DRAFT BASIC ASSESSMENT REPORT
And
ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

Prepared for:

G&W BASE AND INDUSTRIAL MINERALS(Pty) Ltd

Prepared by:

EOH Coastal & Environmental Services

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FILE REFERENCE NUMBER SAMRAD:  
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DRAFT
1. IMPORTANT NOTICE

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

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

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

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

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

The object of the basic assessment process is to, through a consultative process –

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

b) identify the alternatives considered, including the activity, location and technology alternatives;

c) describe the need and desirability of the proposed alternatives;

d) through the undertaking of an impact and risk assessment process inclusive of cumulative impacts which focused on determining the geographical, physical, biological, social, economic, heritage, and cultural sensitivity of the sites and locations within sites and the risk of impact of the proposed activity and technology alternatives on theses aspects to determine:

   a) the nature, significance, consequence, extent, duration and probability of the impacts occurring to; and

   b) the degree to which these impacts –
      (aa) can be reversed;
      (bb) may cause irreplaceable loss of resources; and
      (cc) can be managed, avoided or mitigated;


e) through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to –

   a) identify and motivate a preferred site, activity and technology alternative;
   b) identify suitable measures to manage, avoid or mitigate identified impacts; and
   c) identify residual risks that need to be managed and monitored.
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   5.4 Explain why it can be confirmed that the rehabilitation plan is compatible with the closure objectives.
   5.5 Calculate and state the quantum of the financial provision required to manage and rehabilitate the environment in accordance with the applicable guidelines.
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PART A
SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT

Project Background

As part of the application for the closure certificate for the Plettenberg Bay Bentonite Mine an environmental risk assessment is conducted in order to identify all possible risks and issues that will need to be addressed to secure environmental authorization from the Department of Mineral Resources (DMR).

Bentonite is a mineral which is derived from volcanic ash deposits. It is considered to be impure clay which is found in areas which have large clay deposits (SDF, 2013). Prospecting for Bentonite in the Plettenberg bay (Jakkalskraal area) was first carried out in the late 1960’s, where a number of farms including Portion 77 of Roodefontein No. 440 (study area) where found to have the mineral.

Mining in the study area commenced in 1997, after a mining permit was submitted and granted in 1993. This mining permit was valid until the 26th of September 1995. Prospect drilling in the area began between June and July 1995, and based on the results an application for a mining licence was submitted on the 25th October 1995 and granted on the 10th of December 1997. There was no expiry date for the mining licence.

Mining of a bentonite bulk sample was initially carried out by Prestige Plant Hire in 1993 which was followed later by mining further eastwards along the ridge (see mine plan – Appendix A). Mining of bentonite on the study area was carried out sporadically from November 1995 to March 1996; 1999; July 2001: February to May 2003. By this stage the stripping ratio had become such that it was not economic to mine and transport the bentonite to Cape Town and be competitive with the opposition. Thus a decision was made not to apply for a mining right conversion.

A major rehabilitation exercise was carried out from November 2009 until February 2010 which entailed the backfilling of all the open excavations using the old overburden dump on the ridge north of the excavation. Through this rehabilitation exercise, the landscape which had been altered was reclaimed, removing the negative visual impacts that were previously there. Another smaller rehabilitation exercise was carried out in December 2013.

In order to be compliant, bank guarantees have been submitted to the DMR in the Western Cape since the 3rd of November 1997 for R 49,000 with the last one submitted on the 4th of April 2014 for an amount of R211,700.

A site visit was conducted in November 2014 and the site area is consistent with the rehabilitation programme plan (1993), only a small area in the western portion still needs rehabilitation strategies to be implemented. Rehabilitation takes time, thus the progress of the rehabilitation area will have to be monitored, and this may take a number of years before the area is in a state which is similar to that of the unmined areas.
1. Contact Person and correspondence address

1.1. Details of the EAP

Name of the Practitioner: Lara Crous
Tel No: 046 622 2364
Fax No: 046 622 6564
e-mail address: l.crous@cesnet.co.za

1.2. Expertise of the EAP

The qualifications of the EAP (with evidence).
2008 - BSc (Environmental Science and Geography) Rhodes University
2009 - BSc (Hons) with Distinction (Environmental Science) Rhodes University
Current – Msc (Fisheries Science) Rhodes University

Summary of the EAP’s past experience. (In carrying out the Environmental Impact Assessment Procedure)

PROFESSIONAL EXPERIENCE

February 2015 – Present:
Senior Environmental Consultant (EOH Coastal & Environmental Services)
Grahamstown, South Africa

February 2012 – February 2015:
Environmental Consultant (Coastal & Environmental Services)
Grahamstown, South Africa

SELECTED CONSULTING EXPERIENCE

International Environmental Impact Assessments:
• Project: Baobab, Tete Iron Ore Project Location: Mozambique Role: Project manager
• Project: Upgrading of Maroua oil mill Location: Cameroon Role: Project manager
• Project: Upgrading of Garoua oil mill Location: Cameroon Role: Project manager
• Project: Toliar Sands Project Location: Madagascar Role: Report production and specialist co-ordinator

South African Environmental Impact Assessments:
• Project: Environmental Opinion for Howisons Poort Powerline
• Project: Dassiesridge Wind Energy Facility (Uitenhague, RSA) Role: Assistant project manager
• Project: Kamiesberg Heavy Minerals Mine (Garies, RSA) Role: Public Participation & specialist co-ordinator
• Project: Peddie Wind Energy Facility Location: Peddie Role: Report production
• Project: Mooi Mgeni Transfer Scheme phase 2, Water Transfer Scheme Location: Midlands, KZN Role: Report production & receiving stream specialist study
• Project: Fishwater Flats Wastewater treatment works Location: Port Elizabeth Role: Public participation co-ordinator
• Project: Belmont Valley Residential and Golf Course Development Location: Grahamstown Role: Participation co-ordinator & report production
• Project: Hluhluwe Wind Farm Location: Hluhluwe Role: Report production
• Project: Richards Bay Wind Energy Facility Location: Richards Bay Role: Traffic and transport assessment
Basic Assessments:
- **Project**: Grahamstown to Fish River Bridge N2 upgrade **Location**: Grahamstown  
  **Role**: Project manager & report production
- **Project**: Healdtown wastewater treatment works upgrade **Location**: Fort Beaufort  
  **Role**: Project manager & report production
- **Project**: N10 section 3 road upgrade **Location**: Cradock  
  **Role**: Project manager & report production
- **Project**: R61 section 2 road rehabilitation **Location**: Cradock  
  **Role**: Project manager & report production
- **Project**: Re-routing of Eskom Powerline **Location**: Grahamstown  
  **Role**: Report production

Environmental Management Plans, Environmental Control Officer
- **Project**: Waainek Wind Energy Facility ECO **Location**: Grahamstown
- **Project**: G&W Base Strowan Mine EMPr revision **Location**: Grahamstown
- **Project**: G&W Base Albertinia Mine Financial closure report **Location**: Albertinia,
- **Project**: G&W Base Plettenberg Bay Mine Financial closure report **Location**: Plettenberg Bay
- **Project**: Makana Brick update EMPr and financial costing **Location**: Grahamstown
- Financial close costing reports for Strowan, Albertinia and Plettenberg Bay, Makana Brick Mines

Aquatic / Surface Water Quality specialist Reports
- **Project**: Baobab Tete Iron Ore Project **Location**: Tete, Mozambique.  
  **Role**: surface water quality testing and aquatic invertebrate collection using the South African Scoring System (SASS) 5 method, data analysis and interpretation and report production.
- **Project**: Triton Graphite Mine **Location**: Montepuez, Mozambique.  
  **Role**: surface water quality testing and aquatic invertebrate collection using the South African Scoring System (SASS) 5 method, data analysis and interpretation and report production.

Short courses provided by CES:
- Environmental Impact Assessment Course co-ordinator as well as facilitator, 2014
- Environmental Impact Assessment Course facilitator, 2013
- Integrated Coastal Zone Management training course assistance, 2013

Mining applications:
- Mining Application for Hard Rock Quarry and borrow pits for N10-3 road upgrade
- Mining Application for Hard Rock Quarry and borrow pits for R61-2 road upgrade
- Mining Application for Hard Rock Quarries and borrow pits for N2 road upgrade

Water Use License applications:
- General authorisation for N10-3 road upgrade
- General authorisation for R61-2 road upgrade
- General authorisation for N2 road upgrade
- General authorization for stabilization of slope along N10-3
2. Location of the overall Activity.

<table>
<thead>
<tr>
<th>Farm Name</th>
<th>Roodefontein</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application area (Ha)</td>
<td>5.75 ha</td>
</tr>
<tr>
<td>Magisterial district:</td>
<td>Plettenberg Bay</td>
</tr>
<tr>
<td>Distance and direction from nearest town</td>
<td>10 km</td>
</tr>
<tr>
<td>21 digit Surveyor General Code for each farm portion</td>
<td>C039000000000044000049</td>
</tr>
</tbody>
</table>

The site is located on portion 77(A portion of portion 76) of the farm Roodefontein No 440, in the Plettenberg Bay Area, Western Cape Province of South Africa.

Portion 77 is approximately 63 ha and about 5.75 ha of the area had been impacted due to the mining activity which occurred sporadically from November 1995 to March 1996; 1999; July 2001: February to May 2003. Only a small portion of this area, less than 0.4 ha is still undergoing rehabilitation. Below are photographs illustrating the area disturbed due to the mining activity.

Figure 3.1 shows the location of the project in relation to the regional setting. Plettenberg Bay is found within the Western Cape Province, between Port Elizabeth (in the Eastern Cape) and Knysna (Western Province), it is found between the town Nature’s Valley and Knysna.
2.1 Site description

Portion 77 is approximately 63 ha and about 5.75 ha of the area had been impacted due to the mining activity which occurred sporadically from November 1995 to March 1996; 1999; July 2001: February to May 2003. Only a small portion of this area, less than 0.4 ha is still undergoing rehabilitation. Below are photographs showing an overview of the area disturbed due to the mining activity.

Plate 1-1: Site Photographs of the Plettenberg Bay Bentonite Mine.
3. **Locality Map**

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

![Locality Map](image)

Figure 3.1: Locality map of the project area showing nearest towns (Krantshoek, Plettenberg Bay, Knysna).
4. **Description of the scope of the proposed overall activity.**

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

Figure 4.1: Study area for the proposed decommissioning activity.
4.1 Listed and specified activities

<table>
<thead>
<tr>
<th>NAME OF ACTIVITY</th>
<th>Aerial extent of the activity Ha or m²</th>
<th>LISTED ACTIVITY Mark with an X where applicable or affected</th>
<th>APPLICABLE LISTING NOTICE (GNR 544, GNR 545 or GNR 546)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The decommissioning of any activity requiring – (i) a closure certificate in terms of section 43 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 38 of 2002)</td>
<td>5.75 ha</td>
<td>22</td>
<td>GNR 983</td>
</tr>
</tbody>
</table>

4.2 Description of the activities to be undertaken

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

The activity to be undertaken on the study area is the application of a closure certificate as a result of decommissioning the mining activity, listed activity no. 22. Mining in the study area has already ceased and the decommissioning process has already commenced, where all mining infrastructure has been removed from site. Currently there is ongoing rehabilitation and ongoing removal of alien invasive species on the project area, these commenced during mine operation as had been required by the rehabilitation programme. Below is a description of the recommendations provided in the risk assessment and closure plan that need to be applied for the rehabilitation and removal of alien invasive species to ensure that all risks associated with the mining activity are mitigated and that the area is left in a manner that is environmentally safe and does not have negative impacts on the environment and neighbouring communities.

The methodology which will be applied for the rehabilitation of the remaining affected area and removal of alien invasive species is discussed below.

On-going Rehabilitation

- EOH Coastal and Environmental services has recommended that this area is reshaped and backfilled with soil, sand and gravel and re-vegetated. To achieve this, a contractor will be appointed to carry out this activity, where the slope adjacent to the pit that was formed during the mining operation will be re-shaped and the material filled into the pit, soil and gravel will have to be bought to add to the pit.
- Addition of topsoil and mulch once the area has been re-shaped.
- In the rehabilitation process the topsoil will contain seeds of pioneer species and species that grow in the area, the mulch and brushwood will be spread onto the disturbed area.
- Monitoring and Active management of the area especially for the first two years is important.
Removal of Alien invasive species

**General requirements**

- Large trees should be cut with chain-saws or axes and the open stems poisoned to ensure that the plant dies and does not re-sprout (coppice).
- Cuttings must be burnt in an open clearing where the risk of spreading fire is minimal, in order to kill the seeds on the plants.
- Follow up to cleared site must be conducted every two months to remove upcoming seedlings.
- In cases where large scale alien plant removal has been conducted, measures to stabilise the soil from wind and water erosion must be taken. Soils may be mulched and planted with indigenous pioneer species.
- Continued monitoring throughout the life of the project will be required as the risk of alien plant species invasion is never eliminated.

**Removal of alien invasive species through various methods**

There are a number of possible methods which can be used to control alien invasive species; these include mechanical, chemical and biological control. The sections below outline possible techniques used in mechanical and chemical control methods. Biological control is not a feasible option for this site, and is thus not discussed further. Table 4.2 (below) outlines specific management details for each of the alien invasive species identified on site.

**Mechanical control methods**

Mechanical methods for alien plant removal may include felling, removing or burning invading alien plants. The following mechanical methods for felling are recommended:

- **Hand pulling:** Grip the young plant low down and pull out by hand (using gloves).
- **Ring barking:** Bark is removed to from the bottom of the stem to a height of 0.75-1.0 m to below ground level. Bush knives or hatchets can be used for debarking.
- **Frill or Ring-bark:** Using an axe or bush knife, angled cuts are made downward into the cambium layer through the bark in a ring; herbicide is applied into the cuts.
- **Cut stump treatment:** Stems should be cut as low as practical as stipulated on the herbicide label. Chemical herbicides are applied in diesel or water as recommended. Applications in diesel should be to the whole stump and exposed roots and in water to the cut area as recommended on the label.

**Chemical control methods**

Chemical methods for alien plant removal include using a number of approved environmentally safe herbicides, which are applied to the leaves, stems or stumps of alien invader species. The working for water guidelines (2005) provides methods that maybe used to control invasive species using herbicide treatment. According to their guidelines, the foliar spray treatment method may be suitable to use on seedlings, sapling and coppicing species of *Acacia saligna* (Port Jackson) and the frill/Stump method may be suitable to use on stumps of Adult *Acacia mearnsii* (Black Wattle) species.
5. Policy and Legislative Context

<table>
<thead>
<tr>
<th>APPLICABLE LEGISLATION AND GUIDELINES TO COMPILE THE REPORT</th>
<th>REFERENCE WHERE APPLIED</th>
<th>HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LIGISLATION AND POLICY CONTEXT</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Environmental Management Act, 1998 (Act No. 107 of 1998)</td>
<td>GNR 983, Activity 22 (i) is triggered</td>
<td>Basic Assessment Report has been submitted Basic Assessment and EMP has been compiled as required by NEMA</td>
</tr>
</tbody>
</table>

6. Need and desirability of the proposed activities.

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

An application for a closure certificate has been applied for as mining has ceased and it is a regulatory requirement to close the mine once mining has ceased. The area has already undergone rehabilitation during the lifespan of the mine, with a small area remaining. It is important that rehabilitation continues in this area as this will:

- Allow for the re-introduction of plant species that were lost in the disturbed area, this will in turn encourage the return of some animal species when the habitat is suitable.
- Will be aesthetically appealing to the neighbouring community, a small area remains bare, thus the reshaping and re-vegetation of this area will improve the aesthetic appearance of this area.
- There is a need that the environment is left in a safe manner that is not harmful to the neighbouring community.

7. Motivation for the overall preferred site, activities and technology alternative.

N/A as mining in this area has already occurred in this area and ceased. Thus no alternative site could be chosen for the triggered activity. The closure certificate can only be supplied for the existing site.
8. Full description of the process followed to reach the proposed preferred alternatives within the site.

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

N/A as mining in this area has already occurred in this area and ceased. Thus no alternative site could be chosen for the triggered activity. The closure certificate can only be supplied for the existing site.

8.1 Details of the development footprint alternatives considered.

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

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

N/A as mining in this area has already occurred in this area and ceased. Thus no alternative site could be chosen for the triggered activity. The closure certificate can only be supplied for the existing site.

8.2 Details of the Public Participation Process Followed

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

The following was conducted:

1. Letter of notification sent to neighbouring farm owners
2. An advert was placed in the local paper
3. Notification of organs of state.

1. Letter of Notification to neighbouring farm portions

A letter of Notification was e-mailed on the 28th November 2014 to the neighbouring farm portions and the land owner (applicant and mining permit holder). Please see below the Notification Letter and the List of neighbouring farm portions which were notified.
Dear Landowner

NOTIFICATION: APPLICATION OF CLOSURE CERTIFICATE FOR THE PLETTSBERRG BAY BENTONITE MINE, BITOU LOCAL MUNICIPALITY, WESTERN CAPE PROVINCE

In accordance with the requirements of section 54 (2) (b) (vi) of the Mineral and Petroleum Resources Development Regulations (2004) made in terms of section 24(5) of the National Environmental Management Act (Act No 28 of 2002) as amended, we are required to, “give notice to The Regional Manager or designated agency”. In accordance with this requirement, please find here-with a letter of notification for a closure report and environmental risk assessment being carried out by EOH Coastal and Environmental Services in respect of the above-mentioned project.

Background to mining activities

Prospecting for Bentonite was first carried out in the late 1960’s over several farms in the Jakkalskraal area. Based on the results of the auger drilling that was carried out, the mineral and surface rights over Portions 47, 48 & 77 of Roodefontein No. 440 were purchased from the then owners. Only the mineral rights over portion 50 of Roodefontein were purchased. No mining was ever carried out on Pin 47 and the property was sold in November 2004.

Bentonite was also obtained from Vantell Brickworks on portion 49 in the 1980’s once the overlying shales had been stripped for use in brickmaking. The bentonite supply from Vantell from Pin 49 became erratic as it was dependant on the activities of Vantell, so G & W moved to portions 48 and portion 50 between 1989 and July 1992. G & W utilized the services of a local contract mining company owned by the Redman’s called Prestige Plant Hire. This company also carried out the post mining rehabilitation on these 2 portions which incorporated logging, construction of gabions as well as profiling and spreading of topsoil from May 1992.

Activities on portion 77 commenced when an application for a mining permit was submitted on the 23rd of June 1993 and granted on the 27th of September 1993. This was valid until the 26th of September 1995. Activities began between June and July 1995 in the form of prospect drilling using a mechanical crawler auger. Based on these results it decided to apply for a mining licence. An application for a mining licence on portion 77 of Roodefontein 440 was submitted on the 25th of October 1995 and granted on the 10th of December 1997. Mining of a bentonite bulk sample was initially carried out by Prestige Plant Hire in 1993 which was followed later by mining further eastwards along the ridge.

Mining campaigns were carried out sporadically from November 1995 to March 1996; 1997; July 2001: February to May 2003. By this stage the stripping ratio had become such that it was not economic to mine and transport the bentonite to Cape Town and be competitive with the opposition. A decision was made not to apply for a mining right conversion.
During the final stages of the mining, several alien vegetation eradication programmes were implemented by sub-contractors. The first exercise was carried out from Sept. 2002 until February 2003. Other campaigns occurred from August to September 2003; October 2004; July to December 2007; September 2009 to December 2009 with a final programme from March to May 2014.

A major rehabilitation exercise was carried out from November 2009 until February 2010 which entailed the backfilling of all the open excavations using the old overburden dump on the ridge north of the excavation. This had been an eyesore for many years and has been removed totally. A smaller rehabilitation exercise was carried out in December 2013.

EOH Coastal & Environmental Services (CES) of Grahamstown have been appointed by G & W BASE AND INDUSTRIAL MINERALS (PTY) Ltd, to conduct an application for closure certificate.

Way forward

Notification letters will be sent to relevant Western Cape government departments (Department of Mineral Resources as well as Department of Water and Sanitation), the landowner as well as surrounding landowners to notify the intent to apply for a closure certificate and to give these stakeholders an opportunity to comment on the proposed mine closure.

An application for a closure certificate will be submitted to the Western Cape Department of Mineral Resources Regional Office in Cape Town in accordance with Regulation 57 (1) (2) of the MPRDA Regulations which states the following:

Application for closure certificate

57. (1) An application for a closure certificate by the holder of a prospecting right, mining right, retention permit or mining permit in terms of section 43(4) of the Act must be completed in the form of Form P, contained in Annexure II.

(2) The application referred to in subregulation (1) must be accompanied by the following documentation –

(a) A closure plan contemplated in regulation 62;

(b) an environmental risk report contemplated in regulation 80;

(c) a final performance assessment report contemplated in regulation 66(9); and

EOH CES would highly appreciate it if you could confirm your receipt of this notification via email, fax, phone or post. For more information, please feel free to contact me at the EOH CES Grahamstown office numbers shown below.

Yours sincerely,

Lara Crous
Environmental Consultant
Table 3.1: Contact details of the neighbouring portions farm owners which were notified of the application for a closure certificate for the Plettenberg Bay Bentonite Mine.

<table>
<thead>
<tr>
<th>Name</th>
<th>Status</th>
<th>Sector number</th>
<th>Farm number</th>
<th>Mobile</th>
<th>Telephone</th>
<th>e-mail address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mungle, Guy</td>
<td>E01</td>
<td>440/47</td>
<td></td>
<td>082 802 0763</td>
<td>011 574 2090</td>
<td><a href="mailto:guy.mungle@za.nestle.com">guy.mungle@za.nestle.com</a></td>
</tr>
<tr>
<td>Coertze, Jaco</td>
<td>GIBELA</td>
<td>E03</td>
<td>440/48</td>
<td>082 333 1555</td>
<td></td>
<td><a href="mailto:jaco@gibela.org">jaco@gibela.org</a></td>
</tr>
<tr>
<td>Christ</td>
<td>Manager</td>
<td>E03</td>
<td>440/48</td>
<td>082 761 6425</td>
<td></td>
<td><a href="mailto:christ@gibela.org">christ@gibela.org</a></td>
</tr>
<tr>
<td>Vantell</td>
<td>Drey see F13</td>
<td>440/49</td>
<td></td>
<td>082 899 4348</td>
<td>044 533-9154</td>
<td><a href="mailto:sdrew@mweb.co.za">sdrew@mweb.co.za</a></td>
</tr>
<tr>
<td>Swart, Dave &amp; Dorothy</td>
<td>Owner</td>
<td>E09</td>
<td>440/90</td>
<td>083 419 7553081 270 0658</td>
<td>533-6903</td>
<td><a href="mailto:goriedown@telkomnet.co.za">goriedown@telkomnet.co.za</a></td>
</tr>
<tr>
<td>Johnson, Andy &amp; Dl</td>
<td>Owner</td>
<td>E11</td>
<td>440/50</td>
<td>082 779 1519</td>
<td></td>
<td><a href="mailto:djohnson@mwebBiz.co.za">djohnson@mwebBiz.co.za</a></td>
</tr>
<tr>
<td>Stigman, John &amp; Pam</td>
<td>BushTops</td>
<td>E13</td>
<td>440/51</td>
<td>082 774 3530</td>
<td>535-9131</td>
<td><a href="mailto:john@bushtops.net">john@bushtops.net</a></td>
</tr>
<tr>
<td>Shaun Smith</td>
<td>Tenant</td>
<td>E13</td>
<td>440/51</td>
<td>072 839 6656</td>
<td></td>
<td><a href="mailto:thinair@worldonline.co.za">thinair@worldonline.co.za</a></td>
</tr>
<tr>
<td>Windsor, Rob &amp; Sue</td>
<td>Owner - Fern Valley</td>
<td>E15</td>
<td>440/52</td>
<td>084 584 0800/084 782 1439</td>
<td>533-9139</td>
<td><a href="mailto:rwindsor@gmail.com">rwindsor@gmail.com</a></td>
</tr>
<tr>
<td>Andre Vosloo</td>
<td>Roodefontein Estate</td>
<td>E16</td>
<td>440/82</td>
<td>076 205 1585</td>
<td>533-5853</td>
<td><a href="mailto:andrevosloo@hotmail.com">andrevosloo@hotmail.com</a></td>
</tr>
</tbody>
</table>

Figure 3.2 Proof that email notifications were sent to surrounding land owners.
2. Advert

An advert indicating that G&W Base Industrial Minerals is applying for a closure certificate was placed within a local newspaper (CXPRESS) of the area. The primary aim of this advert was to ensure that the I&APs are informed of the project. The advert (shown in red border below), was placed in the papers 1st of April 2015 Issue.

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**BASIC ENVIRONMENTAL ASSESSMENT PROCESS**

APPLICATION FOR CLOSURE CERTIFICATE FOR BENTONITE QUARRY ON PORTION 77 OF THE FARMS ROODEFONTEIN No. 441, PLETTERBENG BAY

Notice is given in terms of Regulation 41 under the National Environmental Management (Waste) Act 59 of 2008, that the proposals for closure certificate for Bentinque Site on Portion 77 of the Farm Roodefontein No. 441, Plettenberg Bay are presently under public review by the public.

Applicants: G&W Base Industrial Minerals

Village Square, Plettenberg Bay, P.O. Box 109, 6600

Tel: 044 562 1251, Fax 044 562 1252, Email: info@g-w.co.za

Jordaan & Pretorius

Consulting Engineers

---

**INVESTMENT 101 - The Stories**

**Part IV: Of Knives and prices**

As I mentioned before, in this series of investment stories, Fred and the firms traders would often gather in Fred's office, drink a few whiskies and tell a few tales. It was from this classroom that we young traders learnt the ropes of investment. It was through this process that we gained much of our knowledge. We also shared the tricks of the trade, which is how we got on the trading floor.

One such saying used in general was: "Never try to catch a falling knife!" You will deliberately lose a few fingers if you do.

The saying referred to the vicious bear markets that periodically occur in all markets. It warns you not to just jump into a share because it is suddenly in front in your portfolio. It then forces you to do your homework first, to ascertain what is causing the drop, to decide if the high prices are justified or if there are forces at play in the market.

True investment professionals will research thoroughly the facts behind the fall, to decide if it will be temporary or if there are permanent changes that could affect the share price. They will monitor the market for a trend of repeated falls, which is a sign of the share prices falling.

Another great saying, this time from a very reputable source: "Always be the chief investment officer at Samal Private Wealth. Limit this advice from your original mentor who I know will be long past.

We would always remind you that "Buy low, sell high," which is the goal of every investor. This saying is a strong reminder that neither the good times nor the bad times last forever.

In the situation where there has been a prolonged bear market, the public will have been aggressively participating investors. Most investors are making money from their friends who are not participating in the bear markets. This is why, as investors, we should always be aware of the good times and the bad times.

In these circumstances that true professionals do their homework. They will establish the true value of the company's shares, and if it overvalued, the public will gradually begin to reduce their exposure.

The current Bull Run is expected to last such a scenario. This bull market has run for a long time, but an average is maintained (not as fast as what we said) or has the
3. **Notification of Organs of state**

Letters of Notification were e-mailed/posted on the 21st April 2015 to the Organ of States (Bitou Local Municipality, DEAP, SAHRA, Cape Nature and CMA). Please see below the Notification Letter and the List of Organ of states which were notified.

<table>
<thead>
<tr>
<th>Organ of State</th>
<th>Contact Person</th>
<th>Email address</th>
<th>Contact number</th>
<th>Physical Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department of Environmental Affairs and Development Planning</td>
<td>Reanda Pretorius, Malcolm Frederick</td>
<td><a href="mailto:Reanda.pretorius@westerncape.gov.za">Reanda.pretorius@westerncape.gov.za</a>, <a href="mailto:Malcolm.fredericks@westerncape.gov.za">Malcolm.fredericks@westerncape.gov.za</a></td>
<td>044 805 8618</td>
<td>4th floor York Park building, St Johns Street George 6530</td>
</tr>
<tr>
<td>Breede Gouritz Catchment Management Agency</td>
<td>Patrick Coller</td>
<td><a href="mailto:pcoller@breedegouritzcma.co.za">pcoller@breedegouritzcma.co.za</a></td>
<td>023 347 8131</td>
<td>51 A Barring Street, Worcester 6850</td>
</tr>
<tr>
<td>Department of Water and Sanitation</td>
<td>Howard Swartz</td>
<td><a href="mailto:hswartz@plette.gov.za">hswartz@plette.gov.za</a></td>
<td>044 501 3174</td>
<td>1 Sewell Plettenberg Bay 6600</td>
</tr>
<tr>
<td>Local Municipality</td>
<td>Benjamin Walton</td>
<td><a href="mailto:bwalton@capenature.co.za">bwalton@capenature.co.za</a></td>
<td>(044) 802 5300</td>
<td>4th floor York Park Building, York Street George 6530</td>
</tr>
<tr>
<td>Cape Nature</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Department of Agriculture</td>
<td></td>
<td></td>
<td>044-382 1061</td>
<td>Garden Route Centre, c/o Grey and Main Street Knysna</td>
</tr>
<tr>
<td>South African Heritage Resources Agency</td>
<td>Phillip Hine</td>
<td><a href="mailto:phine@sahra.org.za">phine@sahra.org.za</a></td>
<td>(021) 462 4502</td>
<td>111 Harrington Street, CAPE TOWN 8001</td>
</tr>
</tbody>
</table>
NOTIFICATION: APPLICATION OF BASIC ASSESSMENT AS WELL AS CLOSURE CERTIFICATE FOR THE PLETTERNBERG BAY BENTONITE MINE, BITOU LOCAL MUNICIPALITY, WESTERN CAPE PROVINCE

Dear Phillip

Please find attached a notification letter for the closure of the G&W Base mine, mining licence ML 48/97 for Bentonite: portion 77 (a portion of portion 76) of the farm Roodefontein no 440, district Knysna.

Notice is also given in terms of Regulation 41 under the National Environmental Management (NEM) Act 1998, as amended (4 December 2014), that the proposed application triggers activity 22 listed under GN. 983 of the Act.

If you have any comments please send them to myself or to my colleague Ayanda Zide (a.zide@cesnet.co.za)

Many thanks

Lara Crous
Senior Environmental Consultant (Cand. Sci. Nat.)
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Celebrating 20 years of making a difference in our industry
tel: +27 (40) 022 2264 | fax: +27 (40) 022 6664
lara.crous@eoh.co.za | www.eoh.co.za | www.cesnet.co.za

EOH Coastal & Environmental Services
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lara.crous@eoh.co.za | www.eoh.co.za | www.cesnet.co.za

Consulting | Technology | Outsourcing

NOTIFICATION: APPLICATION OF BASIC ASSESSMENT AS WELL AS CLOSURE CERTIFICATE FOR THE PLETTERNBERG BAY BENTONITE MINE, BITOU LOCAL MUNICIPALITY, WESTERN CAPE PROVINCE

Dear Benjamin

Please find attached a notification letter for the closure of the G&W Base mine, mining licence ML 48/97 for Bentonite: portion 77 (a portion of portion 76) of the farm Roodefontein no 440, district Knysna.

Notice is also given in terms of Regulation 41 under the National Environmental Management (NEM) Act 1998, as amended (4 December 2014), that the proposed application triggers activity 22 listed under GN. 983 of the Act.

If you have any comments please send them to myself or to my colleague Ayanda Zide (a.zide@cesnet.co.za)

Many thanks

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Senior Environmental Consultant (Cand. Sci. Nat.)
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lara.crous@eoh.co.za | www.eoh.co.za | www.cesnet.co.za

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lara.crous@eoh.co.za | www.eoh.co.za | www.cesnet.co.za

Consulting | Technology | Outsourcing
NOTIFICATION: APPLICATION OF BASIC ASSESSMENT AS WELL AS CLOSURE CERTIFICATE FOR THE PLETTERNBERG BAY BENTONITE MINE, BITOU LOCAL MUNICIPALITY, WESTERN CAPE PROVINCE

To: Howard
Co: Ayanda Zide

Dear Howard,

Please find attached a notification letter for the closure of the G&W Base mine, mining licence ML48/57 for Bentonite: portion 77 (a portion of portion 76) of the farm Roodefontein no 446, district Knysna.

Notice is also given in terms of Regulation 41 under the National Environmental Management (NEM) Act 1998, as amended (1 December 2014), that the proposed application triggers activity 22 listed under GN. 983 of the Act.

If you have any comments please send them to myself or to my colleague Ayanda Zide (a.zide@cesnet.co.za)

Many thanks

Lara Crous
Senior Environmental Consultant (Card: Sci Nat)
E0H Coastal & Environmental Services
Celebrating 25 years of making a difference in our industry
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lara.crous@eoh.co.za | www.eoh.co.za | www.cesnet.co.za

Coastal & Environmental Services 18 G&W Base
NOTIFICATION: APPLICATION OF BASIC ASSESSMENT AS WELL AS CLOSURE CERTIFICATE FOR THE
PLETTEMBERG BAY BENTONITE MINE, BITOU LOCAL MUNICIPALITY, WESTERN CAPE PROVINCE

Lara Crouns <lcrouns@cesnet.co.za>

Sent: Tue 2015/04/21 10:09 AM
To: reanda.pretorius@westerncape.gov.za; malcolm.federicks@westerncape.gov.za
Cc: Ayanda Zide

Message: Letter of Notification - DEA0P.pdf (198 KB)

Dear Reanda and Malcolm,

Please find attached a notification letter for the closure of the G&W Base mine, mining licence ML 48/97 for Bentonite: portion 77 (a portion of portion 76) of the farm Roodefontein no 440, district Knysna.

Notice is also given in terms of Regulation 41 under the National Environmental Management (NEM) Act 1998, as amended (4 December 2014), that the proposed application triggers activity 22 listed under GN. 583 of the Act.

If you have any comments please send them to myself or to my colleague Ayanda Zide (a.zide@cesnet.co.za)

Many thanks

Lara Crous
Senior Environmental Consultant (Cand. Sci. Net)
EOH Coastal & Environmental Services
Celebrating 26 years of making a difference in our industry
Tel: +27 (44) 622 2364 | Fax: +27 (44) 622 3564
lara.crous@eah.co.za | www.eoh.co.za | www.cesnet.co.za

Notification letters were sent via registered mail to these organs of state.
### 8.3 Summary of issues raised by I&APs

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

No issues have been received from I&APs to date (21/04/2015).

<table>
<thead>
<tr>
<th>Interested and Affected Parties</th>
<th>Date Comments received</th>
<th>Issues raised</th>
<th>EAPs responses to issues as mandated by the applicant</th>
<th>Section and paragraph reference in this report where the issues and or responses were incorporated</th>
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<tr>
<td><strong>AFFECTED PARTIES</strong></td>
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<tr>
<td>Landowner/s</td>
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<tr>
<td>X</td>
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<tr>
<td>Lawful occupier/s of the land</td>
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<tr>
<td>Landowners or lawful occupiers on adjacent properties</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Municipal councillor</td>
<td></td>
<td></td>
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<tr>
<td>X</td>
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<tr>
<td>Municipality</td>
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<td>X</td>
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<tr>
<td>Organs of state (Responsible for infrastructure that may be affected Roads Department</td>
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<tr>
<td>Eskom, Telkom, DWA</td>
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<tr>
<td>Communities</td>
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<th>Other Competent Authorities</th>
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<table>
<thead>
<tr>
<th>OTHER AFFECTED PARTIES</th>
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</table>


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

9.1 Baseline Environment

Type of environment affected by the proposed activity.
(Its current geographical, physical, biological, socio-economic and cultural character)

Baseline information of the study area, no alternatives are possible for the current project.

Climate
The climate of the Western Cape is characterised by the warm temperate Mediterranean climate where the summers are hot and dry whilst the winters are cold (SDF, 2005). The average daily maximum temperature is 27.6°C during January and 6.5°C during July. This area experiences almost the same amount of rainfall throughout the year being slightly lower during the winter months, where the average annual rainfall varies between 310mm and 1120mm with an average rainfall of 700mm (Mucina and Rutherford, 2006). During the summer months the winds generally blow in an easterly direction whilst during the winter months in a westerly direction (Bitou Municipality SDF, 2013). Frost events occur between 2-3 days per year (Mucina and Rutherford, 2006).

Topography
The project site is characterised by rolling hills and moderately undulating plains on the coastal forelands. It is found on a North-East trending, flat topped, spur which overlooks the Piesang river valley. From summit ground slopes North West to Piesang Valley and South West to a right bank tributary valley. Plate 9-1 shows the general topography of the area.

Plate 9-1: Photographs (A-B) illustrating the general topography of the area

Surface Hydrology
A number of wetlands are found to occur in the surrounding areas of the study area (Figure 4.3). No water courses/ water bodies (river, watercourse) occurs within 500m of the site. Boreholes are found on adjoining farms but none occur on portion 77 (study area).

Geology and Soils
The project occurs in an area where the underlying geology is of the Caimans Group and Ecca (In the east) shales (Mucina and Rutherford, 2006). Soils found in this Garden Route Shale fynbos are acidic, moist clay-loam, prismacutanic and pedocutanic. This vegetation type is found to occur mainly on Db and Fa land types (Mucina and Rutherford, 2006).
Flora

Garden Route Shale fynbos

According to Mucina and Rutherford (2006) the vegetation type found to occur on the project site is the Garden Route Shale fynbos (Figure 9.2), which is found between the Eastern and Western Cape provinces of South Africa. It occurs in patches and its distribution ranges between the Langeberg at Groetberg to south of both the Clarkson and Kareedouw Mountains. In wetter areas this vegetation type is characterised by tall, dense proteoid and ericaceous fynbos whilst in the drier areas it is characterised by graminoid fynbos also known as shrubby grassland. The fynbos is generally confined to flatter more extensive landscape areas which are exposed to frequent fires. Most of the shales are covered with afrotemperate forest. Plant species endemic to this vegetation type includes *Cyphia georgica*, *Disa newdigateae* and *G-ladiolus roseovenosus*. Alien plant species such as *Hakea sericea* and various species of *Acacia* locally infest natural remnants.

This vegetation type is classified as “Endangered” and about 23% of this vegetation is conserved and about 8% statutorily conserved. More than 50% has already been transformed by cultivation and pine plantations. A large area of the remaining veld has been converted to pasture (Mucina and Rutherford, 2006).

![Figure 9.2: Map illustrating the vegetation type (Garden Route Shale Fynbos) which the study area occurs in.](image)

Fauna

During the site visit there were no faunal species observed in this area. It is expected that due to the rehabilitation that has already occurred, some faunal species maybe utilising the available habitat. The area is fenced thus may also restrict the presence of certain faunal species.
9.2 Description of the current land uses

Mining operations in the project area ceased in May 2003, no activity is currently occurring on this area. It is hoped to sell this land for stock farming purposes (as the neighbouring farms are stock farms)

9.3 Description of specific environmental features and infrastructure on the site.

All infrastructure from the mining activities which were conducted on site have been removed from the project area (mining ceased in May 2003). There are no environmental features of value in the surrounding area of the project site
9.4 Environmental and current land use map. (Show all environmental and current land use features)

Figure 9.3: Showing the rivers and wetlands found near the project area, the area which was mined for Bentonite (Mining Area) and the area which has been identified as the area that still requires active rehabilitation (rehabilitation Area is in purple).
9.5 Impacts and risks identified including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts

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

Not applicable, as there are no alternatives. This is an application for decommissioning of an activity requiring a closure certificate where mining has already occurred and ceased.

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

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

Not applicable, as there are no alternatives. This is an application for decommissioning of an activity requiring a closure certificate where mining has already occurred and ceased.

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

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

Not applicable, as there are no alternatives. This is an application for decommissioning of an activity requiring a closure certificate where mining has already occurred and ceased.

9.8 The possible mitigation measures that could be applied and the level of risk.

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

Not applicable, as there are no alternatives. This is an application for decommissioning of an activity requiring a closure certificate where mining has already occurred and ceased.

9.9 Motivation where no alternative sites were considered.

No alternative sites could be considered for this process, as the triggered activity is a decommissioning of an activity requiring a closure certificate. A closure certificate is required for this particular area which had been previously mined for Bentonite.

9.10 Statement motivating the alternative development location within the overall site.

(Provide a statement motivating the final site layout that is proposed).

No alternative site could be selected for this particular project, as the triggered activity is the decommissioning of an activity requiring a closure certificate.
10. Full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site (in respect of the final site layout plan) through the life of the activity. (including (i) a description of all environmental issues and risks that were identified during the environmental impact assessment process and (ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures).

Data collection and objectives

Two site visits were conducted; the first one was conducted on the 9 and 10 December 2013 by Prof Roy Lubke, Ms Lara Crous of EOH CES. The purpose of the site visit was to assess the current status of the mine and to determine the financial costing for mine closure. Second site visit was conducted on the 13-14 November 2014 by Ayanda Zide and Ms Lara Crous of EOH CES. The purpose of this site visit was to assess the area for any possible risks that may be present or could be potential risks in the future and obtain a closure certificate.

Impact Assessment Methodology

To determine the environmental risks associated with the Plettenberg Bay mine, a risk rating that provides the rationale for and the priority for any further risk control actions was used. The rating scheme given in Tables 3.1 and 3.2 was used to decide on the appropriate risk rate. The Impact Severity Table (Table 3.1) allows for the severity of any consequence to be ranked qualitatively as insignificant, minor, moderate, major and catastrophic. The likelihood of a consequence (including its associated impacts) is then described according to the scales presented in Table 3.1. Due to the mine no longer being in operation, only certain portion of these tables will be relevant.

Table 10.1: Severity (Impact/Consequence)

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Catastrophic (1) (critical)</th>
<th>Major (2) (High Impact)</th>
<th>Moderate(3) (Medium Impact)</th>
<th>Minor (4) (Low Impact)</th>
<th>Insignificant (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health and safety</td>
<td>Multiple fatalities</td>
<td>Single fatality</td>
<td>MTI/LTI *</td>
<td>FAI*</td>
<td></td>
</tr>
<tr>
<td>Environment</td>
<td>Closure of company for any period of time</td>
<td>Prosecution in Supreme/Regional court</td>
<td>Prosecution in district court</td>
<td>Verbal disagreement from regulators</td>
<td></td>
</tr>
<tr>
<td>Financial damages (US $)</td>
<td>&gt; 1 000 000</td>
<td>1 000 000 – 100 000</td>
<td>100 000 – 10 000</td>
<td>&lt;10 000</td>
<td></td>
</tr>
<tr>
<td>Workforce</td>
<td>Closure of company for any period of time</td>
<td>Partial interruption in one or more production modules or services within financial damages framework</td>
<td>Partial interruption in one or more production modules or services within financial framework</td>
<td>Partial interruption in one or more production modules or services within financial framework</td>
<td></td>
</tr>
<tr>
<td>External company image of community-related</td>
<td>Adverse international press coverage of closure of company for any period of time</td>
<td>Adverse national press coverage or production interruption within financial framework</td>
<td>Adverse local press or production interruption within financial damages framework</td>
<td>Formal complaints from wider community or production interruption within financial framework</td>
<td></td>
</tr>
<tr>
<td>Customer satisfaction and/or product/service quality</td>
<td>Occurrence will result in cancellation of a contract within financial damages framework</td>
<td>Occurrence will result in cancellation of a contract within financial damages framework</td>
<td>Occurrence will result in cancellation of a contract within financial damages framework</td>
<td>Once-off slight deviation on supply with immediate rectification</td>
<td></td>
</tr>
<tr>
<td>Probability / Likelihood</td>
<td>Description</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>--------------------------</td>
<td>-------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A Almost Certain</td>
<td>The event is expected to occur during the life of the project within 0-1 year</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B Likely</td>
<td>The event is likely to occur during the life of the project within 1-5 years</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C Moderate</td>
<td>The event might occur at some time during the project within 5-25 years</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D Unlikely</td>
<td>Low probability that the event could occur at some time during the project and within 25-50 years</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E Rare</td>
<td>The event may occur in exceptional circumstances but would not be expected to occur</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Evaluating the risk involved combining the severity of the consequences resulting from the potential incident or aspect and the likelihood of that consequence occurring. Single hazards/aspects are positioned on the matrix by using the axes of consequence/severity and the likelihood of that outcome (Table 3.3). The risk is then ranked as either:

- Low, Medium; High, or Critical
  Wherever the consequence severity is critical, the task / activity / change / modification cannot continue before approvals by the Operations/Project Director.

Table 3.3: Risk Matrix

<table>
<thead>
<tr>
<th>Consequence(SEVERITY)</th>
<th>Insignificant (5)</th>
<th>Minor (4) (Low Impact)</th>
<th>Moderate(3) (Medium Impact)</th>
<th>Major (2) (High Impact)</th>
<th>Catastrophic (1) (critical)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Almost Certain (A)</td>
<td>Low 5A</td>
<td>Medium 4A</td>
<td>Critical 3A</td>
<td>Critical 2A</td>
<td>Critical 1A</td>
</tr>
<tr>
<td>Likely (B)</td>
<td>Low 5B</td>
<td>Medium 4B</td>
<td>High 3B</td>
<td>Critical 2B</td>
<td>Critical 1B</td>
</tr>
<tr>
<td>Moderate (C)</td>
<td>Low 5C</td>
<td>Medium 4C</td>
<td>High 3C</td>
<td>High 2C</td>
<td>Critical 1C</td>
</tr>
<tr>
<td>Unlikely (D)</td>
<td>Low 5D</td>
<td>Low 4D</td>
<td>Medium 3D</td>
<td>High 2D</td>
<td>High 1D</td>
</tr>
<tr>
<td>Rare (E)</td>
<td>Low 5E</td>
<td>Low 4E</td>
<td>Medium 3E</td>
<td>Medium 2E</td>
<td>Medium 1E</td>
</tr>
</tbody>
</table>

Ranking of risk According to MPRDA Regulations

According to the regulations one is required to rank each risk on whether it is (aa) potential significant risk, (bb) uncertain risk, (cc) significant risk. The risks with the rating using the EOH CES rating system where then categorised according to the MPRDA regulations.

Assumptions and limitations
Due to the brief nature of the site visits conducted at the study area, this assessment is based largely on our understanding of the physical and ecological setting based on available literature and based on information that has been gathered in the life span of the mine and during the rehabilitation process.
11. Assessment of each identified potentially significant impact and risk

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

<table>
<thead>
<tr>
<th>NAME OF ACTIVITY</th>
<th>POTENTIAL IMPACT</th>
<th>ASPECTS AFFECTED</th>
<th>PHASE</th>
<th>SIGNIFICANCE</th>
<th>MITIGATION TYPE</th>
</tr>
</thead>
</table>
| Mining - Excavations (removal of | Erosion                               | 0.2 ha of the study has bare areas | Decommissioning phase | High (3B) Potential significant risk (aa) | • Employ soil erosion control measures, such as protection berms, where necessary to minimize soil erosion;  
  • Rehabilitate all slopes and degraded areas before the onset of the rainy season. Use topsoil as much as possible in these areas;  
  • Develop procedures to minimize surface water run-off and soil erosion; and  
  • Improve soil properties to encourage re-vegetation.  
  • Area could be re-vegetated with cuttings of indigenous plants from the surrounding area.  
  • A hollow (pit) has formed as a result of the mining activity:  
    o According to the Rehabilitation programme “In the event of a hollow area formed on completion of mining activities a drainage |

Coastal & Environmental Services 30 G&W Base
system shall be constructed to ensure sufficient and safe control of the run-off water.”
It is suggested that this area is kept clear of alien species.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Alien invasion</th>
<th>Fire</th>
<th>Soil health</th>
<th>Clearing Activities and Monitoring of the area.</th>
<th>Vegetation which has been cleared should be removed from the site and disposed of as waste.</th>
<th>Application of topsoil, Mulching</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mining – The surrounding area already has alien invasive species but the disturbance of the area due to mining (such as excavation, where there has been a removal of vegetation and disturbance of the environment could have made the area more susceptible to alien invasion.</td>
<td>20 ha of the study area has alien invasive species</td>
<td>Small area where alien invasive species were removed</td>
<td>Rehabilitation area (0.2 ha)</td>
<td>Decommissioning phase</td>
<td>Medium (4B) Potential significant risk (aa)</td>
<td>Area should be reseeded with annual grasses and pioneer plant species that have been found to establish in these soils and in area. Species that can be used from the surrounding area include Chrysanthemoides monilifera, Helichrysum spp., Elytropappus rhinocerotis and Passerina corymbosa</td>
</tr>
<tr>
<td>Removal of Alien invasive species and leaving it on site is a fire hazard.</td>
<td></td>
<td></td>
<td></td>
<td>Decommissioning phase</td>
<td>Medium (4B) Potential significant risk (aa)</td>
<td></td>
</tr>
<tr>
<td>Mining - Excavations. Mining process has altered the availability of nutrients in the soil for plant establishment. Decrease in water availability for plants</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The supporting impact assessment conducted by the EAP must be attached as an appendix, marked **Appendix**
12. Summary of specialist reports.

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

<table>
<thead>
<tr>
<th>LIST OF STUDIES UNDERTAKEN</th>
<th>RECOMMENDATIONS OF SPECIALIST REPORTS</th>
<th>SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X where applicable)</th>
<th>REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED</th>
</tr>
</thead>
</table>
| Vegetation Specialist Report| Recommendations to deal with Alien and invasive species on site:  
- Various methods may be used to clear alien invasive species, such as the application of herbicides, the use of a biocontrol or by mechanical methods. These methods are provided in the working for water guideline brochure provided below.  
  o It is advised that the large alien invasive species may be cut, and herbicide to be applied on the remaining stumps.  
  o Herbicide may be applied to the *Acacia saligna* which is coppicing on site.  
  o All alien invasive species that have been cut down must be removed from the site and disposed of as waste.  
  o Monitoring and Maintenance of the area to ensure that there is control of alien species on site.  
- Vegetation which has been cleared should be removed from the site and disposed of as waste. | N/A | Section 5 in Vegetation Assessment |
### Recommendations to prevent fire due to alien invasive species left on site:

- Vegetation which has been cleared should be removed from the site and disposed of as waste.

### Recommendations to deal with Erosion on site:

- Employ soil erosion control measures, such as protection berms, where necessary to minimize soil erosion;
- Rehabilitate all slopes and degraded areas before the onset of the rainy season. Use topsoil as much as possible in these areas;
- Develop procedures to minimize surface water run-off and soil erosion; and
- Improve soil properties to encourage re-vegetation.

Area could be re-vegetated with cuttings of indigenous plants from the surrounding area.

A hollow (pit) has formed as a result of the mining activity:
- According to the Rehabilitation programme “In the event of a hollow area formed on completion of mining activities a drainage system shall be constructed to ensure sufficient and safe control of the run-off water”
- It is suggested that this area is reshaped and backfilled with soil, sand and gravel and re-
vegetated.

Recommendations to improve soil health on the project area.

- Application of topsoil
- Mulching
- Area should be reseeded with annual grasses and pioneer plant species that have been found to establish in these soils and in area. Species that can be used from the surrounding area include *Chrysanthemoides monilifera*, *Helichrysum* spp., *Elytropappus rhinocerotis* and *Passerina corymbosa*

Attach copies of Specialist Reports as appendices
13. Environmental Impact Statement

13.1 Summary of the key findings of the environmental impact assessment;

The proposed decommissioning of the bentonite quarry (which ceased operations in 2003) will have four potential negative impacts (see table above). Soil Erosion, Fire and Soil Health were rated as medium to high risk but should the mitigation measures (recommendations) be implemented the severity of the risks will be decreased to ‘LOW’. The risk of invasion of alien species will be mitigated from ‘critical’ to ‘high’. It is almost a certainty that in a few years the alien species will return as the number of alien species on this property as well as surrounding properties is vast.

13.2 Final Site Map

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

Not applicable. As this is a decommissioning of an activity requiring a closure certificate. No associated structures or infrastructure will be placed in the area. The proposed activity involves improving the current status of the project area, thus in the area where the work is proposed there are no areas that should be avoided and no buffers can be delineated.

13.3 Summary of the positive and negative impacts and risks of the proposed activity and identified alternative

No identified alternatives. Positive and Negative impacts associated with the proposed activity are shown below. The Rehabilitation of this area and removal of alien invasive species will result in positive impacts as the area will be improved. The complete eradication of alien species in this area may not be possible as there are alien invasive species in the surrounding areas, thus this impact is difficult to mitigate.

Table 10.3: Positive and Negative Impacts associated with the proposed activity.

<table>
<thead>
<tr>
<th>Positive and Negative Impacts of Mine Closure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Impact</strong></td>
</tr>
<tr>
<td>------------</td>
</tr>
<tr>
<td>Alien Invasive Species</td>
</tr>
<tr>
<td>Fire</td>
</tr>
<tr>
<td>Category</td>
</tr>
<tr>
<td>------------</td>
</tr>
<tr>
<td>Erosion</td>
</tr>
<tr>
<td>Soil health</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Visual</td>
</tr>
</tbody>
</table>
14. Proposed impact management objectives and the impact management outcomes for inclusion in the EMPr:

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

1. Employ soil erosion control measures, such as protection berms, where necessary to minimize soil erosion;
2. Rehabilitate all slopes and degraded areas before the onset of the rainy season. Use topsoil as much as possible in these areas;
3. Develop procedures to minimize surface water run-off and soil erosion; and
4. Improve soil properties to encourage re-vegetation.
5. Area could be re-vegetated with cuttings of indigenous plants from the surrounding area.
6. A hollow (pit) has formed as a result of the mining activity;
7. According to the Rehabilitation programme “In the event of a hollow area formed on completion of mining activities a drainage system shall be constructed to ensure sufficient and safe control of the run-off water” It is suggested that the drainage area is clear of alien species.
8. Clearing Activities and Monitoring of the area for alien invasion.
9. Vegetation which has been cleared should be removed from the site and disposed of as waste.
10. Application of topsoil
11. Mulching
12. Area should be reseeded with annual grasses and pioneer plant species that have been found to establish in these soils and in area. Species that can be used from the surrounding area include *Chrysanthemoides monilifera*, *Helichrysum spp.*, *Elytropappus rhinocerotis* and *Passerina corymbosa*

15. Aspects for inclusion as conditions of Authorisation.

Any aspects which must be made conditions of the Environmental Authorisation

1. Employ soil erosion control measures, such as protection berms, where necessary to minimize soil erosion;
2. Rehabilitate all slopes and degraded areas before the onset of the rainy season. Use topsoil as much as possible in these areas;
3. Develop procedures to minimize surface water run-off and soil erosion; and
4. Area could be re-vegetated with cuttings of indigenous plants from the surrounding area.
5. Clearing Activities and Monitoring of the area for alien invasion.
6. Vegetation which has been cleared should be removed from the site and disposed of as waste.
7. Area should be reseeded with annual grasses and pioneer plant species that have been found to establish in these soils and in area. Species that can be used from the surrounding area include *Chrysanthemoides monilifera*, *Helichrysum spp.*, *Elytropappus rhinocerotis* and *Passerina corymbosa*

16. Description of any assumptions, uncertainties and gaps in knowledge

Due to the brief nature of the site visits conducted at the study area, this assessment is based largely on our understanding of the physical and ecological setting based on available literature and based on information that has been gathered in the life span of the mine and during the rehabilitation process.
17. Reasoned opinion as to whether the proposed activity should or should not be authorised

17.1 Reasons why the activity should be authorised or not.

This activity should be granted a positive environmental authorisation as well as a closure certificate as the applicant has been rehabilitating the area since 2009. Section 12 of the MPRDA 2002 states “The holder of a permit or authorization remains liable for complying with the relevant provisions of the Act until the Regional Director has issued to him a certificate to the effect that he has compiled with the said provisions” The EAP is under the opinion that the applicant has complied with these provisions.

The risks that have been identified can be mitigated. A bank guarantee has provided, indicating that provision has been made for the rehabilitation and removal of species in the proposed area. The Aliens invasive species on site could never be completely eradicated because even in the surrounding areas there is a problem of alien invasive species. Activity should be granted with the conditions that the applicant implements the recommendations that have been provided in the risk assessment report.

17.2 Conditions that must be included in the authorisation

- Employ soil erosion control measures, such as protection berms, where necessary to minimize soil erosion;
- Area could be re-vegetated with cuttings of indigenous plants from the surrounding area.
- Clearing Activities and Monitoring of the area for alien invasion.
- Vegetation which has been cleared should be removed from the site and disposed of as waste.
- Area should be reseeded with annual grasses and pioneer plant species that have been found to establish in these soils and in area. Species that can be used from the surrounding area include Chrysanthemoides monilifera, Helichrysum spp., Elytropappus rhinocerotis and Passerina corymbosa

18. Period for which the Environmental Authorisation is required.

The Environmental Authorisation must be valid until the closure certificate has been received by the applicant.

19. Undertaking

The EAP confirms that the undertaking required to meet the requirements of this section is provided at the end of the EMP and is applicable to both the Basic Assessment report and the Environmental Management Programme report

20. Financial Provision

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

An amount of R 233 609.00 is required for the rehabilitation and removal of the alien invasive species found in farm portion 77 (a portion of farm 76).
20.1 Explain how the aforesaid amount was derived.

The guideline document for the evaluation of the quantum of closure related financial provision (as provided by the Department of Minerals and Energy, January 2005) was used. The rate per hectare for 2 – 3 years of maintenance and aftercare (line item 14) was R700 per ha when the guideline was produced in 2005. Assuming 7.5% increase (inflation) every year this amount has been adjusted to R1342 /ha

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Unit</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E=A<em>B</em>C*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Quantity</td>
<td>Maste r rate</td>
<td>Multiplicatio n factor</td>
<td>Weightin g factor 1</td>
<td>Amount (Rands)</td>
</tr>
<tr>
<td>6</td>
<td>Opencast rehabilitation including final voids and ramps</td>
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<td>0.04</td>
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<tr>
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<td>Rehabilitation of subsided areas</td>
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<td>1.1</td>
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<td>General surface rehabilitation</td>
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<tr>
<td>14</td>
<td>2 to 3 years of maintenance and aftercare</td>
<td>ha</td>
<td>1</td>
<td>1342</td>
<td>1</td>
<td>1.1</td>
<td>1 476</td>
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<tr>
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<td>Alien Vegetation Removal</td>
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<td>7</td>
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<td></td>
<td></td>
<td>17 666</td>
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<tr>
<td></td>
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<td></td>
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<td></td>
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<td>204 920</td>
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<td></td>
<td>Add Vat (14%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>28 689</td>
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<td></td>
<td><strong>GRAND TOTAL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>233 609</td>
</tr>
</tbody>
</table>

Provision for the amount stipulated above (R204 920 exclusive of VAT) will have to be made by G&W Base Industrial Minerals (Pty) Ltd, this is to ensure that all possible risks are dealt with on the affected area.

The Bank Guarantee of R211 700.00 submitted to DMR in the Western Cape on the 4th of April is deemed sufficient for the rehabilitation of the mine area. Should the Department of Mineral Resources request alien vegetation to be removed this guarantee would be insufficient as a quote of R 6,890 / ha has been received from a local alien vegetation removal company. Approximately 20 ha of the 61 ha property is fairly heavily infested which would mean that R137 800 would be necessary for this exercise alone. The removal of the alien vegetation would be a fruitless exercise however, as the surrounding area is infested with alien vegetation and as the surrounding landowners do not remove the alien vegetation on their lands, this invasive vegetation will spread to the mine area in the near future.
20.2 Confirm that this amount can be provided for from operating expenditure.

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

The mine is no longer in operation. A bank guarantee has been received, for the money which has been provisioned for the rehabilitation of this area. An amount of R211 700.00 has been provisioned for the rehabilitation of the area.
21. Specific Information required by the competent Authority

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

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

N/A as operation on the site has ceased, thus there are no socio-economic conditions with regards to the issuing of a closure certificate for the mine.

Impact on any national estate referred to in section 3(2) of the National Heritage Resources Act (Provide the results of Investigation, assessment and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any national estate referred to in section 3(2) of the National Heritage Act, 1999 (Act No. 25 of 1999) with the exception of the national estate contemplated in section 3(2)(i)(vi) and (vii) of that Act, attach the investigation report as Appendix 2.19.2 and confirm that the applicable mitigation is reflected in 2.3.4; 2.11.6 and 2.12 herein).

N/A as operation on the site has ceased, thus activities of rehabilitating the area and mine closure will not result on any historical resources being impacted on.

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

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

No alternative for the area, as this the area as this is a project applying for a closure certificate for an area which was previously mined for bentonite and is no longer in operation.
PART B
ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

1. Details

1.1 Details of the EAP
(Confirm that the requirement for the provisions of the details and expertise of the EAP are already included in PART A, section 1(a) herein as required).
Details of EAP have been provided in PART A, section 1(a) of this document.

1.2 Description of the Aspects of the Activity
(Confirm that the requirement to describe the aspects of the activity that are covered by the draft environmental management programme is already included in PART A, section (1) (h) herein as required).
Description of proposed activity has been provided in PART A, section 4 of this document.

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

Sensitivity map is not applicable, as the project has already occurred in area and prior to mining a sensitivity map was not required (mining in this area commenced in 1999, during this time, only a rehabilitation programme was required and not an Environmental Impact Assessment). The Spatial planning tools show that the study area mainly occurs in a “CBA” area and a very small portion occurs in an “No Natural” area.
2. **Description of Impact management objectives including management statements**

**Management objective include:**

A *restoration strategy* which strives to restore patches of diverse, ecologically important and conservation worthy patches of vegetation which have been impacted on by the mine, in the remaining disturbed areas.

**Monitoring and review** is an assessment and record of management achievements, a periodic review of the plan, and renewal or revision of the implementation programme. In other words, the management and implementation should continue to incorporate: evolving conditions of the site, adjusted objectives due to site evolution, adapted processes and techniques of implementation of the rehabilitation plan, which should all be recorded in the monitoring and review stage.

The following need to be monitored on the project site:
- Reseeding and propagation of plant cuttings on the bare areas
- Watering of plants in 1st year during the dry periods.
- Erosion control
- Alien invasive vegetation
- Determine the progress of rehabilitation

**Recommendations**
- During rehabilitation of indigenous vegetation, every effort should be made to use seeds and plants from the area to be rehabilitated.
- Rare, endangered and economically important plant populations should be used in rehabilitating the disturbed areas.
- A variety of species should be used to ensure that there is a diversity of species in the rehabilitated area and to introduce similar vegetation to that of the unmined areas.

**Vegetation:** In order to establish a sustainable indigenous vegetation cover it is necessary to:
- Establish pioneer species in the rehabilitation area.
- Establish secondary species, namely trees and herbs which make up the compliment of the natural ecosystem.
- The return of natural vegetation will also encourage the return of animal species in the rehabilitation area.

**Constraints** include:
- The nutrient status of the soil in fynbos vegetation is important for the establishment of vegetation
- Potential problems germinating and growing indigenous species.

**Monitoring and Evaluation:**

Due to rehabilitation being a process that requires a number of years before the area could return to the desired state, it is recommended that the success of the rehabilitation exercise be monitored. A monitoring programme should be put in place, for the next two years. This recommendation is based on:
- To determine if the rehabilitation was a success
- To determine if there is a return of indigenous species in the area
To determine where the rehabilitation is not working and implement other strategies to improve the disturbed area.
To ensure that there is removal of invasive alien species in this area.
Determine erosion potential of the area
General site condition

**2.1 Determination of closure objectives.**
(ensure that the closure objectives are informed by the type of environment described)
The objectives for the closure for the Plettenberg Bay Bentonite mine (Environmental and Social Setting) are:
- To ensure closure complies with the Mineral and Petroleum Resources Development Act 28 of 2002.
- To ensure that the mining footprints are rehabilitated to an acceptable standard, where there is ecosystem functioning and that all environmental and social risks have been reduced and do not pose any threat to the environment post mine-closure.
- To ensure that the goals which were specified in the rehabilitation plan have been met and that the land may have a sustainable use.
- To implement management strategies that will ensure that the negative impacts (risks) associated with the Plettenberg Bay Mine are eliminated or minimized to acceptable standards.
- To leave the area in a manner that is environmentally safe and does not pose any health risks to the neighbouring communities.
- To propose a monitoring programme, that will ensure that strategies that have been proposed in the risk assessment have been implemented and will help determine the progress of rehabilitation. This is important as it will help determine the success of rehabilitation and ensure that the area is left in good condition.

**2.2 Volumes and rate of water use required for the operation**
N/A, as the mine is no longer operational. During the operation of the mine no water was used in the mining process and no effluent was produced due to no processing occurring on the property. Rehabilitation of the area during the dry season will require the area to be watered.

**2.3 Has a water use licence been applied for?**
N/A. Water Use licence is not required, as the mine is no longer operational, and no watercourses occur within 500 m of the project area.
Figure 2.1: Wetlands that occur in the surrounding areas of the mining area (mining area shown in orange).
# 2.4 Impacts to be mitigated in their respective phases

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

<table>
<thead>
<tr>
<th>ACTIVITIES</th>
<th>PHASE</th>
<th>SIZE AND SCALE OF disturbance</th>
<th>MITIGATION MEASURES</th>
<th>COMPLIANCE WITH STANDARDS</th>
<th>TIME PERIOD FOR IMPLEMENTATION</th>
</tr>
</thead>
</table>
| E.g. For Prospecting – drill site, site camp, ablation facility, accommodation, equipment storage, sample storage, site office, access route etc. etc. etc | Post-Closure | 0.5 ha                         | • It is advised that the large alien invasive species may be cut, and herbicide to be applied on the remaining stumps.  
• Herbicide may be applied to the *Acacia saligna* which is coppicing on site.  
• All alien invasive species that have been cut down must be removed from the site and disposed of as waste.  
• Monitoring and Maintenance of the area to ensure that there is control of alien species on site. | Spread of alien invasive species will be restricted. | Clearing of vegetation should commence on the project area. The area should be monitored for alien invasive species. |
| E.g. For Mining – excavations, blasting, stockpiles, discard dumps or dams, loading, hauling and transport, water supply dams and boreholes, accommodation, offices, ablation, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyor etc. etc etc... | Post-Closure | 0.5 ha                         | Vegetation which has been cleared should be removed from the site and disposed of. | Risk of Fire Hazard will be decreased. | This should be done immediately, to remove the risk associated with this impact. Impact should be monitored. |
| The clearing of vegetation on site has could result in the presence of alien invasive species site. | Post-Closure | 0.5 ha                         | It is advised that the large alien invasive species may be cut, and herbicide to be applied on the remaining stumps.  
• Herbicide may be applied to the *Acacia saligna* which is coppicing on site.  
• All alien invasive species that have been cut down must be removed from the site and disposed of as waste.  
• Monitoring and Maintenance of the area to ensure that there is control of alien species on site. | Spread of alien invasive species will be restricted. | Clearing of vegetation should commence on the project area. The area should be monitored for alien invasive species. |
| Alien vegetation is being cut down and left on the site instead of being removed. This standing biomass is a | Post-Closure | 0.5 ha                         | It is advised that the large alien invasive species may be cut, and herbicide to be applied on the remaining stumps.  
• Herbicide may be applied to the *Acacia saligna* which is coppicing on site.  
• All alien invasive species that have been cut down must be removed from the site and disposed of as waste.  
• Monitoring and Maintenance of the area to ensure that there is control of alien species on site. | Spread of alien invasive species will be restricted. | Clearing of vegetation should commence on the project area. The area should be monitored for alien invasive species. |
| Possible fire hazard. | Post - Closure | 0.2 ha | Employ soil erosion control measures, such as protection berms, where necessary to minimize soil erosion;  
- Rehabilitate all slopes and degraded areas before the onset of the rainy season. Use topsoil as much as possible in these areas;  
- Develop procedures to minimize surface water run-off and soil erosion; and  
- Improve soil properties to encourage re-vegetation.  
Area could be re-vegetated with cuttings of indigenous plants from the surrounding area. | Soil erosion will be prevented | This area should be rehabilitated and monitored for two years, after two years an evaluation should be done to determine if there is an improvement in the system and whether the area should be left to spontaneously rehabilitate itself. |
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<thead>
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</thead>
<tbody>
<tr>
<td>Bare areas due to plants not yet being established has facilitated erosion of soil by wind and rain.</td>
<td>Post - Closure</td>
<td>0.2 ha</td>
<td>Soil Health</td>
<td>0.2 ha</td>
<td>Soil erosion will be prevented</td>
</tr>
<tr>
<td>Soil Health</td>
<td>Post - Closure</td>
<td>0.2 ha</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
- Application of topsoil  
- Mulching  
- Area should be reseeded with annual grasses and pioneer plant species that have been found to establish in these soils and in area. Species that can be used from the surrounding area include Chrysanthemoides monilifera, Helichrysum spp., Elytropappus rhinocerotis and Passerina corymbosa |  |  |  |
### 3. Impact Management Outcomes

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

<table>
<thead>
<tr>
<th>ACTIVITIES</th>
<th>POTENTIAL IMPACT</th>
<th>ASPECTS AFFECTED</th>
<th>PHASE</th>
<th>MITIGATION TYPE</th>
<th>STANDARD TO BE ACHIEVED</th>
</tr>
</thead>
<tbody>
<tr>
<td>E.g. excavations, blasting, stockpiles, discard dumps or dams, loading, hauling and transport, water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors etc. etc etc..</td>
<td>(e.g. dust, noise, drainage, surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc etc..)</td>
<td></td>
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</tbody>
</table>
| **Clearing of vegetation** | The clearing of vegetation on site may result in the presence of alien invasive species site. | onsite species composition | Post closure | ● It is advised that the large alien invasive species may be cut, and herbicide to be applied on the remaining stumps.  
● Herbicide may be applied to the *Acacia saligna* which is coppicing on site.  
● All alien invasive species that have been cut down must be removed from the site and disposed of as waste. Monitoring and Maintenance of the area to ensure that there is control of alien species on site. | ● All efforts should be made to remove the alien species on the site  
● Fully eradicating aliens on the site will be difficult or almost impossible. Thus maintain ace of the farm portion will be required |
| **Not removing plants which have been cut** | If Alien vegetation is left on the site (once cut down) This standing biomass is a possible fire hazard. | onsite species composition and soil health | Post closure | Vegetation which has been cleared should be removed from the site and disposed of. | Impact should be avoided |
| **Soil Erosion** | Bare areas due to plants not yet being established has facilitated erosion of soil by Soil Erosion | Post closure | Employ soil erosion control measures, such as protection berms, where necessary to minimize soil erosion;  
Rehabilitate all slopes and degraded areas before the onset of the | Impact is already present on the area, thus after vegetation has been established on the area, disturbance should be |
<table>
<thead>
<tr>
<th>Compromised soil health</th>
<th>Soil Health could have been compromised during the mining activity</th>
<th>Soil Health</th>
<th>Post closure</th>
<th>Impact is already present on the area, thus after vegetation has been established on the area, disturbance should be avoided.</th>
</tr>
</thead>
<tbody>
<tr>
<td>wind and rain.</td>
<td>Rainy; season. Use topsoil as much as possible in these areas;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Develop procedures to minimize surface water run-off and soil erosion; and</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Improve soil properties to encourage re-vegetation.</td>
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</tr>
<tr>
<td></td>
<td>Area could be re-vegetated with cuttings of indigenous plants from the surrounding area.</td>
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<tr>
<td></td>
<td>Avoided.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 4. Impact Management Actions

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

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>POTENTIAL IMPACT</th>
<th>MITIGATION TYPE</th>
<th>TIME PERIOD FOR IMPLEMENTATION</th>
<th>COMPLIANCE WITH STANDARDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clearing of vegetation</td>
<td>The clearing of vegetation on site may result in the presence of alien invasive species site.</td>
<td>Modify through alternative method, Control through noise control, Remedy through rehabilitation</td>
<td>Describe the time period when the measures in the environmental management programme must be implemented. Measures must be implemented when required. With regards to Rehabilitation specifically this must take place at the earliest opportunity. With regards to Rehabilitation therefore state either…</td>
<td>Alien invasive species found on site are either category 1b or 2. These species need to be removed on site according to the Alien and Invasive Species Regulations (published 1 August 2014). The control of alien invasive species in this area will be difficult as there are alien invasive species in the surrounding area.</td>
</tr>
<tr>
<td>Not removing plants which have been cut</td>
<td>If Alien vegetation is left on the site (once cut down) This standing biomass is a possible fire hazard.</td>
<td>Vegetation which has been cleared should be removed from the site and disposed of.</td>
<td>Plant debris must be removed as soon as plants have been cut</td>
<td>-</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------</td>
<td>---</td>
</tr>
</tbody>
</table>
| Soil Erosion                           | Bare areas due to plants not yet being established has facilitated erosion of soil by wind and rain. | Employ soil erosion control measures, such as protection berms, where necessary to minimize soil erosion;  
- Rehabilitate all slopes and degraded areas before the onset of the rainy season. Use topsoil as much as possible in these areas;  
- Develop procedures to minimize surface water run-off and soil erosion; and  
- Improve soil properties to encourage re-vegetation.  
Area could be re-vegetated with cuttings of indigenous plants from the surrounding area. | Upon authorisation from Department of Mineral Resources | - |
| Compromised soil health                | Soil Health could have been compromised during the mining activity  
- Application of topsoil  
- Mulching  
Area should be reseeded with annual grasses and pioneer plant species that have been found to establish in these soils and in area. Species that can be used from the surrounding area include Chrysanthemoides monilifera, Helichrysum spp., Elytropappus rhinocerotis and Passerina corymbosa | Upon authorisation from Department of Mineral Resources | - |
5. Financial Provision

This financial provision represents an estimate based on the quantum calculations found within the DME guidelines (2005) as required in Regulation 54(1) of the MPRDA (2002). In line with requirements by DME, the quantum for closure should be based on market related prices, i.e. closure by a third party, with suitable financial provisions by G&W Base Industrial Minerals.

A cost analysis was carried out for the rehabilitation of the Plettenberg Bay Bentonite mine, to ensure that sufficient funding is available to rehabilitate the area where mining had taken place. This is in terms of the Regulations promulgated in terms of the Minerals Act 50 of 1991.

Determination of the amount of Financial Provision

5.1 Describe the closure objectives and the extent to which they have been aligned to the baseline environment described under the Regulation.

Rehabilitation measures have been designed to meet closure objectives:

The objectives of rehabilitation and closure are:

- To ensure closure complies with the Mineral and Petroleum Resources Development Act 28 of 2002.
- To ensure that the mining footprints are rehabilitated to an acceptable standard, where there is ecosystem functioning and that all environmental and social risks have been reduced and do not pose any threat to the environment post-mine-closure.
- To ensure that the goals which were specified in the rehabilitation plan have been met and that the land may have a sustainable use.
- To implement management strategies that will ensure that the negative impacts (risks) associated with the Plettenberg Bay Mine are eliminated or minimized to acceptable standards.
- To leave the area in a manner that is environmentally safe and does not pose any health risks to the neighbouring communities.

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

Environmental objectives in relation to closure have been consulted with the landowner, Interested and affected parties as well as organs of state. The draft BAR will be made available for public review. Any I&APs will therefore have the opportunity to submit their comments on the BAR which will be incorporated into the Final document for submission.

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

A rehabilitation programme which was authorised in 1997 has been adhered to. Below is the progress of rehabilitation to date.

Defining Rehabilitation

As indicated in Figure 8.1, there is a continuum of options, possibilities and end-points along the path towards restoration. Thus restoration is a continuous process, and it may not always be possible to achieve this goal. These concepts are defined as follows:

- **Restoration**: The return of a damaged ecosystem to its original state.
- **Rehabilitation**: The return of a damaged ecosystem to its original state, taking into consideration that it is questionable if complete restoration will be achieved.
- **Revegetation**: The process of establishing vegetation on the degraded environment.
- **Replacement**: The process where vegetation is established on the degraded environment, but this vegetation differs from pre-mining vegetation. Such an option
would most often result from post-mining conditions being incompatible with the original land-use. An example would be to plant economically or socially important crops instead of the original vegetation due to changed soil properties.

Figure 8.1: Diagrammatical Representation of the rehabilitation options from disturbance to full restoration (adapted from Bradshaw, 1983).

Indigenous Vegetation- Ecosystem Rehabilitation

The general aim of the implementation of a rehabilitation programme is to recreate a natural ecosystem. In this regard, the implementation of the programme has the following progressive steps:

1. Reshape the area
2. Filling of the pit that has been formed due to mining
3. Establish cover crop of pioneer species on the bare areas
4. Establish a self-sustaining ecosystem with a diversity of plants and animals.

Due to the project area still having areas were mining is evident, re-creating a natural ecosystem will involve the replanting of the mined area with pioneer species, species such as (*Chrysanthemoides monilifera*, *Helichrysum* spp. and *Elytropappus rhinocerotis*), will be used to return indigenous species to the disturbed fynbos area. The fundamental hypothesis adopted is that natural self-sustaining ecosystems can be recreated by growing the appropriate selection of many different species.

Success of rehabilitation

Hobbs (2003) states that “we can only measure success if we have some idea of what success looks like, and we have ways of assessing condition and detecting change in conditions”. Success
of a rehabilitation project may thus be determined by how well the original objectives were met.

The objectives for rehabilitation in the Plettenberg Bay bentonite mine are as follows:

- After rehabilitation, run-off water must not cause erosion
- Sufficient contours shall be constructed to prevent soil erosion
- In the event of a hollow area being formed on completion of mining activities a drainage system shall be constructed to ensure sufficient and safe control of the run-off water
- Sides are not sloped too steeply, slope not exceeding 1:3
- Rehabilitation of access roads (which are not required by land owner)
- Rehabilitation must comply with provisions in the rehabilitation programme
- In the rehabilitation plan it was proposed that the area would become grazing land post-mining.

Various strategies were implemented to ensure that the goals of rehabilitation were met. These included the backfilling of overburden, replacing topsoil, and by seeding the bare patches with a mixture of indigenous plants and conifers. An important part in the rehabilitation process is monitoring, this generally allows one to assess the change or trend in one or more resources (Block et al., 2001). Constant monitoring of the rehabilitation project, allows one to determine if there is any improvement and reveals whether there are problems in the restoration programme. Rehabilitation requires on-going monitoring and evaluation of the objectives; this allows one to determine effectiveness of the rehabilitation techniques and management measures used (Hobbs, 2003; Johnson and Tanner, 2005). Thus even though there has been on-going rehabilitation on site, it is important that monitoring is continued on the Plettenberg Bay Mine to ensure that there is progress in rehabilitation and until the area is at a point where it is stable and does not need any additional inputs.

The type of mining and the size of the mine for the Plettenberg Bay Bentonite which has resulted in changes in the landscape, loss of vegetation, changes in the soil profile at a much smaller scale when compared to other mining projects thus allowing for the rehabilitation process to be much simpler and also allowing the progress of rehabilitation to be easily determined.

Table 8-1 provides some evidence of the disturbance which was a result of the mining activity. Table 8-2 provides photographic evidence showing the rehabilitation success achieved thus far, some of the photographs showing the current state (November 2014) of the area which still requires some additional inputs to improve the rehabilitation which has taken place. Plates 8.1 – 8.3 illustrate evidence of the on-going strategies that have been implemented to control alien invasive species.

The mining that has taken place in this area has resulted in changes in the landscape, the removal of vegetation and changes in the properties of the soil which was previously present in the area. The type of mining which was done in this area did not produce toxic waste, thus the possibility of acid mine drainage is not applicable in this site.
Table 8-1: Photographs illustrating the kind of damage that the mining activities had on the environment (e.g. changes in landscape, loss of vegetation)

<table>
<thead>
<tr>
<th>Description</th>
<th>Photo</th>
</tr>
</thead>
<tbody>
<tr>
<td>View looking North, illustrating the excavation of the Bentonite seam.</td>
<td></td>
</tr>
<tr>
<td>Photograph was taken in May 1999.</td>
<td></td>
</tr>
<tr>
<td>View Looking North-West</td>
<td></td>
</tr>
</tbody>
</table>
View Looking South-West
**Table 8-2: Photographic evidence of rehabilitation on the mining area.**

Photograph illustrating grass growing in the area which was disturbed during the mining activity.

Photograph taken in 2013
Rehabilitation site where there is good return of fynbos species.
Photograph taken in November 2014
Illustrating the re-vegetation of grass species on the path/road which was created during mining activity.

Photograph taken in November 2014
Photograph illustrating re-vegetation of the mining area, where there are herbs, grasses, shrubs and tree species. A mixture of natural and alien species was found on site.
Photograph illustrating the pit which has formed due to the mining activity.

Vegetation has established on these slopes but there are bare patches, and some of the plants established are alien species. These need to be cleared to allow the re-growth of indigenous species (pioneer species, annual grass, vegetation from the surrounding area).
Photograph Illustrating the bare areas which were found to occur on the site.
During the final stages of the mining, several alien vegetation eradication programmes were implemented by sub-contractors. The first exercise was carried out from Sept. 2002 until February 2003. Other campaigns occurred from August to September 2003; October 2004; July to December 2007; September 2009 to December 2009 with a final programme from March to May 2014. Plates 8.1 – 8.2 illustrates the strategies that were implemented to control alien invasive species on the site. Plate 8.3 illustrates the coppicing of *Acacia saligna* and the presence of alien invasive species on the site. This indicates that on-going maintenance of the site is still required.

**Plate 8.1:** (A) Photograph illustrating mechanical removal of alien vegetation (B) Spraying of stumps with poison to prevent re-growth.

**Plate 8.2:** Photographs A and B illustrating the before and after the removal of alien invasive species respectively.
Plate 8.3: Evidence of re-vegetation of alien invasive species and the presence of alien invasive species on the previously mined area.

Rehabilitation Monitoring: Rehabilitation requires on-going monitoring and evaluation of the objectives to validate the effectiveness of rehabilitation techniques and management measures. In rehabilitation planning it is important that goals, objectives and success criteria (key performance indicators) are clearly defined. This allows the task to be approached in a systematic way, leaving room for adaptive management as on-going rehabilitation yields results (Hobbs, 2003; Johnson and Tanner, 2005).

Rehabilitation on the mined area has a good cover of shrubs, albeit dominated by few species at present, but it takes some time for a great diversity of species to return. The surrounding unmined area has more species, which are not found in the rehabilitated area but the cover is very similar. There are also a number of alien woody species in the rehabilitation site, Acacia cyclops (Rooikrans) and Acacia saligna (Port Jackson wattle).

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

The main purpose of rehabilitation is to mitigate the negative impacts which were caused by the mining operation. The rehabilitation plan for the Plettenberg Bay Bentonite mine was compiled prior to the mining activities. This plan was created to ensure that all negative impacts due to the mining operation are mitigated. The rehabilitation plan is compatible with the closure objections as it seeks to leave the area in an environmentally safe area which has sustainable end-use. Rehabilitation plan was implemented during the life-span of the mining operation, which has seen parts of the area being rehabilitated.

5.5 Calculate and state the quantum of the financial provision required to manage and rehabilitate the environment in accordance with the applicable guidelines.

The closure costs tabulated below refer only to the Plettenberg Bay Bentonite Mine based on the existing area. The closure cost totals R233 609.00 inclusive of VAT. The rate per hectare for 2 – 3 years of maintenance and aftercare (line item 14) was R700 per ha when the guideline was produced in 2005. Assuming 7.5% increase (inflation) every year this amount has been adjusted to R1342 /ha.
<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Unit</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E=A<em>B</em>C*</th>
</tr>
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<td>Opencast rehabilitation including final voids and ramps</td>
<td>ha</td>
<td>0.2</td>
<td>96700</td>
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<td>9</td>
<td>Rehabilitation of subsided areas</td>
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<td>55600</td>
<td>1</td>
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<td>1342</td>
<td>1</td>
<td>1.1</td>
<td>1 476</td>
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<td>Alien Vegetation Removal</td>
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<td>6890</td>
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<td></td>
<td>137 800</td>
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<td>GRAND TOTAL</td>
</tr>
</tbody>
</table>

Provision for the amount stipulated above (R233 609.00 inclusive of VAT) will have to be made by G&W Base Industrial Minerals (Pty) Ltd, this is to ensure that all possible risks are dealt with on the affected area. The Bank Guarantee of R211 700.00 submitted to DMR in the Western Cape on the 4th of April is sufficient for rehabilitation purposes (excluding widespread alien vegetation removal).

Should the Department of Mineral Resources request alien vegetation to be removed this guarantee would be insufficient as a quote of R 6,890 / ha has been received from a local alien vegetation removal company. Approximately 20 ha of the 61 ha property is fairly heavily infested which would mean that R137 800 would be necessary for this exercise alone. The Bank Guarantee of R211 700.00 is therefore deemed insufficient for the rehabilitation of the mine area. The removal of the alien vegetation would be a fruitless exercise however, as the surrounding area is infested with alien vegetation and as the surrounding landowners do not remove the alien vegetation on their lands, this invasive vegetation will spread to the mine area in the near future.

**5.6 Confirm that the financial provision will be provide as determined.**
A bank guarantee has been provided by the applicant, showing that financial provision has been provided to implement the rehabilitation recommendation provided in the risk assessment and for the removal of alien invasive species on the farm portion.
6. Mechanisms for monitoring compliance with and performance assessment against the environmental management programme and reporting thereon, including

6.1 Monitoring of Impact Management Actions

The monitoring of Impact Management Actions will be conducted as prescribed in terms of regulation 55 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002). Section 38 of the Act is also relevant as far as monitoring of impacts is concerned. This section stipulates that the holder of the prospecting right or permit is required to rehabilitate the land disturbed to its natural state or predetermined condition. Quarterly EMP compliance audits by an Environmental Control Officer (ECO) are required. These reports will inform the annual performance assessment that will be submitted to DMR. Due to mining operation on the site having ceased, EMP compliance audits on the site will be done on a yearly basis to determine if rehabilitation is taking place in the area and that the clearing of alien invasive species has been conducted. Rehabilitation is a long process, thus rehabilitation should only be monitored for the first two years, to ensure that the area is left in a good state.

It is important to note that all environmental damage in the mining area is the responsibility of the permit/rights holder. The monitoring of the environmental risks that have been identified should be monitored to ensure that the area is left in a good state.

6.2 Monitoring and reporting frequency

The following need to be monitored on the project site.

- Reseeding and propagation of plant cuttings on the bare areas
- Watering of plants in 1st year during the dry periods.
- Erosion control
- Alien invasive vegetation
- Determine the progress of rehabilitation

6.3 Responsible persons

An independent ECO should be appointed to serve as an external auditor to ensure that rehabilitation is taking place on site. This is to ensure that the EMPr and other relevant requirement a required by DME are complied with.

6.4 Time period for implementing impact management actions

Due to rehabilitation being a process that requires a number of years before the area could return to the desired state, it is recommended that the success of the rehabilitation exercise be monitored. A monitoring programme should be put in place, for the next two years. This recommendation is based on:

- To determine if the rehabilitation was a success
- To determine if there is a return of indigenous species in the area
- To determine where the rehabilitation is not working and implement other strategies to improve the disturbed area.
- To ensure that there is removal of invasive alien species in this area.
- Determine erosion potential of the area
- General site condition
## 6.5 Mechanisms for monitoring compliance

<table>
<thead>
<tr>
<th>SOURCE ACTIVITY</th>
<th>IMPACTS MONITORING PROGRAMMES</th>
<th>FUNCTIONAL REQUIREMENTS FOR MONITORING</th>
<th>ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)</th>
<th>MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decommissioning activity</td>
<td>Alien invasion on project area</td>
<td>Monitoring will include: - Eco to assess the area after removal.</td>
<td>Applicant will appoint contractor</td>
<td>• Monitoring will be done bi-yearly</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td>• Yearly audit</td>
</tr>
<tr>
<td>Decommissioning activity</td>
<td>Bare areas, open pit, loss of vegetation</td>
<td>Yearly assessment (For two years) to see if there is an improvement in the bare areas</td>
<td>Applicant will appoint contractor</td>
<td>Monitoring will be done bi-yearly</td>
</tr>
<tr>
<td>Decommissioning activity</td>
<td>Standing biomass (alien plants) left on site</td>
<td>Area should be assessed after alien invasive removal, the assessment should state whether all felled trees have been removed on site.</td>
<td>Applicant will appoint contractor</td>
<td>Yearly audit</td>
</tr>
<tr>
<td>Decommissioning activity</td>
<td>Erosion</td>
<td>Yearly assessment (For two years) to see if there is an improvement in the Erosion present on site.</td>
<td>Applicant will appoint contractor</td>
<td>Monitoring will be done bi-yearly</td>
</tr>
<tr>
<td>Decommissioning activity</td>
<td>Soil health</td>
<td>Yearly assessment (For two years) to determine if soil health has improved after the rehabilitation recommendations were implemented.</td>
<td>Applicant will appoint contractor</td>
<td>Monitoring will be done bi-yearly</td>
</tr>
</tbody>
</table>
7. **Indicate the frequency of the submission of the performance assessment / environmental audit report.**

Yearly performance/environmental audits should be compiled for the rehabilitation and removal of alien species on farm portion 77 (a portion of 76)

8. **Environmental Awareness Plan**

The ESO and/or ECO must be conversant with all legislation pertaining to the environment applicable to this contract and must be appropriately trained in environmental management and must possess the skills necessary to impart environmental management skills to all personnel involved in the contract.

The contractor shall ensure that adequate environmental training takes place. All employees shall have been given an induction presentation on environmental awareness. Where possible, the presentation needs to be conducted in the language of the employees. The environmental training should, as a minimum, include the following:

- The importance of conformance with all environmental policies.
- The significant environmental impacts, actual or potential, as a result of their work activities.
- The environmental benefits of improved personal performance.
- Their roles and responsibilities in achieving conformance with the environmental policy and procedures, and with the requirement of G&W Base Industrial Minerals environmental management systems, including emergency preparedness and response requirements.
- The mitigation measures required to be implemented when carrying out their work activities.
- The importance of not littering.
- The need to use water sparingly.
- Details of, and encouragement to, minimise the production of waste and re-use, recover and recycle waste where possible.

Recommended Basic Environmental Education Material is provided

Environment and health awareness training programmes should be targeted at three distinct levels of employment, i.e. the executive, middle management and labour. Environmental awareness training programmes should contain the following information:

- The names, positions and responsibilities of personnel to be trained.
- The framework for appropriate training plans.
- The summarised content of each training course.
- A schedule for the presentation of the training courses.

The Contractor shall ensure that records of all training interventions are kept in accordance with the record keeping and documentation control requirements as set out in this EMP (refer to Sections 5.3.3 and 5.3.4 above). The training records shall verify each of the targeted personnel's training experience. The ECO shall monitor the records and listed and undertake regular follow ups.

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

N/A. Mining operations have ceased on the project area, thus there are no permanent employees, but contractors employed for the rehabilitation and removal of alien invasive will be informed by their employer.
8.2 Manner in which risks will be dealt with in order to avoid pollution or the degradation of the environment.

The following recommendations and guidelines were provided for the risks that were identified during the risk assessment, these are:

Recommendations

- “It is suggested that this area is reshaped and backfilled with soil, sand and gravel and re-vegetated.” To achieve this contractor will have to be appointed to carry out this activity, where the slope adjacent to the pit that was formed will be re-shaped and the material filled into the pit, soil and gravel will have to be bought to add to the pit.
- Topsoil and mulch that will be added once the area has been re-shaped. Local contractors would be able to assist in where topsoil can be purchased.
- In the rehabilitation process the topsoil will contain seeds of pioneer species and species that grow in the area, the mulch and brushwood will be spread onto the disturbed area.
- Monitoring and Active management of the area especially for the first two years is important.

Guidelines for the removal of Alien invasive species

General requirements

- Large trees should be cut with chain-saws or axes and the open stems poisoned to ensure that the plant dies and does not re-sprout (coppice).
- Cuttings must be burnt in an open clearing where the risk of spreading fire is minimal, in order to kill the seeds on the plants.
- Follow up to cleared site must be conducted every two months to remove upcoming seedlings.
- In cases where large scale alien plant removal has been conducted, measures to stabilise the soil from wind and water erosion must be taken. Soils may be mulched and planted with indigenous pioneer species.
- Continued monitoring throughout the life of the project will be required as the risk of alien plant species invasion is never eliminated.

Removal of alien invasive species through various methods

There are a number of possible methods which can be used to control alien invasive species; these include mechanical, chemical and biological control. The sections below outline possible techniques used in mechanical and chemical control methods. Biological control is not a feasible option for this site, and is thus not discussed further. Table 4.2 (below) outlines specific management details for each of the alien invasive species identified on site.

Mechanical control methods

Mechanical methods for alien plant removal may include felling, removing or burning invading alien plants. The following mechanical methods for felling are recommended:

- Hand pulling: Grip the young plant low down and pull out by hand (using gloves).
- Ring barking: Bark is removed to from the bottom of the stem to a height of 0.75-1.0 m to below ground level. Bush knives or hatchets can be used for debarking.
- Frill or Ring-bark: Using an axe or bush knife, angled cuts are made downward into the cambium layer through the bark in a ring; herbicide is applied into the cuts.
- Cut stump treatment: Stems should be cut as low as practical as stipulated on the herbicide label. Chemical herbicides are applied in diesel or water as recommended. Applications in diesel should be to the whole stump and exposed roots and in water to the cut area as recommended on the label.

**Chemical control methods**

Chemical methods for alien plant removal include using a number of approved environmentally safe herbicides, which are applied to the leaves, stems or stumps of alien invader species. The working for water guidelines (2005) provides methods that maybe used to control invasive species using herbicide treatment. According to their guidelines, the foliar spray treatment method may be suitable to use on seedlings, sapling and coppicing species of *Acacia saligna* (Port Jackson) and the frill/Stump method may be suitable to use on stumps of Adult *Acacia mearnsii* (Black Wattle) species.

**8.3 Specific information required by the Competent Authority**

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

Financial provision will be reviewed annually until there is no need for any active rehabilitation on the site.
9. **UNDERTAKING**
   The EAP herewith confirms
   
   a) the correctness of the information provided in the reports ✓ □
   
   b) the inclusion of comments and input from stakeholders and I&APs □
   
   c) the inclusion of inputs and recommendations from the specialist reports where relevant: □ ✓ □
   
   AND
   
   d) that the information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties are correctly reflected herein □ ✓

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**Signature of the environmental assessment practitioner:**

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**Name of Company:**
EOH Coastal & Environmental Services

**Date:**
23 April 2015

-END-
Appendix A

RHODES UNIVERSITY

THIS IS TO CERTIFY THAT

LARA CROUS

WAS THIS DAY AT A CONGREGATION OF THE UNIVERSITY
ADMITTED TO THE DEGREE OF

BACHELOR OF SCIENCE
WITH HONOURS
IN
ENVIRONMENTAL SCIENCE
WITH DISTINCTION

GRAHAMSTOWN
10 APRIL 2010

VICE CHANCELLOR

DEAN OF THE FACULTY OF SCIENCE

RIGHTRAR
Appendix B:
RECOMMENDED BASIC ENVIRONMENTAL EDUCATION MATERIAL for the
alien clearing and rehabilitation of the area.

WHAT IS THE ENVIRONMENT?

• Soil
• Water
• Plants
• People
• Animals
• Air we breathe
• Buildings, cars and houses

WHY MUST WE LOOK AFTER THE ENVIRONMENT?

• It affects us all as well as future generations
• We have a right to a healthy environment
• A contract has been signed
• Disciplinary action (e.g. construction could stop or fines issued)
HOW DO WE LOOK AFTER THE ENVIRONMENT?

- Report problems to your supervisor/foreman
- Team work
- Follow the rules in the EMP

WORKING AREAS

Workers & equipment must stay inside the site boundaries at all times
ANIMALS

• Do not injure or kill any animals on the site
• Ask your supervisor or Contract’s Manager to remove animals found on site

TREES AND FLOWERS

• Do not damage or cut down any trees or plants without permission
• Do not pick flowers
SMOKING AND FIRE

• Put cigarette butts in a rubbish bin
• Do not smoke near gas, paints or petrol
• Do not light any fires without permission
• Know the positions of fire fighting equipment
• Report all fires
• Do not burn rubbish or vegetation without permission

PETROL, OIL AND DIESEL

• Work with petrol, oil & diesel in marked areas
• Report any petrol, oil & diesel leaks or spills to your supervisor
• Use a drip tray under vehicles & machinery
• Empty drip trays after rain & throw away where instructed
DUST

Try to avoid producing dust –
Use water to make ground & soil wet

---

NOISE

• Do not make loud noises around the site, especially near schools and homes
• Report or repair noisy vehicles
TOILETS

- Use the toilets provided
- Report full or leaking toilets

EATING

- Only eat in demarcated eating areas
- Never eat near a river or stream
- Put packaging & leftover food into rubbish bins
RUBBISH

- Do not litter - put all rubbish (especially cement bags) into the bins provided
- Report full bins to your supervisor
- The responsible person should empty bins regularly

TRUCKS AND DRIVING

- Always keep to the speed limit
- Drivers - check & report leaks and vehicles that belch smoke
- Ensure loads are secure & do not spill
FINES AND PENALTIES

- Spot fines of between KS1000 and KS25000
- Your company may be fined
- Removal from site
- Construction may be stopped

PROBLEMS - WHAT TO DO!

- Report any breaks, floods, fires, leaks and injuries to your supervisor
- Ask questions!