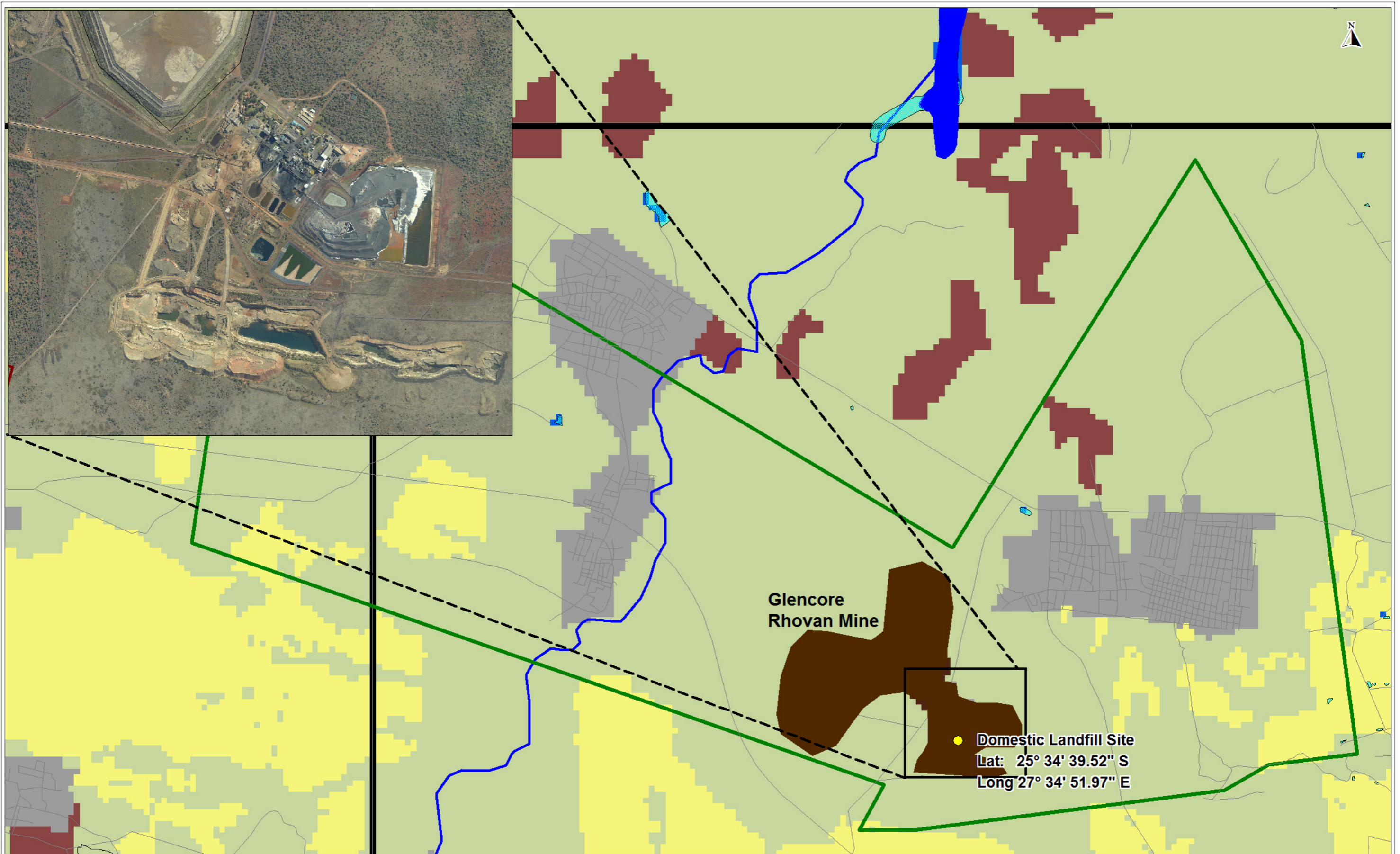


APPENDIX D4

Appendix D4 contains the habitat condition map. Habitat condition was estimated by incorporating both data available from the SANBI Biodiversity-GIS database and site visit information.



JMA CONSULTING (PTY) LTD.

Sustainable Environmental Solutions
through
Integrated Science and Engineering



Client: Glencore - Rhovan Mine

Project: Decommissioning of
Domestic Landfill

LEGEND

- Rhoan Property Boundaries
- Roads
- Nearest Town

- Rivers & Streams
- Dams
- Wetlands

Land cover

- Natural / Near Natural
- Agricultural
- Mining
- Degraded
- Urban

WGS84

DD

Date Compiled: October 2014

**Biodiversity Map
(Habitat Conditions)**

APPENDIX E

- 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 E1

Advertisements and Notices

NEWSPAPER ADVERTISEMENTS

NOTICE OF PUBLIC MEETING

TO BE HELD IN FULFILMENT OF THE REQUIREMENTS OF THE PROCESS RELATED TO AN BASIC ASSESSMENT APPLICATION

Notice is hereby given of a Public Participation Process as required in terms of the provisions contained in *inter alia* the Environmental Impact Assessment Regulations, 2014 taken effect on 8 December 2014, published in terms of the National Environmental Management Act, (Act No 107 of 1998), the National Environmental Management: Waste Act (Act 59 of 2008) as they relate to applications for the Glencore Operations South Africa (Pty) Ltd – Rhovan Mine Project.

This advertisement serves as a notification, to all Interested and Affected Parties (I&AP's), of the application for the decommissioning of a Domestic Waste Disposal Facility and the required public participation process. This advert also serves as an invitation to register as an I&AP's. All registered I&AP's will form part of the I&AP's database that will be notified of proposed activities throughout the project.

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

The following activity related to the above are being applied for:

NEM: WA Activity:

1. GNR 921, Category A – Activity 14

The following topics will be discussed:

- **The Environmental Legal Authorisation Requirements relevant to the project;**
- **The Draft Basic Assessment Report (BAR)**
- **The Waste Licence Application (WLA) submitted to DMR;**
- **The way forward in the BA process.**

Applicant: Glencore Operations South Africa (Pty) Ltd – Rhovan Mine

Process Description: The proposed project will include an application for authorisation for the decommissioning of a Domestic Waste Disposal Facility at Glencore Operations South Africa (Pty) Ltd. - Rhovan Mine, Located within the Boundaries of the Rustenburg Local Municipality in the North – West Province.

Project Location: Glencore Operations South Africa (Pty) Ltd. - Rhovan Mine is located near the town of Brits and Bethanie in the North West Province of South Africa. GPS co-ordinates (Google Earth): 25°34'26.72"S & 27°34'55.27"E

Consultant: Kobus Du Plessis
JMA Consulting (Pty) Ltd
Tel: (013) 665 1788
Fax: (013) 665 2364
Email: kobus@jmaconsult.co.za
Postal: P.O. Box 883, Delmas, 2210



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

Date of Publication: 30 April 2015

Public Participation: In accordance with EIA regulations you are hereby then cordially invited to attend the Public Meeting scheduled for **10:00am on 14 May 2015** at the Base Ranch (Conty's Place), 100 Industrial Site, Bethanie. GPS Coordinates (Google Earth): 25°32'52.77"S; 27°35'38.99"E.

It is important to note that this Basic Assessment Process, as prescribed by the National Environmental Management Act (Act 107 of 1998), will be conducted in conjunction with an Waste Licence Application in turns of the National Environmental Management: Waste Act (Act 59 of 2008), during which all Interested and Affected Parties must be informed and consulted.

In order to ensure that you are identified and registered as an Interested and Affected Party please submit your name, contact information and interest in the matter, in writing, to the consultant, Mr Kobus Du Plessis, as given above by means of **fax, e-mail or post.**

If any further information is required please do not hesitate to contact us.

PLATINUM WEEKLY NEWSPAPER

BRITS POS NEWSPAPER

SITE NOTICES

NOTICE OF PUBLIC MEETING

TO BE HELD IN FULFILMENT OF THE REQUIREMENTS OF THE PROCESSES RELATED TO AN BASIC ASSESSMENT APPLICATION

Notice is hereby given of a Public Participation Process as required in terms of the provisions contained in *inter alia* the Environmental Impact Assessment Regulations, 2014 taken effect on 8 December 2014, published in terms of the National Environmental Management Act, (Act No 107 of 1998), the National Environmental Management: Waste Act (Act 59 of 2008) as they relate to applications for the Glencore Operations South Africa (Pty) Ltd – Rhovan Mine Project.

This advertisement serves as a notification, to all Interested and Affected Parties (I&AP's), of the application for the decommissioning of a Domestic Waste Disposal Facility and the required public participation process. This advert also serves as an invitation to register as an I&AP's. All registered I&AP's will form part of the I&AP's database that will be notified of proposed activities throughout the project.

REFERENCE NUMBERS:

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

THE FOLLOWING ACTIVITY RELATED TO THE ABOVE ARE BEING APPLIED FOR:

➤ NEM:WA Activity:

1. GNR 921, Category A – Activity 14

I&AP MEETING (14 MAY 2015 – 10:00)

The I&AP meeting will take place at “The Base Ranch” where the following topics will be under discussion:

- The Environmental Legal Authorisation Requirements relevant to the project;
- The Draft Basic Assessment Report (BAR)
- The Waste Licence Application (WLA) submitted to DMR;
- The way forward in the BA process.

APPLICANT:

Glencore Operations South Africa (Pty) Ltd – Rhovan Mine

PROPOSED ACTIVITY

The proposed project will include an application for authorisation for the decommissioning of a Domestic Waste Disposal Facility at Glencore Operations South Africa (Pty) Ltd. - Rhovan Mine, Located within the Boundaries of the Rustenburg Local Municipality in the North – West Province.

PROJECT LOCATION

Glencore Operations South Africa (Pty) Ltd. - Rhovan Mine is located near the town of Brits in the North West Province of South Africa. GPS co-ordinates (Google Earth): 25°34'26.72"S & 27°34'55.27"E

DATE OF THIS NOTICE

30 April 2015

CONSULTANT

JMA Consulting (Pty) Ltd

Contact: Kobus du Plessis

Tel: (013) – 665 1788

Fax: (013) – 665 2364

Email: kobus@jmaconsult.co.za

Postal: P.O. Box 883

Delmas, 2210



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

It is important to note that this Environmental Impact Assessment Process, as prescribed by the National Environmental Management Act (Act 107 of 1998), will be conducted in conjunction with an Waste Licence Application in terms of the National Environmental Management: Waste Act (Act 59 of 2008), during which all Interested and Affected Parties must be informed and consulted.

In order to ensure that you are identified and registered as an Interested and Affected Party please submit your name, contact information and interest in the matter, in writing, to the consultant, Mr Kobus Du Plessis, as given above by means of fax, e-mail or post. You are also cordially invited to attend the Interested & Affected Party Meeting scheduled for

10:00am on 14 May 2015,

At the Base Ranch (Conty's Place), 100 Industrial Site, Bethanie. GPS Coordinates (Google Earth): 25°32'52.77"S; 27°35'38.99"E, where further registration as I&AP can be done.

If any further information is required please do not hesitate to contact us.

APPENDIX E2

Letter of notification to I&AP's



JMA10413

April 2015

ATTENTION: REGISTERED INTERESTED & AFFECTED PARTY

Dear Sir / Madam

NOTICE OF A BASIC ASSESSMENT APPLICATION FOR THE DECOMMISSIONING OF THE DOMESTIC WASTE DISPOSAL FACILITY AT GLENCORE OPERATIONS SOUTH AFRICA (PTY) LTD – RHOVAN MINE.

Notice is hereby given in terms of the Environmental Impact Assessment Regulations, 2014 taken effect on 8 December 2014 of the National Environmental Management Act (Act 107 of 1998), with the intent to carry out the above mentioned activity. In terms of the Environmental Impact Assessment Regulations, 2014 taken effect on 8 December 2014, notice of the proposed project is hereby given to all Interested & Affected Parties (**I&AP's**), the surrounding land owners, as well as any organ of state that may have jurisdiction over any aspect of the proposed activity.

The proposed project will include the following application for authorisation:

- Decommissioning of the domestic waste disposal facility

Glencore Operations South Africa (Pty) Ltd. - Rhovan Mine has appointed JMA Consulting (Pty) Ltd as the independent consultants responsible to conduct and complete the formal environmental authorization process as well as the I&AP and Authority Participation Process. This environmental authorization processes entails a *Basic Assessment Report*. Please note that the process described above requires I&AP consultation to be done, and that this notification letter has the function of notifying and informing all identified I&AP's to date.

You/Your organization have been identified and provisionally registered as I&AP to this project. Should you however wish to not form part of this process please notify the consultant and you will be removed from the mailing list.


Please find attached to this letter an I&AP Comments Page whereupon all contact details and any comments or concerns can be stated and submitted to the Consultant for consideration.

You/your organization are hereby then cordially invited to attend the I&AP Public Meeting, that will be held at **10:00 on Thursday, 14 May 2015**, in order to answer any questions that you might have on the planned activities and to provide you with any additional information that you may require. **The meeting will be held at the Base Ranch (Conty's Place), 100 Industrial Site, Bethanie. GPS Coordinates (Google Earth): 25°32'52.77"S; 27°35'38.99"E.** Please find attached a map with directions to the venue.

2005/039663/07

For any further information please do not hesitate to contact the Consultant. Contact information is available on the Comments Page.

Yours sincerely



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

LET8383

From: Kobus Du Plessis
To: ["nwecoforum@mweb.co.za"](mailto:nwecoforum@mweb.co.za); ["magdag@iafrica.co.za"](mailto:magdag@iafrica.co.za); ["mikegoo@lonplats.com"](mailto:mikegoo@lonplats.com); ["bgummow@op.up.ac.za"](mailto:bgummow@op.up.ac.za); ["nicos@lonplats.com"](mailto:nicos@lonplats.com); ["maos@gwisa.com"](mailto:maos@gwisa.com); ["mvr@aepa.co.za"](mailto:mvr@aepa.co.za); ["nickrakolle@madibeng.gov.za"](mailto:nickrakolle@madibeng.gov.za); ["mottlalekgomommote@madibeng.gov.za"](mailto:mottlalekgomommote@madibeng.gov.za); ["mthomagasa@madibeng.gov.za"](mailto:mthomagasa@madibeng.gov.za); ["leonlelaka@madibeng.gov.za"](mailto:leonlelaka@madibeng.gov.za); ["fnmnisi@bojanala.gov.za"](mailto:fnmnisi@bojanala.gov.za); ["mathekgath@yahoo.com"](mailto:mathekgath@yahoo.com); ["tebogo.mekawe@gmail.com"](mailto:tebogo.mekawe@gmail.com); AmandaB@bojanala.gov.za; ["Nnndwakhulu.masera@dmr.gov.za"](mailto:Nnndwakhulu.masera@dmr.gov.za); ["shaic@dwa.gov.za"](mailto:shaic@dwa.gov.za); ["smukhola@nwdedect.gov.za"](mailto:smukhola@nwdedect.gov.za); ["Nevhufumbal@nda.agric.za"](mailto:Nevhufumbal@nda.agric.za); kamontwedi@ruraldevelopment.gov.za; ["info@sahra.org.za"](mailto:info@sahra.org.za); ["Malcolm.davids@dme.gov.za"](mailto:Malcolm.davids@dme.gov.za); ["Ruloff.dekker@dme.gov.za"](mailto:Ruloff.dekker@dme.gov.za); ["Nick.engelbrecht@dme.gov.za"](mailto:Nick.engelbrecht@dme.gov.za); ["seth.lesekele@dme.gov.za"](mailto:seth.lesekele@dme.gov.za); ["david.malao@dme.gov.za"](mailto:david.malao@dme.gov.za); ["Malatsi.mashala@dme.gov.za"](mailto:Malatsi.mashala@dme.gov.za); ["Xolile.mbonambi@dme.gov.za"](mailto:Xolile.mbonambi@dme.gov.za); ["hpnel@mweb.co.za"](mailto:hpnel@mweb.co.za); ["Thabo.ngwenya@dme.gov.za"](mailto:Thabo.ngwenya@dme.gov.za); ["Doreen.noko@dme.gov.za"](mailto:Doreen.noko@dme.gov.za); ["Andries.vanrensburg@dme.gov.za"](mailto:Andries.vanrensburg@dme.gov.za); ["nkhumalo@sahra.org.za"](mailto:nkhumalo@sahra.org.za); ["Jlavin@sahra.org.za"](mailto:Jlavin@sahra.org.za); rmanashi@nwpg.gov.za; rramotswa@ruraldevelopment.gov.za; ["Qimasika@nwpg.gov.za"](mailto:Qimasika@nwpg.gov.za); pmatlapeng@nwpg.gov.za; ["oskosana@nwpg.gov.za"](mailto:oskosana@nwpg.gov.za); ["shaic@dwaf.co.za"](mailto:shaic@dwaf.co.za); ["maben@dwaf.gov.za"](mailto:maben@dwaf.gov.za); ["mshoshoko@environment.gov.za"](mailto:mshoshoko@environment.gov.za); ["mtshitangoni@environment.gov.za"](mailto:mtshitangoni@environment.gov.za); ["Lucas.Mahlangu"](mailto:Lucas.Mahlangu); ["phumudzo.nethwadi@dmr.gov.za"](mailto:phumudzo.nethwadi@dmr.gov.za); ["tshilidzi.phalala@dmr.gov.za"](mailto:tshilidzi.phalala@dmr.gov.za); Lufuno.Nevhufumba (lufuno.vhufumba@gmail.com); amogelang@gmail.com; ["kjmasebe@rustenburg.gov.za"](mailto:kjmasebe@rustenburg.gov.za); Speaker (speaker@rustenburg.gov.za); ["vmakona@rustenburg.gov.za"](mailto:vmakona@rustenburg.gov.za); ["tnkadimeng@rustenburg.gov.za"](mailto:tnkadimeng@rustenburg.gov.za); ["mmodisakeng@rtbcc.co.za"](mailto:mmodisakeng@rtbcc.co.za); ["Ntsebe@rtbcc.co.za"](mailto:Ntsebe@rtbcc.co.za); ["mmathekgana@rtbcc.co.za"](mailto:mmathekgana@rtbcc.co.za); ["ltenake@rustenburg.co.za"](mailto:ltenake@rustenburg.co.za); ["kmekgoe@rustenburg.co.za"](mailto:kmekgoe@rustenburg.co.za); ["kjmasebe@rustenburg.gov.za"](mailto:kjmasebe@rustenburg.gov.za); ["vmakona@rustenburg.gov.za"](mailto:vmakona@rustenburg.gov.za); ["tnkadimeng@rustenburg.gov.za"](mailto:tnkadimeng@rustenburg.gov.za); ["tyira@amplats.co.za"](mailto:tyira@amplats.co.za); ["FannieMn@bojanala.gov.za"](mailto:FannieMn@bojanala.gov.za)
Cc: melanie.silvis@glencore.co.za; [Riaan Grobbelaar](mailto:Riaan.Grobbelaar); [Rene Rademeyer](mailto:Rene.Rademeyer)
Subject: Rhovan_Basic Assessment_Notification of Public Meeting_14 May 2015_DMR Ref: (NW) 30/5/1/1/3/2/1/87 EM
Date: 24 April 2015 09:51:00 AM
Attachments: [image002.png](#)
[LET8383 Rhovan BA I&AP's notification letter 21042015.pdf](#)
[Rhovan_BAPublicMeeting_PressAdvert_Final.pdf](#)
[RhovanBAR_I&AP_CommentPage.pdf](#)
[Directions to Public Meeting Venue Base Ranch Bethanie 14 May 2015.jpg](#)
[Map to Public Meeting Venue Base Ranch Bethanie 14 May 2015.jpg](#)
[Rhovan_BID_April 2015.pdf](#)

Dear Interested and Affected Party

You are hereby cordially invited to attend the Glencore Operations South Africa (Pty) Ltd. - Rhovan Mine (Basic Assessment) Public Meeting scheduled for **10h00am on 14 May 2015**.

The meeting will be held at the Base Ranch (Conty's Place), 100 Industrial Site, Bethanie. GPS Coordinates (Google Earth): 25°32'52.77"S; 27°35'38.99"E.

Please find the following attached documentation:

- I&AP's Notification Letter;
- Advertisement placed on 30 April 2015 in the Brits Post & Platinum Weekly ;
- Directions to Venue for the Public Meeting to be held on 14 May 2015, 10h00 at the Base Ranch (Conty's Place), Bethanie;
- I&AP's Comment Page;
- Background Information Document (BID)

For any further information please do not hesitate to contact me.

Kind regards

Kobus du Plessis

JMA CONSULTING (PTY) LTD
P O BOX 883
DELMAS
2210

Tel No.: 013-665 1788

Fax No.: 013-665 2364

E-mail: kobus@jmaconsult.co.za

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Dear Interested and Affected Party.Glencore Operations South Africa (Pty) Ltd – Rhovan Mine will be entering the formal process with regards to application for authorisation for decommissioning of a domestic Landfill on site.You are hereby notified by JMA Consulting (Pty) Ltd, of the Public Meeting for Rhovan.It will be held 10h00 on 14 May 2015, at the Base Ranch (Conty's Place), 100 Industrial Site, Bethanie.GPS Coordinates (Google Earth): 25°32'52.77"S; 27°35'38.99"E.Feel free to contact me.Kobus Du Plessis.013-665 1788.Kobus@jmaconsult.co.za

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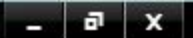
0824653459

Dear Interested and Affected Party.Glencore Operations South Africa (Pty) Ltd – Rhovan Mine will be entering the formal process with regards to application for authorisation for decommissioning of a domestic Landfill on site.You are hereby notified by JMA Consulting (Pty) Ltd, of the Public Meeting for Rhovan.It will be held 10h00 on 14 May 2015, at the Base Ranch (Conty's Place), 100 Industrial Site, Bethanie.GPS Coordinates (Google Earth): 25°32'52.77"S; 27°35'38.99"E.Feel free to contact me.Kobus Du Plessis.013-665 1788.Kobus@jmaconsult.co.za

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Dear Interested and Affected F

0726004394



Dear Interested and Affected Party.Glencore Operations South Africa (Pty) Ltd – Rhovan Mine will be entering the formal process with regards to application for authorisation for decommissioning of a domestic Landfill on site.You are hereby notified by JMA Consulting (Pty) Ltd, of the Public Meeting for Rhovan.It will be held 10h00 on 14 May 2015, at the Base Ranch (Conty's Place), 100 Industrial Site, Bethanie.GPS Coordinates (Google Earth): 25°32'52.77"S; 27°35'38.99"E.Feel free to contact me.Kobus Du Plessis.013-665 1788.Kobus@jmaconsult.co.za

12:20 PM



APPENDIX E3

Issues (Comments) and Response Register

UP TO DATE NO FEEDBACK WAS RECEIVED FROM ANY I&AP'S

APPENDIX E4

Letter of notification (Authorities)



mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

DMR 10

Private Bag A1, Klerksdorp, 2570, Tel: (018) 487 9830, Fax: (018) 487 9852
Cnr Magaretha Prinsloo and Voortreker Street, Vaal University Building, Klerksdorp, 2571

From: Directorate Mineral Regulation: North West

Sub Directorate: Mine Environmental Management **Ref:** (NW) 30/5/1/1/3/2/1/87 EM

Enquiries: Mr. T Phalala **Email:** tshilidzi.phalala@dmr.gov.za

Attention: Adriaan Brugman

Glencore Operations South Africa (Pty) Ltd (Rhovan Mine)

P.O Box 3630

Brits

0250

Tel No.: (012) 318 0709

Fax No.: (012) 318 0756

Dear Sir

RE: ACKNOWLEDGEMENT OF RECEIPT OF WASTE LICENCE APPLICATION FORM FOR DECOMMISSIONING OF THE DOMESTIC WASTE DISPOSAL FACILITY (SOME 0.62 HA) AT GLENCORE OPERATIONS SOUTHAFRICA (PTY) LTD (RHOVAN MINE), SITUATED IN THE MAGISTERIAL DISTRICT OF ODI.

This Department acknowledge receipt of the waste licence application form for the above mentioned project submitted on 14 January 2015 in terms of regulation of Environmental Impact Assessment Regulations of 04 December 2014. The Department hereby **accepts** Waste Licence Application Form.

Please note that the application has been assigned to **Mr. Tshilidzi Phalala**, North West Department of Mineral Resources, Klerksdorp Office, reachable on the above mentioned contact details. This file reference number is **NW30/5/1/2/3/2/1/87 EM**. Kindly quote this


reference number and the name of the officer it has been assigned to in any future correspondence in respect of the application including notification to be used for public participation process.

You are therefore required to submit the Basic Assessment Report, Environmental Management Programme and Closure Plan as required in terms of regulation 19 (1) (a) of Environmental Impact Assessment Regulations of 04 December 2014 on or before 22 June 2015 (3 hard copies to be submitted to the office).

You are requested to submit future correspondences pertaining to this application to the relevant officer or office where he is based to this address:

Cnr Magaretha, Prinsloo and Voortrekker Street,
Vaal University of Technology Building,
Klerksdorp,
2571

Yours faithfully

.....

REGIONAL MANAGER
MINERAL REGULATION
NORTH-WEST REGION

DATE: 09/02/2015.....

From: Kobus Du Plessis
To: nwecoforum@mweb.co.za; magdag@iafrica.co.za; mikegoo@lonplats.com; bgummow@op.up.ac.za; nicos@lonplats.com; maos@gwisa.com; mvr@aepa.co.za; nickrakolle@madibeng.gov.za; mottlalekgomommote@madibeng.gov.za; mthomagasa@madibeng.gov.za; leonlelaka@madibeng.gov.za; fnmnisi@bojanala.gov.za; mathekgath@yahoo.com; tebogo.mekawe@gmail.com; AmandaB@bojanala.gov.za; Nnndwakhulu.masera@dmr.gov.za; shaic@dwa.gov.za; smukhola@nwdedect.gov.za; Nevhufumbal@nda.agric.za; kamontwedi@ruraldevelopment.gov.za; info@sahra.org.za; Malcolm.davids@dme.gov.za; Ruloff.dekker@dme.gov.za; Nick.engelbrecht@dme.gov.za; seth.lesekele@dme.gov.za; david.malao@dme.gov.za; Malatsi.mashala@dme.gov.za; Xolile.mbonambi@dme.gov.za; hpnel@mweb.co.za; Thabo.ngwenya@dme.gov.za; Doreen.noko@dme.gov.za; Andries.vanrensburg@dme.gov.za; nkhumalo@sahra.org.za; Jlavin@sahra.org.za; rmanashi@nwpg.gov.za; rramotswa@ruraldevelopment.gov.za; Qimasika@nwpg.gov.za; pmatlapeng@nwpg.gov.za; oskosana@nwpg.gov.za; shaic@dwaf.co.za; maben@dwaf.gov.za; mshphoko@environment.gov.za; mtshitangoni@environment.gov.za; Lucas.Mahlangu; phumudzo.nethwadi@dmr.gov.za; tshilidzi.phalala@dmr.gov.za; Lufuno.Nevhufumba (lufuno.vhufumba@gmail.com); amogelang@gmail.com; kjmasebe@rustenburg.gov.za; Speaker (speaker@rustenburg.gov.za); vmakona@rustenburg.gov.za; tnkadimeng@rustenburg.gov.za; mmodisakeng@rtbcc.co.za; Ntsebe@rtbcc.co.za; mmathekgana@rtbcc.co.za; ilenake@rustenburg.co.za; kmekgoe@rustenburg.co.za; kjmasebe@rustenburg.gov.za; vmakona@rustenburg.gov.za; tnkadimeng@rustenburg.gov.za; tyira@amplats.co.za; FannieMn@bojanala.gov.za
Cc: melanie.silvis@glencore.co.za; Riaan.Grobbelaar; Rene.Rademeyer
Subject: Rhovan_Basic Assessment_Notification of Public Meeting_14 May 2015_DMR Ref: (NW) 30/5/1/1/3/2/1/87 EM
Date: 24 April 2015 09:51:00 AM
Attachments: [image002.png](#)
[LET8383 Rhovan BA I&AP's notification letter 21042015.pdf](#)
[Rhovan_BAPublicMeeting_PressAdvert_Final.pdf](#)
[RhovanBAR_I&AP_CommentPage.pdf](#)
[Directions to Public Meeting Venue Base Ranch Bethanie 14 May 2015.jpg](#)
[Map to Public Meeting Venue Base Ranch Bethanie 14 May 2015.jpg](#)
[Rhovan_BID_April 2015.pdf](#)

Dear Interested and Affected Party

You are hereby cordially invited to attend the Glencore Operations South Africa (Pty) Ltd. - Rhovan Mine (Basic Assessment) Public Meeting scheduled for **10h00am on 14 May 2015**.

The meeting will be held at the Base Ranch (Conty's Place), 100 Industrial Site, Bethanie. GPS Coordinates (Google Earth): 25°32'52.77"S; 27°35'38.99"E.

Please find the following attached documentation:

- I&AP's Notification Letter;
- Advertisement placed on 30 April 2015 in the Brits Post & Platinum Weekly ;
- Directions to Venue for the Public Meeting to be held on 14 May 2015, 10h00 at the Base Ranch (Conty's Place), Bethanie;
- I&AP's Comment Page;
- Background Information Document (BID)

For any further information please do not hesitate to contact me.

Kind regards

Kobus du Plessis

JMA CONSULTING (PTY) LTD
P O BOX 883
DELMAS
2210

Tel No.: 013-665 1788

Fax No.: 013-665 2364

E-mail: kobus@jmaconsult.co.za



JMA10413

April 2015

ATTENTION: REGISTERED INTERESTED & AFFECTED PARTY

Dear Sir / Madam

NOTICE OF A BASIC ASSESSMENT APPLICATION FOR THE DECOMMISSIONING OF THE DOMESTIC WASTE DISPOSAL FACILITY AT GLENCORE OPERATIONS SOUTH AFRICA (PTY) LTD – RHOVAN MINE.

Notice is hereby given in terms of the Environmental Impact Assessment Regulations, 2014 taken effect on 8 December 2014 of the National Environmental Management Act (Act 107 of 1998), with the intent to carry out the above mentioned activity. In terms of the Environmental Impact Assessment Regulations, 2014 taken effect on 8 December 2014, notice of the proposed project is hereby given to all Interested & Affected Parties (**I&AP's**), the surrounding land owners, as well as any organ of state that may have jurisdiction over any aspect of the proposed activity.

The proposed project will include the following application for authorisation:

- Decommissioning of the domestic waste disposal facility

Glencore Operations South Africa (Pty) Ltd. - Rhovan Mine has appointed JMA Consulting (Pty) Ltd as the independent consultants responsible to conduct and complete the formal environmental authorization process as well as the I&AP and Authority Participation Process. This environmental authorization processes entails a *Basic Assessment Report*. Please note that the process described above requires I&AP consultation to be done, and that this notification letter has the function of notifying and informing all identified I&AP's to date.

You/Your organization have been identified and provisionally registered as I&AP to this project. Should you however wish to not form part of this process please notify the consultant and you will be removed from the mailing list.


Please find attached to this letter an I&AP Comments Page whereupon all contact details and any comments or concerns can be stated and submitted to the Consultant for consideration.

You/your organization are hereby then cordially invited to attend the I&AP Public Meeting, that will be held at **10:00 on Thursday, 14 May 2015**, in order to answer any questions that you might have on the planned activities and to provide you with any additional information that you may require. **The meeting will be held at the Base Ranch (Conty's Place), 100 Industrial Site, Bethanie. GPS Coordinates (Google Earth): 25°32'52.77"S; 27°35'38.99"E.** Please find attached a map with directions to the venue.

2005/039663/07

For any further information please do not hesitate to contact the Consultant. Contact information is available on the Comments Page.

Yours sincerely



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

LET8383

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Dear Interested and Affected Party.Glencore Operations South Africa (Pty) Ltd – Rhovan Mine will be entering the formal process with regards to application for authorisation for decommissioning of a domestic Landfill on site.You are hereby notified by JMA Consulting (Pty) Ltd, of the Public Meeting for Rhovan.It will be held 10h00 on 14 May 2015, at the Base Ranch (Conty's Place), 100 Industrial Site, Bethanie.GPS Coordinates (Google Earth): 25°32'52.77"S; 27°35'38.99"E.Feel free to contact me.Kobus Du Plessis.013-665 1788.Kobus@jmaconsult.co.za

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0824653459

Dear Interested and Affected Party.Glencore Operations South Africa (Pty) Ltd – Rhovan Mine will be entering the formal process with regards to application for authorisation for decommissioning of a domestic Landfill on site.You are hereby notified by JMA Consulting (Pty) Ltd, of the Public Meeting for Rhovan.It will be held 10h00 on 14 May 2015, at the Base Ranch (Conty's Place), 100 Industrial Site, Bethanie.GPS Coordinates (Google Earth): 25°32'52.77"S; 27°35'38.99"E.Feel free to contact me.Kobus Du Plessis.013-665 1788.Kobus@jmaconsult.co.za

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Dear Interested and Affected Party.Glencore Operations South Africa (Pty) Ltd – Rhovan Mine will be entering the formal process with regards to application for authorisation for decommissioning of a domestic Landfill on site.You are hereby notified by JMA Consulting (Pty) Ltd, of the Public Meeting for Rhovan.It will be held 10h00 on 14 May 2015, at the Base Ranch (Conty's Place), 100 Industrial Site, Bethanie.GPS Coordinates (Google Earth): 25°32'52.77"S; 27°35'38.99"E.Feel free to contact me.Kobus Du Plessis.013-665 1788.Kobus@jmaconsult.co.za

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APPENDIX E5

I&AP's database

	Rose	Ms	READ - Rustenburg	Private Bag X 82268 RUSTENBURG 0300	014) 597 0146/7				
Inosuku	Queen	Ms	READ - Rustenburg	80 kerkrstraat Rustenburg 0396	014) 597 3597				Queenka@wspa.gov.za
Department of Water Affairs (DWA)									
Nhangase	Sebenzile		DWAF	Private bag s352 Hartebeespoort	012 2531905				Government Authorities
Shai	Caroline		Government Authorities	Private Bag s5 Mmabatho 0248	018 3840913				Government Authorities
Mabe	Nodumiso		Department of Water Affairs, Hartebeespoort	P/Bag X 357 Hartebeespoort, 0216	Tel:012 253 1026	Cell:082 328 4191		Fax:012 253 2761	Integrated Water Resource Management, Crocodile (West) Marico WMA
Shai	Caroline		North West Department Water Affairs,	Private Bag X 352 HARTEBEEPOORT 0216	(012) 253 1026	0823284191		(012) 253 2761 or 086 602 3414	shai@dwa.gov.za
Department of Environmental Affairs (DEA)									
Phoshoko	Malepo		Department of Environmental Affairs	Private Bag X447 Pretoria 0001	012 399 9779				Government Authorities
Lushaba	Mazwi		DEA	Car Pretorius & Van der Walt Street Federe Forum Building North Tower, 2nd Floor Pretoria 0001	012 3200488				Government Authorities
Mbatha	Mbukhele Yvonne		DEAT	8526 Protea Glen Extension 11 Pretoria 0001	012 3103655				Government Authorities
Luke	Peter		Government Authorities	car Pretorius & van der Walt Pretoria 0001	012 3103710			012 3221320	Government Authorities
Tshatjani	Melbo			Private Bag X447 Pretoria 0001	012) 310 3380	083 233 5926			mtshatjani@environment.gov.za
Department of Mineral Resources (DMR)									
Nethwazi	Phumadzo			Private Bag A1 Klerksdorp 5270	018 4879830			018 4879831	Government Authorities
Phalala	Tshilidzi	MR	DMR - Klerksdorp	Private Bag A1 Klerksdorp 5270	018 487 9830				Case Officer
Masera	N D			Private Bag A11 KLERKSDORP 5270	(018) 487 9830			(018) 487 9831	Nndwakhulu.masera@dmr.gov.za
Department of Agriculture, Forestry and Fisheries (DAFF)									
Ntshufumba	Lufuno		Department of Agriculture, Forestry and Fisheries (DAFF)						ntshufumba@daff.gov.za lufuno.ntshufumba@gmail.com
Ward Councilors									
Mochamma	D.S.	Mr	Ward 29					077 600 4394	
Mitshane	E.B.	Ms	Ward 30					073 815 0811	
Imael		Ms	Ward 30					076 926 2857	Bethane - Public Relations coordinator amogelane@gmail.com
Landowners / Surrounding Landowners									
Mahama	Henry Pito	Mr	Rep from cattle farmers	Cattle Farmers					Surrounding Private Land owners No Adres
Seletswane	Opua	Mr	Land owner - surrounding area	LO					Surrounding Private Land owners No Adres
Benue	Anthony			Bethane - The Lapa				082 256 3968	

APPENDIX E6

Minutes of meetings

APPENDIX F

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) Shaping and compaction of the waste body
- 2) Construct capping layer
- 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 in terms of 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 comprehensive impact assessment was conducted for the activity using the impact assessment methodology attached as Appendix J1 in terms of the aspects listed above and in terms of the environmental components identified to be potentially impacted upon. The impact assessment was only done for the two applicable life-cycle phases, namely the decommissioning and post closure phases. The impact assessment is presented in tabular format and consists 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

The impact assessment presented in tabular format facilitates the structured inclusion of requirements as stated in *inter alia* the DMR guideline (Guideline for the Compilation of an Environmental Impact Assessment and an Environmental Management Programme) and also provides the basis for the compilation of a comprehensive Environmental Management Programme (EMPr; Appendix G) ensuring that all identified impacts are managed/mitigated.

Decommissioning and Closure Phase Impact Assessment Table

Decommissioning and Closure Phase Impact Assessment											
Activity	Aspect	Potential Impact Description	Criteria for Determining Significance						Significance S-Number	Probability of Occurrence	Risk Level Before Management
			Spatial Extent	Intensity/Severity	Duration	Unacceptability	Mitigatory Difficulty	Significance Total			
Decommissioning of domestic landfill facility	Shape and compact waste body	Surface Water (Quality): Contamination of the surface water resource due to contaminated run-off from the activity footprint into the surface water resource.	1	1	1	1	1	5	S1	P2	Very Low Risk
		Aquatic Ecosystems (Habitat & Bio-diversity): Impact on Aquatic habitat and bio-diversity due to impacts on habitat attributes such as surface water flow and surface water quality.	1	1	1	1	1	5	S1	P2	Very Low Risk
		Air Quality (Gaseous Emissions): Deterioration in ambient air quality due to gaseous emissions from decommissioning activities (machinery and vehicles).	1	1	1	2	2	7	S2	P4	Low Risk
		Air Quality (Dust Fallout): Deterioration in ambient air quality due to dust generated from decommissioning activities (machinery and vehicles).	1	1	1	2	1	6	S2	P4	Low Risk
		Noise: Increase in ambient sound levels due to decommissioning activities (machinery and vehicles) e.g. reverse hooters/alarms	1	2	1	2	1	7	S2	P2	Very Low Risk
		Visuals (Visibility): The decommissioning activities will generate visible dust.	1	1	1	1	1	5	S1	P4	Low Risk
	Construct capping layer	Surface Water (Quality): Contamination of the surface water resource due to contaminated run-off from the activity footprint into the surface water resource.	1	1	1	1	1	5	S1	P2	Very Low Risk
		Aquatic Ecosystems (Habitat & Bio-diversity): Impact on Aquatic habitat and bio-diversity due to impacts on habitat attributes such as surface water flow and surface water quality.	1	1	1	1	1	5	S1	P2	Very Low Risk

Decommissioning and Closure Phase Impact Assessment

Activity	Aspect	Potential Impact Description	Criteria for Determining Significance					Significance S-Number	Probability of Occurrence	Risk Level Before Management	
			Spatial Extent	Intensity/Severity	Duration	Unacceptability	Mitigatory Difficulty				Significance Total
		Air Quality (Gaseous Emissions): Deterioration in ambient air quality due to gaseous emissions from decommissioning activities (machinery and vehicles).	1	1	1	2	2	7	S2	P4	Low Risk
		Air Quality (Dust Fallout): Deterioration in ambient air quality due to dust generated from decommissioning activities (machinery and vehicles).	1	1	1	2	1	6	S2	P4	Low Risk
		Noise: Increase in ambient sound levels due to decommissioning activities (machinery and vehicles) e.g. reverse hooters/alarms	1	2	1	2	1	7	S2	P2	Very Low Risk
		Visuals (Visibility): The decommissioning activities will generate visible dust.	1	1	1	1	1	5	S1	P4	Low Risk
	Fertilize the soil layer	Surface Water (Quality): Contamination of the surface water resource due to contaminated run-off from the activity footprint into the surface water resource.	1	1	1	1	1	5	S1	P2	Very Low Risk
	Aquatic Ecosystems (Habitat & Bio-diversity): Impact on Aquatic habitat and bio-diversity due to impacts on habitat attributes such as surface water flow and surface water quality.	1	1	1	1	1	5	S1	P2	Very Low Risk	
	Air Quality (Gaseous Emissions): Deterioration in ambient air quality due to gaseous emissions from decommissioning activities (machinery and vehicles).	1	1	1	2	2	7	S2	P4	Low Risk	
	Air Quality (Dust Fallout): Deterioration in ambient air quality due to dust generated from decommissioning activities (machinery and vehicles).	1	1	1	2	1	6	S2	P4	Low Risk	
	Noise: Increase in ambient sound levels due to decommissioning activities (machinery and vehicles) e.g. reverse hooters/alarms	1	2	1	2	1	7	S2	P2	Very Low Risk	

Decommissioning and Closure Phase Impact Assessment

Activity	Aspect	Potential Impact Description	Criteria for Determining Significance						Significance S-Number	Probability of Occurrence	Risk Level Before Management
			Spatial Extent	Intensity/Severity	Duration	Unacceptability	Mitigatory Difficulty	Significance Total			
		Visuals (Visibility): The decommissioning activities will generate visible dust.	1	1	1	1	1	5	S1	P4	Low Risk
	Re-vegetate the soil layer	Surface Water (Quality): Contamination of the surface water resource due to contaminated run-off (silt or sediment) from the activity footprint into the surface water resource.	1	1	1	1	1	5	S1	P2	Very Low Risk
		Aquatic Ecosystems (Habitat & Bio-diversity): Impact on Aquatic habitat and bio-diversity due to impacts on habitat attributes such as surface water flow and surface water quality.	1	1	1	1	1	5	S1	P2	Very Low Risk
		Air Quality (Gaseous Emissions): Deterioration in ambient air quality due to gaseous emissions from decommissioning activities (machinery and vehicles).	1	1	1	2	2	7	S2	P4	Low Risk
		Air Quality (Dust Fallout): Deterioration in ambient air quality due to dust generated from decommissioning activities (machinery and vehicles).	1	1	1	2	1	6	S2	P4	Low Risk
		Noise: Increase in ambient sound levels due to decommissioning activities (machinery and vehicles) e.g. reverse hooters/alarms	1	2	1	2	1	7	S2	P2	Very Low Risk
		Visuals (Visibility): The decommissioning activities will generate visible dust.	1	1	1	1	1	5	S1	P4	Low Risk

Post Closure Phase Impact Assessment Table

Post Closure Phase Impact Assessment											
Activity	Aspect	Potential Impact Description	Criteria for Determining Significance					Significance S-Number	Probability of Occurrence	Risk Level Before Management	
			Spatial Extent	Intensity/Severity	Duration	Unacceptability	Mitigatory Difficulty				Significance Total
Decommissioning of domestic landfill facility	Ineffective shaping (i.e. not free-draining)	Surface Water (Quality): Contamination of the surface water resource due to erosion caused by storm water runoff and surface water discharge with high suspended solids load.	2	1	3	2	1	9	S3	P2	Low Risk
		Aquatic Ecosystems (Habitat & Bio-diversity): Contamination of the surface water resource due to erosion caused by storm water runoff and surface water discharge with high suspended solids load.	2	2	3	2	1	10	S3	P2	Low Risk
		Air Quality (Dust Fallout): Deterioration in ambient air quality due to windblown dust generated from denuded surfaces.	2	1	3	2	1	9	S3	P2	Low Risk
	Ineffective vegetation cover	Surface Water (Quality): Contamination of the surface water resource due to erosion caused by storm water runoff and surface water discharge with high suspended solids load.	2	1	3	2	1	9	S3	P2	Low Risk
		Aquatic Ecosystems (Habitat & Bio-diversity): Contamination of the surface water resource due to erosion caused by storm water runoff and surface water discharge with high suspended solids load.	2	2	3	2	1	10	S3	P2	Low Risk
		Air Quality (Dust Fallout): Deterioration in ambient air quality due to windblown dust generated from denuded surfaces.	2	1	3	2	1	9	S3	P2	Low Risk

APPENDIX G

As defined in GNR 982 of 4 December 2014: Environmental Impact Assessment Regulations (Appendix 4) the content of an Environmental Management Programme (EMPr) must include:

- (1) An EMPr must comply with section 24 (N) of the Act and include:
 - (a)
 - (i) details of the EAP who prepared the EMPr
 - (ii) the expertise of that EAP to prepare an EMPr
 - (b) a detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description
 - (c) a description of the impact management objectives, including management statements, identifying the impacts that need to be avoided, managed and/or mitigated as identified through the environmental impact assessment process for all phases of the development including
 - (i) planning and design
 - (ii) pre-construction activities
 - (iii) construction activities
 - (iv) where relevant operation activities
 - (iiv) rehabilitation of the environment after construction and where applicable post closure
 - (d) a description of impact management outcomes, identifying the standard of impact management require for the aspects contemplated in paragraph (c).
 - (e) a description of impact management actions, identifying the manner in which the impact management objectives and outcomes contemplated in paragraphs (c) and (d) will be achieved, and may include actions to
 - (i) modify, remedy, control or stop action, activity or process which causes pollution or environmental degradation
 - (ii) remedy the cause of pollution or degradation and migration of pollutants
 - (iii) comply with any prescribed environmental management standards or practices
 - (iv) comply with any applicable provisions of the Act regarding financial provisions for rehabilitation where applicable
 - (f) the method of monitoring the implementation of the impact management actions contemplated in paragraph (e)
 - (g) the frequency of monitoring the implementation of the impact management actions contemplated in paragraph (e)
 - (h) and indication of the persons who will be responsible for the implementation of the impact management actions
 - (i) the time periods within which the impact management actions in paragraph (e) must be implemented
 - (j) the mechanism for monitoring compliance with the impact management actions contemplated in paragraph (e)

- (k) a program for reporting on compliance, taking into account the requirements as prescribed by these Regulations
- (l) and environmental awareness plan describing the manner in which
 - (i) the applicant intends to inform his or her employees of any environmental risk which may result from their work
 - (ii) risks must be dealt with in order to avoid pollution or the degradation of the environment

(2) where a proposed development and the geographical area within which it is located has been subjected to a pre-assessment using a spatial development tool, and the output of the pre-assessment in the form of a site specific development protocol has been adopted in the prescribed manner, the content of a EMPr may be determined by the adopted site specific development protocol applicable to the specific proposed development in the specific geographical area it is proposed in.

A comprehensive draft Environmental Management Programme (EMPr) was compiled by the EAP (refer to **Appendix H** attached to this Basic Assessment form/report for the details and expertise of the EAP) for the activity in terms of the aspects identified and in terms of the environmental components identified to be potentially impacted upon. Aspects identified are discussed in **Section D** of the Basic Assessment form/report.

Management objectives and the measures were suggested to mitigate/manage the potential impacts. The management programme was only done for the two applicable life-cycle phases, namely the decommissioning and post closure phases.

The draft EMPr is presented in tabular format and contains 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: Person Responsible for the Implementation if the Management Measures
- 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

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 this Appendix.

A comprehensive environmental awareness plan is attached as **Appendix J4** to this Basic Assessment form/report.

The activity falls within the property boundary within which Rhovan Mine lawfully operates. The activity will have no impact on the surrounding area and land use.

Decommissioning and Closure Phase Management Measures (EMPr) Tables

Decommissioning and Closure Phase Management Plan																
Activity	Aspect	Potential Impact Description	Management Measures													
			Risk Level Before Management	Management Objective	Proposed Management Measure	Risk Level after Management	Responsible Person	Management Time Schedule	Management Budget Quantum	Management Budget Allocation/ Provisioning	Monitoring Required	Monitoring Frequency	Monitoring Budget Quantum	Monitoring Budget Allocation/ Provisioning	Performance Assessment	Performance Assessment Time Schedule
Decommissioning of domestic landfill facility	Shape and compact waste body	Surface Water (Quality): Contamination of the surface water resource due to contaminated run-off from the activity footprint into the surface water resource.	Very Low Risk	Minimise surface water contamination. Prevent contamination of receiving environment.	Preferable to decommission during dry season. Construct earth berms around decommissioning area. Facilitate reticulation of contaminated water into existing storm water management system.	Very Low Risk	Rhovan SHEQ Manager	Decommissioning and Closure Phase	Decommissioning and Closure Phase Environmental Management Budget	Decommissioning and Closure Phase Environmental Management Budget	Surface water quality monitoring	Weekly	Environmental Monitoring Budget	Environmental Monitoring Budget	EMP Audit	Annually
		Aquatic Ecosystems (Habitat & Bio-diversity): Impact on Aquatic habitat and bio-diversity due to impacts on habitat attributes such as surface water flow and surface water quality.	Very Low Risk	Minimise surface water contamination. Prevent contamination of receiving environment.	Preferable to decommission during dry season. Construct earth berms around decommissioning area. Facilitate reticulation of contaminated water into existing storm water management system.	Very Low Risk	Rhovan SHEQ Manager	Decommissioning and Closure Phase	Decommissioning and Closure Phase Environmental Management Budget	Decommissioning and Closure Phase Environmental Management Budget	Surface water quality monitoring	Weekly	Environmental Monitoring Budget	Environmental Monitoring Budget	EMP Audit	Annually
		Air Quality (Gaseous Emissions): Deterioration in ambient air quality due to gaseous emissions from decommissioning activities (machinery and vehicles).	Low Risk	Minimize gaseous emissions.	Service machinery and vehicles on a regular basis. Prevent unnecessary idling of motors.	Very Low Risk	Rhovan Logistics Manager	Decommissioning and Closure Phase	Decommissioning and Closure Phase Environmental Management Budget	Decommissioning and Closure Phase Environmental Management Budget	Visual Inspection	Continuous	Environmental Monitoring Budget	Environmental Monitoring Budget	EMP Audit	Annually
		Air Quality (Dust Fallout): Deterioration in ambient air quality due to dust generated from decommissioning activities (machinery and vehicles).	Low Risk	Minimize dust generation.	Implement appropriate dust suppression measures.	Very Low Risk	Rhovan SHEQ Manager	Decommissioning and Closure Phase	Decommissioning and Closure Phase Environmental Management Budget	Decommissioning and Closure Phase Environmental Management Budget	Visual Inspection	Continuous	Environmental Monitoring Budget	Environmental Monitoring Budget	EMP Audit	Annually

Decommissioning and Closure Phase Management Plan

Activity	Aspect	Potential Impact Description	Management Measures													
			Risk Level Before Management	Management Objective	Proposed Management Measure	Risk Level after Management	Responsible Person	Management Time Schedule	Management Budget Quantum	Management Budget Allocation/ Provisioning	Monitoring Required	Monitoring Frequency	Monitoring Budget Quantum	Monitoring Budget Allocation/ Provisioning	Performance Assessment	Performance Assessment Time Schedule
Construct capping layer		Noise: Increase in ambient sound levels due to decommissioning activities (machinery and vehicles) e.g. reverse hooters/alarms	Low Risk	Minimize noise generation.	Restrict decommissioning activities to daylight hours as far as possible. Fit Hiss-Type instead of Tonal-Type reverse alarms.	Very Low Risk	Rhovan Logistics Manager	Decommissioning and Closure Phase	Decommissioning and Closure Phase Environmental Management Budget	Decommissioning and Closure Phase Environmental Management Budget	Visual Inspection	Continuous	Environmental Monitoring Budget	Environmental Monitoring Budget	EMP Audit	Annually
		Visuals (Visibility): The decommissioning activities will generate visible dust.	Low Risk	Restrict the extent of the impact within the site boundary. Restrict the extent of visible dust migration.	Implement appropriate dust suppression measures.	Very Low Risk	Rhovan Logistics Manager	Decommissioning and Closure Phase	Decommissioning and Closure Phase Environmental Management Budget	Decommissioning and Closure Phase Environmental Management Budget	Visual Inspection	Continuous	Environmental Monitoring Budget	Environmental Monitoring Budget	EMP Audit	Annually
		Surface Water (Quality): Contamination of the surface water resource due to contaminated run-off from the activity footprint into the surface water resource.	Very Low Risk	Minimise surface water contamination. Prevent contamination of receiving environment.	Preferable to decommission during dry season. Construct earth berms around decommissioning area. Facilitate reticulation of contaminated water into existing storm water management system.	Very Low Risk	Rhovan SHEQ Manager	Decommissioning and Closure Phase	Decommissioning and Closure Phase Environmental Management Budget	Decommissioning and Closure Phase Environmental Management Budget	Surface water quality monitoring	Weekly	Environmental Monitoring Budget	Environmental Monitoring Budget	EMP Audit	Annually
		Aquatic Ecosystems (Habitat & Bio-diversity): Impact on Aquatic habitat and bio-diversity due to impacts on habitat attributes such as surface water flow and surface water quality.	Very Low Risk	Minimise surface water contamination. Prevent contamination of receiving environment.	Preferable to decommission during dry season. Construct earth berms around decommissioning area. Facilitate reticulation of contaminated water into existing storm water management system.	Very Low Risk	Rhovan SHEQ Manager	Decommissioning and Closure Phase	Decommissioning and Closure Phase Environmental Management Budget	Decommissioning and Closure Phase Environmental Management Budget	Surface water quality monitoring	Weekly	Environmental Monitoring Budget	Environmental Monitoring Budget	EMP Audit	Annually
		Air Quality (Gaseous Emissions): Deterioration in ambient air quality due to gaseous emissions from decommissioning activities (machinery and vehicles).	Low Risk	Minimize gaseous emissions.	Service machinery and vehicles on a regular basis. Prevent unnecessary idling of motors.	Very Low Risk	Rhovan Logistics Manager	Decommissioning and Closure Phase	Decommissioning and Closure Phase Environmental Management Budget	Decommissioning and Closure Phase Environmental Management Budget	Visual Inspection	Continuous	Environmental Monitoring Budget	Environmental Monitoring Budget	EMP Audit	Annually

Decommissioning and Closure Phase Management Plan

Activity	Aspect	Potential Impact Description	Management Measures													
			Risk Level Before Management	Management Objective	Proposed Management Measure	Risk Level after Management	Responsible Person	Management Time Schedule	Management Budget Quantum	Management Budget Allocation/ Provisioning	Monitoring Required	Monitoring Frequency	Monitoring Budget Quantum	Monitoring Budget Allocation/ Provisioning	Performance Assessment	Performance Assessment Time Schedule
		Air Quality (Dust Fallout): Deterioration in ambient air quality due to dust generated from decommissioning activities (machinery and vehicles).	Low Risk	Minimize dust generation.	Implement appropriate dust suppression measures.	Very Low Risk	Rhovan SHEQ Manager	Decommissioning and Closure Phase	Decommissioning and Closure Phase Environmental Management Budget	Decommissioning and Closure Phase Environmental Management Budget	Visual Inspection	Continuous	Environmental Monitoring Budget	Environmental Monitoring Budget	EMP Audit	Annually
		Noise: Increase in ambient sound levels due to decommissioning activities (machinery and vehicles) e.g. reverse hooters/alarms	Low Risk	Minimize noise generation.	Restrict decommissioning activities to daylight hours as far as possible. Fit Hiss-Type instead of Tonal-Type reverse alarms.	Very Low Risk	Rhovan Logistics Manager	Decommissioning and Closure Phase	Decommissioning and Closure Phase Environmental Management Budget	Decommissioning and Closure Phase Environmental Management Budget	Visual Inspection	Continuous	Environmental Monitoring Budget	Environmental Monitoring Budget	EMP Audit	Annually
		Visuals (Visibility): The decommissioning activities will generate visible dust.	Low Risk	Restrict the extent of the impact within the site boundary. Restrict the extent of visible dust migration.	Implement appropriate dust suppression measures.	Very Low Risk	Rhovan Logistics Manager	Decommissioning and Closure Phase	Decommissioning and Closure Phase Environmental Management Budget	Decommissioning and Closure Phase Environmental Management Budget	Visual Inspection	Continuous	Environmental Monitoring Budget	Environmental Monitoring Budget	EMP Audit	Annually
	Fertilize the soil layer	Surface Water (Quality): Contamination of the surface water resource due to contaminated run-off from the activity footprint into the surface water resource.	Very Low Risk	Minimise surface water contamination. Prevent contamination of receiving environment.	Preferable to decommission during dry season. Construct earth berms around decommissioning area. Facilitate reticulation of contaminated water into existing storm water management system.	Very Low Risk	Rhovan SHEQ Manager	Decommissioning and Closure Phase	Decommissioning and Closure Phase Environmental Management Budget	Decommissioning and Closure Phase Environmental Management Budget	Surface water quality monitoring	Weekly	Environmental Monitoring Budget	Environmental Monitoring Budget	EMP Audit	Annually
		Aquatic Ecosystems (Habitat & Bio-diversity): Impact on Aquatic habitat and bio-diversity due to impacts on habitat attributes such as surface water flow and surface water quality.	Very Low Risk	Minimise surface water contamination. Prevent contamination of receiving environment.	Preferable to decommission during dry season. Construct earth berms around decommissioning area. Facilitate reticulation of contaminated water into existing storm water management system.	Very Low Risk	Rhovan SHEQ Manager	Decommissioning and Closure Phase	Decommissioning and Closure Phase Environmental Management Budget	Decommissioning and Closure Phase Environmental Management Budget	Surface water quality monitoring	Weekly	Environmental Monitoring Budget	Environmental Monitoring Budget	EMP Audit	Annually

Decommissioning and Closure Phase Management Plan

Activity	Aspect	Potential Impact Description	Management Measures													
			Risk Level Before Management	Management Objective	Proposed Management Measure	Risk Level after Management	Responsible Person	Management Time Schedule	Management Budget Quantum	Management Budget Allocation/ Provisioning	Monitoring Required	Monitoring Frequency	Monitoring Budget Quantum	Monitoring Budget Allocation/ Provisioning	Performance Assessment	Performance Assessment Time Schedule
		Air Quality (Gaseous Emissions): Deterioration in ambient air quality due to gaseous emissions from decommissioning activities (machinery and vehicles).	Low Risk	Minimize gaseous emissions.	Service machinery and vehicles on a regular basis. Prevent unnecessary idling of motors.	Very Low Risk	Rhovan Logistics Manager	Decommissioning and Closure Phase	Decommissioning and Closure Phase Environmental Management Budget	Decommissioning and Closure Phase Environmental Management Budget	Visual Inspection	Continuous	Environmental Monitoring Budget	Environmental Monitoring Budget	EMP Audit	Annually
		Air Quality (Dust Fallout): Deterioration in ambient air quality due to dust generated from decommissioning activities (machinery and vehicles).	Low Risk	Minimize dust generation.	Implement appropriate dust suppression measures.	Very Low Risk	Rhovan SHEQ Manager	Decommissioning and Closure Phase	Decommissioning and Closure Phase Environmental Management Budget	Decommissioning and Closure Phase Environmental Management Budget	Visual Inspection	Continuous	Environmental Monitoring Budget	Environmental Monitoring Budget	EMP Audit	Annually
		Noise: Increase in ambient sound levels due to decommissioning activities (machinery and vehicles) e.g. reverse hooters/alarms	Low Risk	Minimize noise generation.	Restrict decommissioning activities to daylight hours as far as possible. Fit Hiss-Type instead of Tonal-Type reverse alarms.	Very Low Risk	Rhovan Logistics Manager	Decommissioning and Closure Phase	Decommissioning and Closure Phase Environmental Management Budget	Decommissioning and Closure Phase Environmental Management Budget	Visual Inspection	Continuous	Environmental Monitoring Budget	Environmental Monitoring Budget	EMP Audit	Annually
		Visuals (Visibility): The decommissioning activities will generate visible dust.	Low Risk	Restrict the extent of the impact within the site boundary. Restrict the extent of visible dust migration.	Implement appropriate dust suppression measures.	Very Low Risk	Rhovan Logistics Manager	Decommissioning and Closure Phase	Decommissioning and Closure Phase Environmental Management Budget	Decommissioning and Closure Phase Environmental Management Budget	Visual Inspection	Continuous	Environmental Monitoring Budget	Environmental Monitoring Budget	EMP Audit	Annually
	Re-vegetate the soil layer	Surface Water (Quality): Contamination of the surface water resource due to contaminated run-off (silt or sediment) from the activity footprint into the surface water resource.	Very Low Risk	Minimise surface water contamination. Prevent contamination of receiving environment.	Preferable to decommission during dry season. Construct earth berms around decommissioning area. Facilitate reticulation of contaminated water into existing storm water management system.	Very Low Risk	Rhovan SHEQ Manager	Decommissioning and Closure Phase	Decommissioning and Closure Phase Environmental Management Budget	Decommissioning and Closure Phase Environmental Management Budget	Surface water quality monitoring	Weekly	Environmental Monitoring Budget	Environmental Monitoring Budget	EMP Audit	Annually

Decommissioning and Closure Phase Management Plan

Activity	Aspect	Potential Impact Description	Management Measures													
			Risk Level Before Management	Management Objective	Proposed Management Measure	Risk Level after Management	Responsible Person	Management Time Schedule	Management Budget Quantum	Management Budget Allocation/ Provisioning	Monitoring Required	Monitoring Frequency	Monitoring Budget Quantum	Monitoring Budget Allocation/ Provisioning	Performance Assessment	Performance Assessment Time Schedule
		Aquatic Ecosystems (Habitat & Bio-diversity): Impact on Aquatic habitat and bio-diversity due to impacts on habitat attributes such as surface water flow and surface water quality.	Very Low Risk	Minimise surface water contamination. Prevent contamination of receiving environment.	Preferable to decommission during dry season. Construct earth berms around decommissioning area. Facilitate reticulation of contaminated water into existing storm water management system.	Very Low Risk	Rhovan SHEQ Manager	Decommissioning and Closure Phase	Decommissioning and Closure Phase Environmental Management Budget	Decommissioning and Closure Phase Environmental Management Budget	Surface water quality monitoring	Weekly	Environmental Monitoring Budget	Environmental Monitoring Budget	EMP Audit	Annually
		Air Quality (Gaseous Emissions): Deterioration in ambient air quality due to gaseous emissions from decommissioning activities (machinery and vehicles).	Low Risk	Minimize gaseous emissions.	Service machinery and vehicles on a regular basis. Prevent unnecessary idling of motors.	Very Low Risk	Rhovan Logistics Manager	Decommissioning and Closure Phase	Decommissioning and Closure Phase Environmental Management Budget	Decommissioning and Closure Phase Environmental Management Budget	Visual Inspection	Continuous	Environmental Monitoring Budget	Environmental Monitoring Budget	EMP Audit	Annually
		Air Quality (Dust Fallout): Deterioration in ambient air quality due to dust generated from decommissioning activities (machinery and vehicles).	Low Risk	Minimize dust generation.	Implement appropriate dust suppression measures.	Very Low Risk	Rhovan SHEQ Manager	Decommissioning and Closure Phase	Decommissioning and Closure Phase Environmental Management Budget	Decommissioning and Closure Phase Environmental Management Budget	Visual Inspection	Continuous	Environmental Monitoring Budget	Environmental Monitoring Budget	EMP Audit	Annually
		Noise: Increase in ambient sound levels due to decommissioning activities (machinery and vehicles) e.g. reverse hooters/alarms	Low Risk	Minimize noise generation.	Restrict decommissioning activities to daylight hours as far as possible. Fit Hiss-Type instead of Tonal-Type reverse alarms.	Very Low Risk	Rhovan Logistics Manager	Decommissioning and Closure Phase	Decommissioning and Closure Phase Environmental Management Budget	Decommissioning and Closure Phase Environmental Management Budget	Visual Inspection	Continuous	Environmental Monitoring Budget	Environmental Monitoring Budget	EMP Audit	Annually
		Visuals (Visibility): The decommissioning activities will generate visible dust.	Low Risk	Restrict the extent of the impact within the site boundary. Restrict the extent of visible dust migration.	Implement appropriate dust suppression measures.	Very Low Risk	Rhovan Logistics Manager	Decommissioning and Closure Phase	Decommissioning and Closure Phase Environmental Management Budget	Decommissioning and Closure Phase Environmental Management Budget	Visual Inspection	Continuous	Environmental Monitoring Budget	Environmental Monitoring Budget	EMP Audit	Annually

Post Closure Phase Management Measures (EMPr) Tables

Post Closure Phase Management Plan

Activity	Aspect	Potential Impact Description	Management Measures													
			Risk Level Before Management	Management Objective	Proposed Management Measure	Risk Level after Management	Responsible Person	Management Time Schedule	Management Budget Quantum	Management Budget Allocation/ Provisioning	Monitoring Required	Monitoring Frequency	Monitoring Budget Quantum	Monitoring Budget Allocation/ Provisioning	Performance Assessment	Performance Assessment Time Schedule
Decommissioning of domestic landfill facility	Ineffective shaping (i.e. not free-draining)	Surface Water (Quantity): Capturing of rain water on shaped facility with possible increased infiltration.	Low Risk	Optimise surface water run-off from the shaped facility.	Monitor the stability of the decommissioned facility and fix in required.	Very Low Risk	Rhovan SHEQ Manager	Post Closure Phase	Post Closure Phase Environmental Management Budget	Post Closure Phase Environmental Management Budget	Visual inspection of rehabilitated facility for stability.	Quarterly	Environmental Monitoring Budget	Environmental Monitoring Budget	EMP Audit	Annually
	Ineffective vegetation cover	Surface Water (Quality): Contamination of the surface water resource due to erosion caused by storm water runoff and surface water discharge with high suspended solids load.	Low Risk	Optimise surface water quality to support post closure land use.	Monitor quality. Maintain storm water management system until rehabilitation has been fully established.	Very Low Risk	Rhovan SHEQ Manager	Post Closure Phase	Post Closure Phase Environmental Management Budget	Post Closure Phase Environmental Management Budget	Surface water quality monitoring	After rainfall event (> 5mm rain)	Environmental Monitoring Budget	Environmental Monitoring Budget	EMP Audit	Annually
		Aquatic Ecosystems (Habitat & Bio-diversity): Contamination of the surface water resource due to erosion caused by storm water runoff and surface water discharge with high suspended solids load.	Low Risk	Maintain zero quality impact on surface water resources.	Monitor quality. Maintain storm water management system until rehabilitation has been fully established.	Very Low Risk	Rhovan SHEQ Manager	Post Closure Phase	Post Closure Phase Environmental Management Budget	Post Closure Phase Environmental Management Budget	Surface water quality monitoring	After rainfall event (> 5mm rain)	Environmental Monitoring Budget	Environmental Monitoring Budget	EMP Audit	Annually
		Air Quality (Dust Fallout): Deterioration in ambient air quality due to windblown dust generated from denuded surfaces.	Low Risk	Maintain zero dust fallout.	Conduct bi-annual vegetation condition assessments. Implement recommendations (fertilization, irrigation, removal of aliens, etc.) as per outcome of assessment.	Very Low Risk	Rhovan SHEQ Manager	Post Closure Phase	Post Closure Phase Environmental Management Budget	Post Closure Phase Environmental Management Budget	Visual Inpection	Bi-annually	Environmental Monitoring Budget	Environmental Monitoring Budget	EMP Audit	Annually

Technical details of the Proposed Management Measures

Life-cycle Phase	Management Measure	Technical details of Management Measure
Decommissioning and Closure Phase	Schedule work for the dry season and complete if possible.	Schedule the activity (i.e. decommissioning of domestic landfill facility) for the dry season (autumn and winter) and complete during this season if possible. The shaping, compaction and covering of the facility can be completed within a 3 month period. During the dry season the possibility of a rainfall event and hence “dirty” water run-off and contamination of the surface water and the receiving environment is very low.
	Provide bunding for activity area to convey "dirty" water to existing "dirty" water system.	The site is located within the storm water management area of the Rhovan Beneficiation Plant and as such all contaminated water originating from the site should be captured by the existing storm water management system. However, if the system appears to be inadequate to handle the potential affected run-off from the site, earth walls (berms) of 500 mm height must be provided around the activity area to retain any “dirty” water that may result from decommissioning activities (i.e. increase in silts/sediments). Surface water run-off that may occur must be conveyed to the lowest accumulating area and from there into the already existing “dirty” water system. This water will then be captured in the storm water PCD for containment or re-use.
	Service machinery and vehicles on a regular basis.	Compile and implement standard operating procedures (SOP) for all machinery and vehicles that specifically states when they should be serviced, thereby optimizing their emissions.
	Prevent unnecessary idling of motors.	Compile and implement standard operating procedures (SOP) for all machinery and vehicles that specifically states that no unnecessary idling of machinery and vehicles is permitted, thereby minimizing their emissions..
	Implement appropriate dust suppression measures.	Perform dust suppression three times a day. Increase the frequency during dry and windy conditions. Be sure not to over-irrigate the areas as this could give rise to surface water contamination.
	Maintain vehicles with specific reference to noise generation.	Compile and implement standard operating procedures (SOP) for all machinery and vehicles that specifically states when they should be serviced in order to minimize their noise profile..
	Restrict decommissioning activities to daylight hours as far as possible.	Restrict decommissioning activities to daytime hours. Do not allow night-time operations (22h00 - 06h00) as noise propagation is optimized during night time.
Fit Hiss-Type instead of Tonal-Type reverse alarms.	Install/ replace buzzer (hissing) type alarms instead of conventional tonal (beeping) type on all machinery and vehicles if deemed possible in order to soften the tonal impact.	
Post Closure Phase	Monitor facility stability and fix if necessary.	Unstable conditions on the decommissioned facility could manifest as differential settlement resulting in depressions that could not be free draining. Regular visual inspections must be undertaken to verify the stability and corrective action should be taken if such settlement is observed. Settled areas must be re-shaped and the capping cover repaired and re-vegetated.
	Maintain dirty water management systems (i.e. berms) until rehabilitation has been fully established.	Ensure that the earth walls (berms) constructed around the activity area to retain any “dirty” water that may result from decommissioning activities (i.e. increase in silts/sediments) is maintained until such time as the vegetation has fully established.

Life-cycle Phase	Management Measure	Technical details of Management Measure
	Conduct bi-annual vegetation condition assessments. Implement recommendations (fertilization, irrigation, removal of aliens, etc.) as per outcome of assessment.	Visual assessments should be carried out bi-annually to assess the condition of the vegetation cover. If the condition of the vegetation is not optimal, management measures such as fertilization, irrigation and removal of alien species should be implemented and the success thereof monitored.

Details of the Proposed Environmental Monitoring

Life-cycle Phase	Monitoring required	Technical details of Environmental Monitoring
Decommissioning and Closure Phase	Weekly surface water quality monitoring.	The protocol used for water sampling needs to ensure reproducible and reliable sampling by using techniques that are consistent and suitable to the sites, but in accordance with internationally acceptable sampling practice. Take a grab sample of the surface water present at the activity site and the downstream environment on a weekly basis during the decommissioning activities.
	Visual Inspection of machinery and vehicle service records.	Regular audits should be performed to verify that all the machinery and vehicles on site undergo their services on a scheduled basis.
	Visual inspection of unnecessary idling.	Regular and un-scheduled audits should be performed to verify that no undue idling of machinery and vehicles occur on site.
	Visual inspection of appropriate Dust suppression.	Regular and un-scheduled audits should be performed to verify that dust emanating from the footprint of the activity is sufficiently suppressed (i.e. wetted).
	Visual inspection of Vehicle maintenance.	Regular audits should be performed to verify that all the machinery and vehicles on site undergo their services on a scheduled basis.
	Visual inspection of Daylight working hours.	Regular audits should be performed to verify that no decommissioning activities are carried out after daylight working hours.
	Visual inspection of Hiss-Type alarms.	Regular audits should be performed to verify that the Tonal-Type alarms of all the machinery and vehicles have been replaced by Hiss-Type alarms of possible.
Post Closure Phase	Surface water quality monitoring.	The protocol used for water sampling needs to ensure reproducible and reliable sampling by using techniques that are consistent and suitable to the sites, but in accordance with internationally acceptable sampling practice. Take a grab sample of the surface water present at the activity site and the downstream environment after a rainfall event (> 5mm rain).
	Conduct bi-annual vegetation condition assessments.	Visual assessments should be carried out bi-annually to assess the condition of the vegetation cover. If the condition of the vegetation is not optimal, management measures such as fertilization, irrigation and removal of alien species should be implemented and the success thereof monitored.

APPENDIX H



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



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E-mail: oskosana@nwpg.gov.za
Enq: Ouma Skosana

DETAILS OF EAP AND DECLARATION OF INTEREST

File Reference Number: NEAS Reference Number: Date Received:	(For official use only)

Application for authorisation in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2010

PROJECT TITLE

THE DECOMMISSIONING OF THE DOMESTIC WASTE DISPOSAL FACILITY/LANDFILL (some **0.62 ha**) AT GLENCORE OPERATIONS SOUTH AFRICA (PTY) LTD. - RHOVAN MINE, LOCATED WITHIN THE BOUNDARIES OF THE RUSTENBURG LOCAL MUNICIPALITY IN THE NORTH – WEST PROVINCE.

Environmental Assessment Practitioner (EAP): ¹	Mr Jasper Muller (Pr.Sci.Nat.)		
Contact person:	Mr Jasper Muller		
Postal address:	P O Box 883 DELMAS		
Postal code:	2210	Cell:	0824950169
Telephone:	(013) 665 1788	Fax:	(013) 665 2364
E-mail:	jasper@jmaconsult.co.za		
Professional affiliation(s) (if any)	South African Council for Natural Scientific Professions (SACNASP)		

Project Consultant:	JMA Consulting (Pty) Ltd		
Contact person:	Mr Jasper Muller		
Postal address:	P O Box 883 DELMAS		
Postal code:	2210	Cell:	0824950169
Telephone:	(013) 665 1788	Fax:	(013) 665 2364
E-mail:	jasper@jmaconsult.co.za		

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4.2 The Environmental Assessment Practitioner

Jasper Müller

I, _____, declare that –

General declaration:

- I act as the independent environmental practitioner in this application
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting environmental impact assessments, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, regulations and all other applicable legislation;
- I will take into account, to the extent possible, the matters listed in regulation 8 of the regulations when preparing the application and any report relating to the application;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- I will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
- I will ensure that the comments of all interested and affected parties are considered and recorded in reports that are submitted to the competent authority in respect of the application, provided that comments that are made by interested and affected parties in respect of a final report that will be submitted to the competent authority may be attached to the report without further amendment to the report;
- **I will keep a register of all interested and affected parties that participated in a public participation process; and**
- **I will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not**
- **all the particulars furnished by me in this form are true and correct;**
- ***will perform all other obligations as expected from an environmental assessment practitioner in terms of the Regulations; and***
- **I realise that a false declaration is an offence in terms of regulation 71 and is punishable in terms of section 24F of the Act.**

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Disclosure of Vested Interest (delete whichever is not applicable)

- I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity proceeding other than remuneration for work performed in terms of the Environmental Impact Assessment Regulations, 2010;

- I have a vested interest in the proposed activity proceeding, such vested interest being:

Signature of the environmental assessment practitioner:

[Signature]
JMA Consulting (Pty) Ltd

Name of company:

17/10/2014

Date:

Signature of the Commissioner of Oaths:

[Signature]
17/10/2014

Date:

Designation:

Official stamp (below)

EUGENE VAN NIEKERK
KOMMISSARIS VAN EDF
(MRO - 9/1/8/2 DELMAS (A)S)
PRAKTISERENDE REKENMEESTER
SAMUELWEG 5
DELMAS 2210

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Jasper L Müller (Pr.Sci.Nat.)



Date of Birth: 16 November 1957

Nationality: S A Citizen

Position in firm: Managing Director

Qualification:

B. Sc.: Geology and Geohydrology, UOFS, 1979

B. Sc. (Hons): Geohydrology, UOFS, 1980

M. Sc. (Cum Laude): Geohydrology, UOFS, 1984

Memberships:

Geological Society of SA : Ground Water Division
South African Council for Natural Scientific Professions
National Groundwater Association.

Period employed:

1981 Hydrologist with Dept. of Water Affairs.

1983 Researcher with Institute for Ground Water Studies, UOFS.

1987 Divisional Head, Geohydrology, Environmental Science Services

1988 Founded Jasper Müller Associates.

Jasper Müller received his training as geohydrologist at the Institute for Ground Water Studies (University of the Freestate). He worked at IGS as Researcher / Lecturer, specialising in numerical aquifer analyses.

He left IGS in 1986 and joined the consulting firm Terradata, where he was involved in projects related to ground water pollution and water supply.

In 1987 he was appointed at the consulting firm Environmental Science Services. His responsibility was to structure and build a division for water sciences (ground water and surface water). During his tenure at ESS he also floated a division on ground water monitoring.

During 1988, Jasper founded JMA, which has since evolved into a consulting firm employing 17 people. JMA is a multi-disciplinary team specialising in geohydrology.

Since 1988 Jasper Müller was involved on a consulting level on more than 200 JMA projects related to water supply, aquifer management, ground water quality investigations, ground water monitoring, ground water impact and risk modelling, ground water pollution remediation and litigative consultative work.

E-mail: jasper@jmaconsult.co.za

APPENDIX I1

Geochemical and Geohydrological Specialist



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



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Enq: Ouma Skosana

DETAILS OF SPECIALIST AND DECLARATION OF INTEREST

(For official use only)

File Reference Number:

NEAS Reference Number:

Date Received:

Application for authorisation in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2010

PROJECT TITLE

THE DECOMMISSIONING OF THE DOMESTIC WASTE DISPOSAL FACILITY (some **0.62 ha**) AT GLENCORE OPERATIONS SOUTH AFRICA (PTY) LTD. - RHOVAN MINE, LOCATED WITHIN THE BOUNDARIES OF THE RUSTENBURG LOCAL MUNICIPALITY IN THE NORTH – WEST PROVINCE.

Specialist:

Contact person:

Postal address:

Postal code:

Telephone:

E-mail:

Professional affiliation(s) (if any)

Mr Jaco van der Berg		
Mr Jaco van der Berg		
P O Box 883 DELMAS		
2210	Cell:	0824994083
(013) 665 1788	Fax:	(013) 665 2364
jasper@jmaconsult.co.za		
South African Council for Natural Scientific Professions (SACNASP)		

Project Consultant:

Contact person:

Postal address:

Postal code:

Telephone:

E-mail:

JMA Consulting (Pty) Ltd		
Mr Jasper Muller		
P O Box 883 DELMAS		
2210	Cell:	0824950169
(013) 665 1788	Fax:	(013) 665 2364
jasper@jmaconsult.co.za		

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4.2 The specialist appointed in terms of the Regulations_

I, Mr Jaco van der Berg, declare that --

General declaration:

- I act as the independent specialist in this application
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- **all the particulars furnished by me in this form are true and correct; and**
- **I realise that a false declaration is an offence in terms of Regulation 71 and is punishable in terms of Section 24F of the Act.**

Signature of the specialist:

JMA Consulting (Pty) Ltd

Name of company (if applicable):

Date:

Signature of the Commissioner of Oaths:

Date:

Designation:

Official stamp (below)

EUGENE VAN NIEKERK
KOMMISSARIS VAN EDF
(MRO - 9/1/8/2 DELMAS (AOS))
PRAKTISERENDE REKENMEESTER
SAMUELWFG 5
DELMAS 2210

APPENDIX I2

Soils specialist



read

Department:
**Rural, Environment and Agricultural
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North West Provincial Government
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DETAILS OF SPECIALIST AND DECLARATION OF INTEREST

File Reference Number:
NEAS Reference Number:
Date Received:

(For official use only)

Application for authorisation in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2010

PROJECT TITLE

THE DECOMMISSIONING OF THE DOMESTIC WASTE DISPOSAL FACILITY (some **0.62 ha**) AT GLENCORE OPERATIONS SOUTH AFRICA (PTY) LTD. - RHOVAN MINE, LOCATED WITHIN THE BOUNDARIES OF THE RUSTENBURG LOCAL MUNICIPALITY IN THE NORTH – WEST PROVINCE.

Specialist:
Contact person:
Postal address:

Postal code:
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Professional affiliation(s) (if any)

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Handwritten signature and initials

4.2 The specialist appointed in terms of the Regulations_

I, Mr B.B McLeroth, declare that --

General declaration:

- I act as the independent specialist in this application
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- **all the particulars furnished by me in this form are true and correct; and**
- **I realise that a false declaration is an offence in terms of Regulation 71 and is punishable in terms of Section 24F of the Act.**

B.B. McLeroth

Signature of the specialist:

Red Earth CC

Name of company (if applicable):

8/5/2015

Date:

[Signature]

Signature of the Commissioner of Oaths:

8/5/2015

Date:

[Signature]

Designation:



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APPENDIX J1

IMPACT ASSESSMENT METHODOLOGY

The impact assessment methodology used for the Rhovan project is based on an Impact Assessment Rating Matrix developed by JMA Consulting.

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.*

The protocol comprises a series of steps in order to systematically go through a process of:

1. Identifying and Quantifying the **Significance** of an impact: **Step 1.**
2. Determining the **Probability** of an impact happening: **Step 2.**
3. Determine the **Risk Level** attached to the impact: **Step 3.**

The identification process is conducted by the EAP and then the Step 1 Significance Assessment is completed based on the EAP's interpretation. The interpretation is converted into the numerical rating contained in Table 1(a), and an Impact Significance Total is calculated. The Significance Total is converted into a Significance S Number, for population of the overall Risk Matrix. The components considered to arrive at the Significance Rating (S Number) are as follows:

- Spatial extent of the impact
- Intensity or Severity of the impact
- Duration of the impact
- Unacceptability of the impact
- Mitigatory difficulty of the impact

The sum of the numerical ratings for the above components represents the Significance Total.

Table 1(a): Impact Significance Assessment Criteria

CRITERIA FOR DETERMINING SIGNIFICANCE		
Criteria	Definition	Points
Spatial Extent		
High	Widespread. Far beyond site boundary. Regional/national/international scale.	3
Medium	Beyond site boundary. Local area.	2
Low	Within site boundary.	1
Intensity or Severity		
High	Disturbance of pristine areas that have important conservation value. Destruction of rare or endangered species.	3
Medium	Disturbance of areas that have potential conservation value or are of use as a resource. Complete change in species occurrence or variety.	2
Low	Disturbance of degraded areas that have little conservation value. Minor change in species occurrence or variety.	1
Duration		
High (Long term)	Permanent. Long Term (more than 20 years). Beyond decommissioning.	3
Medium (Medium term)	Reversible over time. Lifespan of the project. Medium Term (3-20 years). Operational Phase	2
Low (Short term)	Quickly reversible. Less than the project lifespan. Short Term (0 – 3 years). Construction Phase	1
Un-Acceptability		
High (Unacceptable)	Abandon project in part or in its entirety. Redesign project to remove impact or avoid impact.	3
Medium (Manageable)	With regulatory controls. With project proponent's commitments.	2
Low (Acceptable)	No risk to public health.	1
Mitigatory Difficulty		
High	Little or no mechanism to mitigate negative impacts.	3
Medium	Potential to mitigate negative impacts. However, the implementation of mitigation measures may still not prevent some negative effects.	2
Low	High potential to mitigate negative impacts to the level of insignificant effects.	1

Once a Significance Total has been calculated for a specific impact, an Impact Significance Number is determined (S-number) as completion of **Step 1**, based on the Table below:

Table 1(b): Assignment of Impact Significance S-Number

Significance Total	Significance S-Number
15	S5
12 - 14	S4
9 - 11	S3
6 - 8	S2
5	S1

Table 1(c): Explanation for Impact Significance Rating

EXPLANATION FOR IMPACT SIGNIFICANCE RATING		
Impact Significance	Explanation	Points
Very High	Of the highest order possible within the bounds of impacts that could occur. In the case of adverse impacts, there is no possible mitigation that could counteract the impact, or mitigation is difficult, expensive, time-consuming or a combination of these. Social, cultural and economic activities of communities are disrupted to such an extent that these come to a halt. In the case of beneficial impacts, the impact is of a substantial order within the bounds of impacts that could occur.	>14
High	Impact is high and substantial in relation to other impacts that might take effect within the bounds of those that could occur. In the case of adverse impacts, mitigation is possible but expensive. Social, cultural and economic activities of communities are changed, but can be continued (albeit in a different form). Modification of the project design or alternative action will be required. In the case of beneficial impacts, the project out performs other alternatives in terms of time, cost and effort.	12-14
Medium	Impact is real, but not substantial in relation to other impacts that might take effect within the bounds of those that could occur. In the case of adverse impacts, mitigation is both feasible and fairly easily possible. Social, cultural and economic activities of communities are changed, but can be continued (albeit in a different form). Modification of the project design or alternative action may be required. In the case of beneficial impacts, other means of achieving this benefit are about equal in time, cost and effort.	9-11
Low	Impact is of a low order and therefore likely to have little real effect. In the case of adverse impacts, mitigation is either easily achieved or little will be required, or both. Social, cultural and economic activities of communities can continue unchanged. In the case of beneficial impacts, alternative means of achieving this benefit are likely to be easier, cheaper, more effective and less time-consuming.	6-8
Insignificant	Although an impact may exist it is rated as insignificant and is not deemed to warrant any specific management measures or even monitoring.	<6

During **Step 2** the Probability of an impact occurring/re-occurring is assessed.

Table 1(d): Probability of an Impact Occurring (P-Value)

Likelihood Descriptors		Probability Intervals	Likelihood Definitions
P1	Unlikely	0 - 25%	Less than 25% probability that a specific impact will occur.
P2	Possible	25 - 50%	25% - 50% probability that a specific impact will occur.
P3	Probable	50 - 75%	50% - 75% probability that a specific impact will occur.
P4	Highly Probable	75 - 100%	More than 75% probability that a specific impact will occur.

Finally, the overall impact is quantified in a Risk Matrix, by combining the S-Number (determined in **Step 1**) with the P-Value (determined in **Step 2**) in the Risk Matrix provided below (**Step 3**). The matrices shown above make use of generic criteria in order to systematically identify, predict, evaluate and determine the significance of impacts resulting from project construction, operation and decommissioning.

Table 1(e): Risk Matrix

RISK MATRIX					
	Significance S1	Significance S2	Significance S3	Significance S4	Significance S5
Probability P4	Low Risk	Low Risk	Moderate Risk	High Risk	High Risk
Probability P3	Very Low Risk	Low Risk	Moderate Risk	Moderate Risk	High Risk
Probability P2	Very Low Risk	Very Low Risk	Low Risk	Low Risk	Moderate Risk
Probability P1	Very Low Risk	Very Low Risk	Very Low Risk	Very Low Risk	Low Risk

APPENDIX J2

Closure Plan

As defined in GNR 982 of 4 December 2014: Environmental Impact Assessment Regulations (Appendix 5) a closure plan must include:

- 1(a)
 - (i) details of the EAP who prepared the closure plan
 - (ii) the expertise of the EAP
- (b) closure objectives
- (c) identifications of the persons who will be responsible for implementation of the measures contemplated in the closure plan
- (d) proposed mechanisms for monitoring compliance with and performance assessment against the closure plan and reporting thereon
- (e) measures to rehabilitate the environment affected by the undertaking of any listed activity or specified activity and associated closure to its natural or predetermined state or to a land use which conforms to the generally accepted principle of sustainable development, including a handover report, where applicable
- (f) information on any proposed management or mitigation measures what will be taken to address the environmental impacts resulting from the undertaking of the activity and closure
- (g) a description of the manner in which it intends to
 - (i) modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation during closure
 - (ii) remedy the cause of pollution or degradation and migration of pollutants during closure
 - (iii) comply with any prescribed environmental management standards or practices
 - (iv) comply with any applicable provisions of the Act regarding closure
- (h) time periods within which the measures contemplated in the closure plan must be implemented
- (i) the process for managing any environmental damage, pollution, pumping and treatment of extraneous water or ecological degradation as a result of closure
- (j) details of all public participation processes conducted in terms of regulation 47 of these Regulations including
 - (i) copies of any representations and comments received from registered interested and affected parties
 - (ii) a summary of comments received from, and a summary of issues raised by registered interested and affected parties, the date of receipt of these comments and the response of the EAP to those comments
 - (iii) the minutes of any meetings held by the EAP with interested and affected parties and other role players which record the views of the participants
 - (iv) where applicable, and indication of the amendments made to the plan as a result of public participation processes conducted in terms of regulation 47 of these Regulations

- (2) Where proposed development and the geographical area within which it is proposed has been subjected to a pre-assessment using a spatial development tool, and the output of the pre-assessment in the form of a site specific development protocol has been adopted in the prescribed manner, the content of a closure plan may be determined by the adopted site specific development protocol applicable to the specific proposed development in the specific geographical area it is proposed in.

In accordance with these regulations, given below is the closure plan for the Rhovan Mine Domestic Landfill facility.

The details and expertise of the EAP that compiled the closure plan is attached as **Appendix H** to the Basic Assessment form/report.

The objectives of the closure of the domestic landfill facility are:

- To ensure public acceptability of the implementation of the proposed End-use Plan.
- To rehabilitate the landfill so as to ensure that the site is environmentally and publicly acceptable and suited to the implementation of the proposed end-use.

The HSEC department (contact person Adriaan Brugman; Adriaan.Brugman@glencore.co.za; 012-318 0709) of the Rhovan Mine will be responsible for the implementation of the measures contemplated in the closure plan.

Site supervision is recommended during the implementation of the closure plan. The closure plan must be implemented according to the designs, which specifies that the site will be closed by moving soil from the surrounding soil barriers into the domestic landfill using excavators. The site will be shaped to ensure that the final landform is free-draining. In addition, the site will be capped, landscaped and re-vegetated. Permanent storm water diversion measures must be in place as well as run-off control and anti-erosion measures. After closure, the site must be monitored on an ongoing basis in terms of surface and ground water quality. Ongoing inspections must also be carried out at regular intervals to monitor cover integrity, subsidence, drainage, erosion and any other aspects of the closed site which could cause any environmental nuisances.

No measures will be implemented to rehabilitate the environment affected by the undertaking of the activity, as the impacts associated with the activity will be managed or mitigated to ensure no long term or residual effects. In addition, the activity will be confined to the existing footprint.

Information on the proposed management or mitigation measures that will be taken to address the potential environmental impacts resulting from the undertaking of the activity is comprehensively discussed in **Appendices F and G**.

The activity is designed in such a way (following best practise guidelines and provisions of the act) as to ensure that there will be a very low risk associated with the activity in terms surface water pollution and no pollution in terms of ground water quality.

Refer to **Appendices F and G** which comprehensively discusses the potential impacts associated with the activity as well as the management objectives and measures specified to ensure that the impacts are mitigated during the activity as well as post closure.

The closure plan will be implemented and finalised a year from authorisation.

Details of the public participation process followed are provided in **Section C** of the Basic Assessment form/report.

The activity falls within the property boundary within which Rhovan Mine lawfully operates. The activity will have no impact on the surrounding area and land use.

APPENDIX J3

End-use Plan

The end-use of a landfill refers to its after-use, i.e. how it will be developed after closure, to fit into the environment. The End-use plan will only be implemented once the Domestic Landfill is closed. Thereafter, the site will be monitored at an ongoing basis.

Ongoing inspections and maintenance are required after site closure and must be carried out at regular intervals to monitor cover integrity, subsidence, fires, vegetation, drainage, erosion, and any other aspects of the closed site which could cause nuisances and to make sure that the End-use Design is properly implemented. Post-closure water quality monitoring must also take place. The inspections will be carried out at six or twelve monthly intervals.

The End-use plan for the domestic landfill at Rhovan Mine is for the vegetation to re-establish itself and then to return to its natural state. The footprint will be monitored to make sure that alien species are removed and that other factors such as subsidence, fires, vegetation, drainage and erosion are prevented. After the natural, indigenous vegetation returned to the footprint and established itself to be self-sufficient the area will be opened. This will be monitored and operated with the rest of the mining area.

The land surrounding the plant is still being used as grazing land by local farmers. The area of the mine, slimes dam and plant will not be available for grazing during the life of the mine. Subsequent to final rehabilitation some of the areas may again become available for grazing purposes (low production pastures). This will only happen in the long term after the mine closure.

APPENDIX J4

The Environmental Awareness Plan for Rhovan as provided in the – June 2006 EMP – Prj5180G

PRE-CONSTRUCTION PHASE

Objective	Management Measures
Baseline Studies	Assess the following: <ul style="list-style-type: none"> • The current situation in terms of vegetation including: <ul style="list-style-type: none"> ○ Floral species present ○ Identification of vegetation health ○ Assessment of species diversity ○ Threatened species or communities present • The environmental risks associated with the project. • The potential impact the project might have on plant life. • The relevant standards pertaining to vegetation that must be identified and adhered to.
Risk Assessment	Identify environmental risks, including risks to biodiversity. Identify impacts on floral species and vegetation health. Identify land use practices.
Environmental Management Programme	<u>Developing of Management Programme</u> Develop programme in consultation with affected parties Include in the programme the following: <ul style="list-style-type: none"> • The identification of specifications. • Designation of responsibilities. • Resource allocation. • The timeframe for implementing the programme’s controls and actions. <u>Reviewing of Management Programme</u> The following must be included in the Environmental Management Programme review: <ul style="list-style-type: none"> • The status of biodiversity in terms of plant life. <ul style="list-style-type: none"> ○ Species and habitat loss or gains ○ Factors that impact on biodiversity ○ Security of protected areas ○ Management of biological resources ○ Ongoing rehabilitation and restoration of ecosystems ○ Resilience of the ecosystem • Management methods. • Achievement of desired results. Land use management practices.
Minimisation of impacts on plant life	<u>Seed Bank</u> Compile seed bank of natural species present prior to clearing and store seed under suitable storage conditions. This seed can be used during the rehabilitation phase. <u>Removal of Sensitive or Threatened Species</u> Identify all threatened species occurring in the area, create locality maps of these species. Record abundances of species. Implement protection measures. Depending on the locality, the area could be fenced, or marked as a protected area. If located on Proposed Calcine Dump Expansion Site or Slimes Dam expansion, relocate prior to clearing of site to nursery if possible, or to other suitable location. Educate employees on the importance of the environment and protection of vegetation.

CONSTRUCTION PHASE

Objective	Management Measures
Environmental Management Programme	<p><u>Reviewing of Management Programme</u> The following must be included in the Environmental Management Programme review:</p> <ul style="list-style-type: none"> • The status of biodiversity in terms of plant life. <ul style="list-style-type: none"> ○ Species and habitat loss or gains ○ Factors that impact on biodiversity ○ Security of protected areas ○ Management of biological resources ○ Ongoing rehabilitation and restoration of ecosystems ○ Resilience of the ecosystem • Management methods. • Achievement of desired results. • Land use management practices.
Minimisation of impacts on plant life	<p><u>Clearing of site</u> Optimise design to clear smallest area possible.</p> <p><u>Fragmentation of habitat</u> Mitigate this impact by limiting the access roads cutting through the natural vegetation.</p> <p><u>General Veld Management</u> Establish, Implement and maintain an effective veld management system. This system should include measures to prevent overgrazing of veld.</p> <p>Establish, Implement and maintain a controlled veld-burning program. This program should include the making of effective firebreaks. To decrease the loss of habitat caused by the burning of the veld, a systematic veld-burning program is suggested.</p> <p>Educate employees on the importance of the environment and protection of vegetation.</p>
Protection of plant species	<p><u>Risk to Threatened Species</u> Any incident of unauthorized removal of plant material as well as accidental damage to these priority plants, must be documented and action taken.</p> <p><u>Prevention of trampling</u> Limiting access of vehicular traffic by creating buffer zones along access roads (i.e. placing access road inside fenced area).</p>
Minimize invasion of alien species	<p>The replacement of indigenous species by invader species can be mitigated by physical, chemical or biological measures. When using either chemical or biological measures, caution must be carried out when choosing the control agent. Chemical and biological agents used must be species specific, not threatening the survival or health of the indigenous species present in the area.</p> <p>A registered weed control officer can be appointed to chemically treat any invader species. Care must be taken to avoid the spread of seeds of alien vegetation.</p>
Minimizing air pollution	<p><u>Vehicle Emissions</u> Establish, implement and maintain an effective vehicle maintenance system.</p>

Objective	Management Measures
	<p><u>Dust from access roads</u> Pave access roads where possible. When road cannot be paved, water road regularly to limit dust generation, make use of other dust control methods such as dusticide.</p>
Minimizing noise pollution	<p><u>Vehicle noise</u> Establish, implement and maintain an effective vehicle maintenance system.</p>
Minimizing ground water and surface water pollution	<p>Establish, implement and maintain an effective water and waste management system.</p>
Instruction and awareness training	<p>Educate employees on the importance of the environment and protection of vegetation. Include in the training programme:</p> <ul style="list-style-type: none"> • Biodiversity awareness training. • Site specific biodiversity issues and management programmes. <p>Review effectiveness of training.</p>
Minimize disruption of soil profile	<p>Stockpile different layers of soil to decrease mixing thereof. This soil can then be used during rehabilitation of the development.</p>
Minimize loss of topsoil	<p>Stockpile different layers of soil separately to decrease mixing thereof. This soil can then be used during rehabilitation of the development.</p> <p>Cover areas where topsoil is exposed, with vegetation.</p>

OPERATIONAL PHASE

Objective	Management Measures
Environmental Management Programme	<p><u>Reviewing of Management Programme</u> The following must be included in the Environmental Management Programme review:</p> <ul style="list-style-type: none"> • The status of biodiversity in terms of plant life. <ul style="list-style-type: none"> ○ Species and habitat loss or gains ○ Factors that impact on biodiversity ○ Security of protected areas ○ Management of biological resources ○ Ongoing rehabilitation and restoration of ecosystems ○ Resilience of the ecosystem • Management methods. • Achievement of desired results. • Land use management practices.
Minimisation of impacts on plant life	<p><u>General Veld Management</u> Implement and maintain an effective veld management system. This system should include measures to prevent overgrazing of veld.</p> <p>Implement and maintain a controlled veld-burning program. This program should include the making of effective firebreaks. To decrease the loss of habitat caused by the burning of the veld, a systematic veld-burning program is suggested.</p> <p>Educate employees on the importance of the environment and protection of vegetation.</p>
Protection of plant species.	<p><u>Risk to Threatened Species</u> Any incident of unauthorized removal of plant material as well as accidental damage to these priority plants, must be documented and action taken.</p>
Minimize invasion of alien species	<p>The replacement of indigenous species by invader species can be mitigated by physical, chemical or biological measures. When using either chemical or biological measures, caution must be carried out when choosing the control agent. Chemical and biological agents used must be species specific, not threatening the survival or health of the indigenous species present in the area.</p> <p>A registered weed control officer can be appointed to chemically treat any invader species. Care must be taken to avoid the spread of seeds of alien vegetation.</p>
Minimizing air pollution	<p><u>Process Emissions</u> Minimise stack Emissions. Monitor emissions.</p> <p><u>Vehicle Emissions</u> Establish, implement and maintain an effective vehicle maintenance system.</p> <p><u>Dust from access roads</u> Pave access roads where possible. When road cannot be paved, water road regularly to limit dust generation.</p> <p><u>Dust from dumps</u> Compact dumps where feasible.</p>
Minimize noise pollution	<p><u>Vehicle noise:</u> Implement and maintain an effective vehicle maintenance system.</p>
Minimize soil pollution	<p>Implement and maintain an effective waste management system – IWWMP.</p>
Minimize surface water and ground water pollution	<p>Implement and maintain an effective water management system – IWWMP.</p>

Objective	Management Measures
Instruction and awareness training	<p>Educate employees on the importance of the environment and protection of vegetation.</p> <p>Include in the training programme:</p> <ul style="list-style-type: none"> • Biodiversity awareness training. • Site specific biodiversity issues and management programmes. <p>Review effectiveness of training.</p>
Monitoring programme	<p>Establish, implement and maintain an effective floral monitoring system.</p> <p>This system should include:</p> <ul style="list-style-type: none"> • Species and habitat loss or gains. • Factors that impact on biodiversity. • Security of protected areas. • Assessment of the sustainable use of natural or biological resources. • On-going rehabilitation and restoration of ecosystems. • Resilience of the ecosystem.
Identification of Conceptual Mine/Plant Closure Criteria	<p>When planning for post closure land use and rehabilitation the following must be considered:</p> <ul style="list-style-type: none"> • The diversity / abundance of flora required. • The community structure that needs to be re-established. <p>Rehabilitation of all disturbed and contaminated land must be included in the criteria. This rehabilitation must be done in such manner to meet the post closure land use.</p>

CLOSURE AND REHABILITATION PHASE

Objective	Management Measures
Environmental Management Programme	<p><u>Reviewing of Management Programme</u> The following must be included in the Environmental Management Programme review:</p> <ul style="list-style-type: none"> • The status of biodiversity in terms of plant life. <ul style="list-style-type: none"> ○ Species and habitat loss or gains ○ Factors that impact on biodiversity ○ Security of protected areas ○ Management of biological resources ○ Ongoing rehabilitation and restoration of ecosystems ○ Resilience of the ecosystem • Management methods. • Achievement of desired results. • Land use management practices.
<p>Minimisation of impacts on plant life</p> <p>Minimisation of impacts on plant life</p>	<p><u>General Veld Management</u> Implement and maintain an effective veld management system. This system should include measures to prevent overgrazing of veld.</p> <p><u>General Veld Management</u> Implement and maintain a controlled veld-burning program. This program should include the making of effective firebreaks. To decrease the loss of habitat caused by the burning of the veld, a systematic veld-burning program is suggested. Educate employees on the importance of the environment and protection of vegetation.</p> <p><u>Rehabilitation - Seeding of covered dump and dam</u> The seeds of the species included in the seed bank, compiled during the preconstruction phase, should be used to seed the area. Water and nutrients should be provided to increase the growth rate of the vegetation, thus increasing the rehabilitation rate and decreasing the time of exposure of open soil sensitive to erosion. <i>Cynodon dactylon</i> and <i>Hyparrhenia hirta</i> are two important species which should be included in those used for seeding. They are both tolerant to disturbance and plays an important role in erosion management</p>
Minimize invasion of alien species	The replacement of indigenous species by invader species can be mitigated by physical, chemical or biological measures. When using either chemical or biological measures, caution must be carried out when choosing the control agent. Chemical and biological agents used must be species specific, not threatening the survival or health of the indigenous species present in the area.
Minimizing air pollution	<p><u>Vehicle Emissions</u> Implement and maintain an effective vehicle maintenance system.</p> <p><u>Dust from access roads</u> Pave access roads where possible. When road cannot be paved, water road regularly to limit dust generation.</p> <p><u>Dust from dumps</u> Compact dumps where feasible.</p>
Minimize noise pollution	<p><u>Vehicle noise:</u> Implement and maintain an effective vehicle maintenance system.</p>
Minimize soil pollution	Implement and maintain an effective waste management system – IWWMP.
Minimize surface water and ground water pollution	Implement and maintain an effective water and waste management system – IWWMP.

Objective	Management Measures
Instruction and awareness training	Educate employees on the importance of the environment and protection of vegetation. Include in the training programme: <ul style="list-style-type: none"> • Biodiversity awareness training. • Site specific biodiversity issues and management programmes. Review effectiveness of training
Monitoring programme	Implement and maintain an effective floral monitoring system. This system should include: <ul style="list-style-type: none"> • Species and habitat loss or gains. • Factors that impact on biodiversity. • Security of protected areas. • Assessment of the sustainable use of natural or biological resources. • On-going rehabilitation and restoration of ecosystems. • Resilience of the ecosystem. Monitor rehabilitation to establish whether or not rehabilitation or restoration criteria have been met.
Rehabilitation programme	Implement rehabilitation programme as described in closure plan. Alter rehabilitation techniques if necessary, based on findings of the biodiversity monitoring programme. Manage rehabilitated land to achieve post closure land use.

POST CLOSURE PHASE

Objective	Management Measures
Environmental Management Programme	<p><u>Reviewing of Management Programme</u></p> <p>The following must be included in the Environmental Management Programme review:</p> <ul style="list-style-type: none"> • The status of biodiversity in terms of plant life. <ul style="list-style-type: none"> ○ Species and habitat loss or gains ○ Factors that impact on biodiversity ○ Security of protected areas ○ Management of biological resources ○ Ongoing rehabilitation and restoration of ecosystems ○ Resilience of the ecosystem • Management methods. • Achievement of desired results. • Land use management practices.
Monitoring programme	Monitor rehabilitation to establish whether or not rehabilitation or restoration criteria have been met.
Rehabilitation programme	Manage rehabilitated land to achieve post closure land use.
Sharing of scientific information on efficient management of plant life	<p>Share scientific information through activities such as:</p> <ul style="list-style-type: none"> • Participation in research programmes. • Reporting of performance in publications. • Industry meetings where information is provided.