mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

NAME OF APPLICANT: Department of Agriculture, Land Reform and Rural Development

REFERENCE NUMBER:

ENVIRONMENTAL MANAGEMENT PLAN

SUBMITTED
IN TERMS OF SECTION 39 AND OF REGULATION 52 OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002,
(ACT NO. 28 OF 2002) (the Act)

CONTENTS

STANDARD DIRECTIVE

Applicants for prospecting rights or mining permits, are herewith, in terms of the provisions of Section 29 (a) and in terms of section 39 (5) of the Mineral and Petroleum Resources Development Act, directed to submit an Environmental Management Plan strictly in accordance with the subject headings herein, and to compile the content according to all the sub items to the said subject headings referred to in the guideline published on the Departments website, within 60 days of notification by the Regional Manager of the acceptance of such application. This document comprises the standard format provided by the Department in terms of Regulation 52 (2), and the standard environmental management plan which was in use prior to the year 2011, will no longer be accepted.

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IDENTIFICATION OF THE APPLICATION IN RESPECT OF WHICH THE ENVIRONMENTAL MANAGEMENT PLAN IS SUBMITTED.

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1. REGULATION 52 (2): Description of the environment likely to be affected by the proposed prospecting or mining operation

1.1. The environment on site relative to the environment in the surrounding area.

The proposed borrow pit is located in the Curriescamp area. It is a new site that has an existing hauling road that is less than 10m wide. The area surrounding the borrow pit is used for agricultural purposes. There are houses ± 60meters from the proposed borrow pit. There are no signs of protected animal and plant species around the borrow pit. There is a concrete circle that is situated at the borrow pit site. The area surrounding the borrow pit has been impacted to a large extent by anthropogenic activities, including grazing and cultivation activities.

See Photographic history attached hereto as **Appendix A**.

1.2. The specific environmental features on the site applied for which may require protection, remediation, management or avoidance.

The site is disturbed due to human activities. There are sensitive areas around the borrow pit and therefore the mining activities should be restricted to the permit area.

1.3. Map showing the spatial locality of all environmental, cultural/heritage and current land use features identified on site.

The location of the borrow pit is indicated in **Appendix B** (Topographical Map) showing the current land use of the proposed site and surrounding environment.

During the palaeontological and archaeological impact assessment, no fatal flaws or sensitive areas in terms of cultural and heritage artefacts were found on site.

The four external co-ordinates of the proposed site are as follows:

Table 1:The Four External Co-ordinates of the BP2 are as follows:

Point	Y	X
A	**1853904.951**	**3322002.355**
B	**1853873.301**	**3321969.543**
C	**1853883.261**	**3322015.728**
D	**1853858.182**	**3321977.808**

1.4. Confirmation that the description of the environment has been compiled with the participation of the community, the landowner and interested and affected parties.

The landowners were involved during the identification of the borrow pit and the proposed extension to be used for the repairing and upgrading of the irrigation scheme. During the integrated public participation process, there was no need to hold a public meeting because no one registered as interested and affected parties and the neighbouring community is more than 1km away.

2. REGULATION 52 (2) (b): Assessment of the potential impacts of the proposed mining operation on the environment, socio-economic conditions and cultural heritage.

2.1. Description of the proposed mining operation.

2.1.1. The main mining operation activities

The mining operation entails:

- Clearance of the vegetation on the mining area.
- Grading less than 8 metres wide access road in order to haul material from the borrow pit to the construction site.
- Topsoil will be stripped and stockpiled (to a level of one (1) meter high) on the perimeter of the borrow pit – within the boundaries of the allocated area – for use during the rehabilitation process. As the area is already disturbed, only a small amount of topsoil will have to be removed.
- Excavation will accomplished by using excavators while trucks will be hauling borrowed material to the construction site.
- No blasting will take place
- No batching plant will be established on site.
- Water tanks or carts will be used for dust control.

The average mining depth of the quarry would be ± 3 m and the total area to be excavated would be less than 1 hectares.

The equipment to be used includes the following:

1. Front end Loader
2. Tipper Truck
3. Water Cart
4. Excavator
5. Grader
6. TLB’s

2.1.2. Plan of the main activities with dimensions (borrow pit plan with dimensions)

The topsoil will be stockpiled on the perimeter of the borrow pit, within the boundaries of the allocated area. As the areas are already disturbed, only a small amount of topsoil will have to be removed. Thereafter the mining activities will include excavation, loading of borrowed material to the construction site.

Thereafter shaping, trimming and rehabilitation will take place.

The borrow pit plan indicating the area to be mined is attached as **Appendix C**.

2.1.3. Description of construction, operational, and decommissioning phases.

It is envisaged that the operational phase of the mining period will be 18 months. During the decommissioning phase rehabilitation and monitoring will take place for a period of 12 months.

Construction phase

The Construction phase will consist of establishing a boundary demarcating the mining area, setting up of a temporary ablution facility (i.e. chemical toilet), the upgrading of the access road in order to carry the haul trucks to and from the site (i.e. grading the road), clearing of vegetation on the proposed site and stockpiling of topsoil.

Operational phase

The operational phase will consist of the excavation of the material and hauling away of materials by trucks to the construction site and the storing of material onsite.

Decommissioning phase

During the decommissioning phase, excavations will be filled and the mined area reshaped in such a way as to ensure that the drainage pattern alteration is kept minimal, where after the topsoil and vegetation will be replaced/spread over the disturbed soil or area to a thickness of at least 30 cm deep. Re-vegetation of the area will also take place. The area shall be scarified and fertilized if necessary to allow vegetation to establish rapidly. The site shall be seeded with a local or adapted indigenous seed mix in order to spread the locally or regionally occurring flora.

The depositing of waste in the excavations will not be permitted.

Temporary structures, i.e. temporary ablution facility, earth moving machinery, etc. will be removed from the mining area.

Access road and all compacted areas will be ripped to prepare the surface for plant growth. The decommissioning phase will entail revegetation and landscaping.

2.1.4. Listed activities (in terms of the NEMA EIA regulations)

No activities associated with the mining operation will trigger other listed activities under NEMA EIA regulations.

2.2. Identification of potential impacts

2.2.1. Potential impacts per activity and listed activities.

Activity	Potential Impact
Vegetation clearance	Damage to flora Invasion of alien species Soil erosion Soil compaction
Movement of construction vehicles	Damage to flora Invasion of alien species Soil compaction Soil contamination Habitat disturbance Dust generation Noise generation
Earthworks/Excavations	Noise generation Dust generation Damage to flora Habitat disturbance
Disposal of waste	Littering Pollution

2.2.2. Potential cumulative impacts.

No cumulative impacts identified.

2.2.3. Potential impact on heritage resources

According to the archaeological (including heritage and cultural) report, the potential impact of the borrow pit developments on the heritage resources of the sites are considered to be of minor significance. Mitigation measures will only be needed in case of the discovery of human graves.

The scatters of stone artefacts identified are located on the higher parts of the terrain and will not be affected by the proposed mining activities. Therefore, it is anticipated that there will be no impacts upon any heritage or cultural resources.

2.2.4. Potential impacts on communities, individuals or competing land uses in close proximity.

There are houses that are situated ±60 meters from the proposed mining area. People living within these 60 meters of the proposed mining area, will be highly affected by the mining processes i.e. dust, noise and other mining related activities.

The area surrounding the proposed borrow pit is currently used for agricultural activities, however, due to the size of the borrow pit and the limited extend of mining, the farms will be able to continue working, therefore the impact is insignificant and short lived. On completion of the mining activity, the area will be rehabilitated to the same agricultural potential as before mining.

2.2.5. Confirmation that the list of potential impacts has been compiled with the participation of the landowner and interested and affected parties

The landowner, Blocuso Trust and other identified I&APs has been consulted during the integrated public participation process. DWA raised an issue about the water use license for the proposed low water bridge-Basic Assessment Process.

No issues were raised by the landowner and other identified I&APs. Consequently no input was obtained from the I&APs during the identification of potential impacts.

2.2.6. Confirmation of specialist report appended.

The Ecological Impact Assessment Report is attached as **Appendix D1** and the Archaeological and Professional Statement from Palaeontologist regarding exemption from phase 1 Palaeontological Impact Assessment Reports are attached hereto as **Appendix D2** and **3** respectively.

3. REGULATION 52 (2) (c): Summary of the assessment of the significance of the potential impacts and the proposed mitigation measures to minimise adverse impacts.

3.1. Assessment of the significance of the potential impacts

3.1.1. Criteria of assigning significance to potential impacts

The Significance Assessment Methodology was used to assess the significance of identified Environmental Impacts, the methodology is outlined below.

Significance is the product of probability and severity. Probability describes the possibility of the impact actually occurring, and is rated as follows:

- Improbable: Low possibility of impact to occur either because of design or historic experience.
  Rating = 2
- Probable: Distinct possibility that impact will occur.
  Rating = 3
- Highly probable: Most likely that impact will occur.
  Rating = 4
- Definite: Impact will definitely occur
  Rating = 5

The severity rating is calculated from the factors given to intensity and duration. Intensity and duration factors are awarded to each impact, as described below.

The Intensity factor is awarded to each impact according to the following method:

- Low intensity: nature and/or man made functions not affected (minor process damage or personnel injury may have occurred).
  Factor 1
- Medium intensity: environment affected but natural and/or man made functions and processes continue (Some process damage or personnel injury may have occurred).
  Factor 2
- High intensity: environment affected to the extent that natural and/or man made functions are altered to the extent that it will temporarily or permanently cease (Major process damage or personnel injury may have occurred).
  Factor 4

Duration is assessed and a factor awarded in accordance with the following:

- Short term: <1 to 5 years - Factor 2
- Medium term: 5 to 15 years - Factor 3
- Long term: impact will only cease after the operational life of the activity, either because of natural process or by human intervention - Factor 4.

- Permanent: mitigation, either by natural process or by human intervention, will not occur in such a way or in such a time span that the impact can be considered transient - Factor 4.

The severity rating is obtained from calculating a severity factor, and comparing the severity factor to the rating in the table below.

For example: The Severity factor = Intensity factor x Duration factor
2 x 3 = 6

A Severity factor of six (6) equals a Severity Rating of Medium severity (Rating 3) as per *Table 2* below:

Table 2: Severity and Severity Factor Ratings

Severity Rating	Severity Factor
Low Severity (Rating 2)	Calculated values 2 to 4
Medium Severity (Rating 3)	Calculated values 5 to 8
High Severity (Rating 4)	Calculated values 9 to 12
Very High severity (Rating 5)	Calculated values 13 to 16
Severity factors below 3 indicate no impact	

A Significance Rating is calculated by multiplying the Severity Rating with the Probability Rating.

The significance rating should influence the development project as described below:

◊ Low significance (calculated Significance Rating 4 to 6)
- ❖ Positive impact and negative impacts of low significance should have no influence on the proposed development project.

◊ Medium significance (calculated Significance Rating ≥ 7 to 12)
- ❖ Positive impact:
  Should weigh towards a decision to continue
- ❖ Negative impact:
  Should be mitigated before project can be approved.

◊ High significance (calculated Significance Rating ≥ 13 to 18
- ❖ Positive impact:
  Should weigh towards a decision to continue, should be enhanced in final design.
- ❖ Negative impact:

Should weigh towards a decision to terminate proposal, or mitigation should be performed to reduce significance to at least low significance rating.

◊ Very High significance (calculated Significance Rating ≥ 19 to 25)

❖ Positive impact:
Continue definite.

❖ Negative impact:
If mitigation cannot be effectively implemented, proposal should be terminated.

3.1.2. Potential impact of each main activity in each phase, and corresponding significance assessment

Aspect					
Vegetation Clearance					
Possible Impact					
Permanent loss of vegetation and habitat.					
During which phase will the impact occur?					
Construction phase/Operational phase/Decommissioning phase					
Probability	**Intensity**	**Duration**	**Severity Factor**	**Severity Rating**	**Significance Rating**
5	4	2	Medium	3	High
Is the impact Positive/Negative			**Is mitigation Possible?** Yes/No/Not applicable		**Impact after mitigation:** Low

Describe mitigation option(s):

- Site clearing will be restricted to what is absolutely necessary for the efficient mining of the road building materials.
- The mining area must be well demarcated and no construction activities must be allowed outside of this demarcated footprint.
- Only vegetation within the mining area must be removed.
- A permit should be obtained from the Northern Cape Department of Forestry if the protected trees need to be removed.
- During construction, workers must be limited to mining areas under construction and access to the surrounding undeveloped areas must be prohibited to avoid damage to the flora.
- Stockpiled topsoil must be continually cleared of any weed growth to prevent the invasion of alien plants.
- Picking of wild flowers is prohibited.

Aspect
Fauna
Possible Impact
Disturbance of small fauna occurring in the area.
During which phase will the impact occur?
Construction phase/Operational phase/Decommissioning phase

Probability	Intensity	Duration	Severity Factor	Severity Rating	Significance Rating
4	2	2	Low	2	Medium
Is the impact Positive/Negative			**Is mitigation Possible?** Yes/No/Not applicable		**Impact after mitigation:** Low
Describe mitigation option(s): • Construction phase may disturb wildlife. Species inhabiting the site currently can relocate to the adjacent undeveloped areas. • Intentional killing of animals will be prohibited. • The construction area must be fenced for safety of livestock grazing around. • No interference with livestock will be allowed.					

Aspect					
Topsoil					
Possible Impact					
Topsoil degradation and soil compaction					
During which phase will the impact occur?					
Construction phase/Operational phase/Decommissioning phase					
Probability	**Intensity**	**Duration**	**Severity Factor**	**Severity Rating**	**Significance Rating**
5	4	4	Very High	5	Very High
Is the impact Positive/Negative			**Is mitigation Possible?** Yes/No/Not applicable		**Impact after mitigation:** Low
• Topsoil and subsoil must not be mixed. • There should be a designated area for stockpiling. • Topsoil must be reused where possible to rehabilitate disturbed areas.					

Aspect					
Traffic					
Possible Impact					
Disturbance of traffic flow on the access road.					
During which phase will the impact occur?					
Construction phase/Operational phase/Decommissioning phase					
Probability	**Intensity**	**Duration**	**Severity Factor**	**Severity Rating**	**Significance Rating**
5	2	2	Low	2	Medium
Is the impact Positive/Negative			**Is mitigation Possible?** Yes/No/Not applicable		**Impact after mitigation:** Low
Describe mitigation option(s): • Construction routes must be clearly defined. • Access of construction and material delivery should be strictly controlled, especially during wet conditions to avoid compaction and damage to topsoil structure. • Positioning of entry and exit points to ensure as little impact as possible on traffic flow.					

- If temporary access roads will be required, they must be rehabilitated.
- Traffic control measures (i.e. flagmen, traffic calming measures) must be adopted to prevent accidents at the crossing.

Aspect					
Dust Generation					
Possible Impact					
Dust generation which will affect quality of the air and reduce visibility, which might affect neighbouring road users and people who stays near the site.					
During which phase will the impact occur?					
Construction phase/Operational phase/Decommissioning phase					
Probability	**Intensity**	**Duration**	**Severity Factor**	**Severity Rating**	**Significance Rating**
4	2	2	Low	2	Medium
Is the impact Positive/Negative			**Is mitigation Possible?** Yes/No/Not applicable		**Impact after mitigation:** Low
Describe mitigation option(s): • Excavations and other clearing activities may only take place during agreed working hours (e.g. between 8:00 to 16:00) to limit dust after working hours. • Occasional wetting of all exposed soil surface with water sprinklers when necessary/ after every 3 hours to reduce dust. • Speed limits must be enforced in all areas, to limit the levels of dust pollution. • Retention of vegetation where possible will reduce dust travel.					

Aspect					
Waste management					
Possible Impact					
Generating and disposal of waste					
During which phase will the impact occur?					
Construction phase/Operational phase/Decommissioning phase					
Probability	**Intensity**	**Duration**	**Severity Factor**	**Severity Rating**	**Significance Rating**
4	1	2	2	Low	Medium
Is the impact Positive/Negative			**Is mitigation Possible?** Yes/No/Not applicable		**Impact after mitigation:** Low
Describe mitigation option(s): • No illegal dumping or storage site should be established on site without a waste management license. • Storage containers or bins should be made available on site and clearly be labelled. • Hazardous waste should not be mixed with general waste. • Waste should be collected daily or when full and transported to the nearest registered landfill site by the registered service provider. • Burning of waste is not allowed at the site.					

Aspect					
Noise pollution					
Possible Impact					
Noise generated from excavations and movement of hauling vehicles.					
During which phase will the impact occur?					
Construction phase/Operational phase/Decommissioning phase					
Probability	**Intensity**	**Duration**	**Severity Factor**	**Severity Rating**	**Significance Rating**
5	1	2	Low	2	Medium
Is the impact Positive/Negative			**Is mitigation Possible?** Yes/No/Not applicable		**Impact after mitigation:** Low
Describe mitigation option(s): • Construction must be restricted to normal working hours. • If possible; noisy operations must be combined so that they occur at the same time. • Noise level must be kept within acceptable limits in order to reduce disturbance to the workers and residential area in close proximity to the development. • Noise from the labourers must be controlled. • All construction equipment should be in a good working condition in order to reduce possible noise pollution.					

Aspect					
Pollution					
Possible Impact					
Oil spillage and leakage from earthmoving/hauling vehicles causing soil, surface- and ground water pollution.					
During which phase will the impact occur?					
Construction phase/Operational phase/Decommissioning phase					
Probability	**Intensity**	**Duration**	**Severity Factor**	**Severity Rating**	**Significance Rating**
3	1	2	Low	2	Low
Is the impact Positive/Negative			**Is mitigation Possible?** Yes/No/Not applicable		**Impact after mitigation:** Low
Describe mitigation option(s): • All machinery and vehicles should be regularly inspected/ serviced prior to use in order to ensure that it is in proper working condition; in order to limit gaseous emissions and oil spillage. • Contaminated soil must be removed from site immediately after pollution has occurred.					

Aspect
Health and safety issues
Possible Impact
Impact on the health of the employees due to the construction activities.
During which phase will the impact occur?
Construction phase/Operational phase/Decommissioning phase

Probability	Intensity	Duration	Severity Factor	Severity Rating	Significance Rating
3	1	2	Low	6	Low
Is the impact Positive/Negative			**Is mitigation Possible?** Yes/No/Not applicable		**Impact after mitigation:** Low
Describe mitigation option(s): • Storage area must be designated, demarcated and fenced. • Suitable warning signs must be placed at the entrance of the site. • Workers should be thoroughly trained in using potentially dangerous equipment. • First aid facilities must be available on site all times. • Protective gear (e.g. ear plugs and masks) must be made available to all construction staff. • All speed limits must adhere to.					

Aspect					
Erosion					
Possible Impact					
Soil erosion					
During which phase will the impact occur?					
Construction phase/Operational phase/Decommissioning phase					
Probability	**Intensity**	**Duration**	**Severity Factor**	**Severity Rating**	**Significance Rating**
4	4	4	Very high	5	Very High
Is the impact Positive/Negative			**Is mitigation Possible?** Yes/No/Not applicable		**Impact after mitigation:** Low
Describe mitigation option(s): • Vegetation clearance should be phased to ensure that the minimum area of soil is exposed to erosion. • Retention of vegetation where possible to avoid soil erosion • Rehabilitation, by means re-vegetating, of the mining area will ensure that soil erosion does not occur.					

3.1.3. Assessment of potential cumulative impacts.

Aspect					
Topography/Landscape deformation					
Possible Impact					
Disturbance of the topography due to excavations which haven't been rehabilitated.					
During which phase will the impact occur?					
Construction phase/Operational phase/Decommissioning phase					
Probability	**Intensity**	**Duration**	**Severity Factor**	**Severity Rating**	**Significance Rating**
3	2	4	Medium	3	Medium
Is the impact Positive/Negative			**Is mitigation Possible?** Yes/No/Not applicable		**Impact after mitigation:** Low

Describe mitigation option(s):

- Rehabilitation, by means of landscaping, of the impacted area after mining has discontinued, will ensure that the impact is mitigated.

3.2. Proposed mitigation measures to minimise adverse impacts.

3.2.1. List of actions, activities, or processes that have sufficiently significant impacts to require mitigation.

- Exceeding of speed limits.
- Disobeying traffic rules.
- Clearing vegetation outside the designated mining area.
- Stockpiling of topsoil.
- Mixing of topsoil with subsoil and overburden.
- Unattended open fires.
- Burning of waste material.
- Unnecessary restriction/obstruction of water flow.
- Noise generation.
- Use of unroadworthy earth moving- and haul vehicles.
- Littering.
- Dust generation

3.2.2. Concomitant list of appropriate technical or management options

- Exceeding of speed limits.
    - Adherence to 40 kilometre speed limit
- Disobeying traffic rules.
    - Suspension of the guilty party.
- Clearing vegetation outside the designated mining area.
    - Demarcating the mining area.
- Stockpiling of topsoil.
    - Designated site should be chosen and it shouldn't obstruct traffic or movement of construction vehicles.
    - Keeping the stockpiled topsoil weed free.
- Mixing of topsoil with subsoil and overburden.
    - Topsoil and subsoil shouldn't be mixed.
- Unattended open fires.
    - Containers for making fire should be provided and ash should be disposed at the landfill site.
- Burning of waste material.
    - Refuse bin should be emptied daily or when full. Anyone who burns waste should be reported to the supervisor.
- Unnecessary restriction/obstruction of water flow.
    - Choosing designated sites for stockpiling.
- Noise generation.

    - Work should be within normal working time.
- Use of unroadworthy earth moving- and haul vehicles.
    - Regular inspection and maintenance of construction vehicles.
- Littering.
    - Provision of refuse bins with lids.
    - Collecting litter on a daily basis if necessary.
- Dust generation.
    - Work should be within normal working time.
    - Occasional wetting of all exposed soil surface with water sprinklers when necessary/ after every 3 hours to reduce dust.

3.2.3. Review the significance of the identified impacts

Although the significance rating per Significance Assessment Methodology outlined in **Section 3.1.1** above of identified impacts seem to range between medium and very high, the impact would be minimised to a greater extent if the mitigation measures provided are adhered to.

The significance ratings of identified actions that would harm the environment are indicated below.

- Exceeding of speed limits. – medium significance rating
- Disobeying traffic rules. – medium significance rating
- Clearing vegetation outside the designated mining area. – high significance rating
- Stockpiling of topsoil. – very high significance rating
- Mixing of topsoil with subsoil and overburden. – very high significance rating
- Unattended open fires. – medium significance rating
- Burning of waste material. – medium significance rating
- Unnecessary restriction/obstruction of water flow. – very high significance rating
- Noise generation. – medium significance rating
- Use of unroadworthy earth moving- and haul vehicles. – medium significance rating
- Littering. – medium significance rating
- Dust generation. – medium significance rating

4. REGULATION 52 (2) (d): Financial provision. The applicant is required **to-**

4.1. Plans for quantum calculation purposes.

The Google Satellite Imagery indicating proposed borrow pit is attached hereto as **Appendix E** and the extend of the area to be mined is indicated in the Topographical Map attached hereto as **Appendix C**.

4.2. Alignment of rehabilitation with the closure objectives

Rehabilitation would occur after cessation of mining operations, i.e. at least within a month. The first phase of rehabilitation will include dismantling and removal of all mining equipment and waste materials, and the ripping of compacted areas. If the access road won't be used after mining, the surface crust should be ripped to enable vegetation growth.

The second phase of rehabilitation will include the landscaping/shaping and backfilling of the impacted area in order to restore the natural water flow of the area and preparing the surface to form a suitable medium for plant growth for further rehabilitation. Weeds should be removed before the spreading of topsoil.

The third phase of rehabilitation will include the re-vegetation of the area in order to restore it to have a good farming potential. This includes re-seeding, planting of trees and watering the area to ensure that the vegetation becomes established. Soil erosion protection measures should be implemented, especially on the slopes and local drainage pattern should be restored.

After rehabilitation, no vehicles movement should be allowed or removal of material. The area should be fenced off to enable successful plant succession and grazing should be prohibited until vegetation is established.

This aligns with the closure objectives for the proposed activity, to leave the area as close to its natural state as possible i.e. a natural area that is able to support the same grazing intensity prior to mining and to enhance plant communities in the area. Rehabilitation should be done in such a way that ponding is minimized.

4.3. Quantum calculations.

(Provide a calculation of the quantum of the financial provision required to manage and rehabilitate the environment, in accordance with the guideline prescribed in terms of regulation54 (1) in respect of each of the phases referred to).

Table 3: Quantum Calculations

Activity	**Costs**
Demarcation of Mining Area	R 1,333-33
Removal of temporary structures	R600-00
Reshaping of the Slopes	R 8,000-00
Spreading of Topsoil	R 1,333-33
Hydroseeding	R 1.000-00
Supervision	R 500-00
Monitoring and After care	R 500-00
TOTAL	**R 13,266-66**

4.4. Undertaking to provide financial provision

Should the mining permit be granted, the project consultant/contractor will be liable for payment of the financial provision and the convenient payment method will be discussed with the case officer.

5. REGULATION 52 (2) (e): Planned monitoring and performance assessment of the environmental management plan.

5.1. List of identified impacts requiring monitoring programmes.

1. Demarcation of mining area, i.e. fence and a lockable gate
2. Access road and accessibility (access control)
3. Removal of topsoil and subsoil
4. Checking of excavations
5. Air quality
6. Soil quality
7. Fire control
8. Littering
9. Noise control
10. Health & Safety
11. Disturbance of the topography
12. Fauna
13. Flora
14. Soil erosion
15. Loading and hauling of material
16. Control of alien plants (weeds) on the mining area
17. Maintenance of construction vehicles and equipment

5.2. Functional requirements for monitoring programmes.

The monitoring must take place on a daily basis (keeping within demarcated area, topsoil removal, mining depth, dust control, noise level, loading and hauling) and weekly basis (vegetation clearance, stockpiles, weed clearing) for the duration of the construction, operational and decommissioning phases of the proposed quarry by the internal designated environmental control officer (DEO).

Monthly environmental audits must be performed by an external Environmental Control Officer (ECO) and on completion of the rehabilitation; a Performance Assessment Report should be compiled.

A dedicated file for environmental compliance monitoring should be in place and monthly audit reports must be included for both the DEO and ECO.

In addition to the ECO and DEO, there should be a designated borrow pit manager who is available on site for the duration of the mining activities. The borrow pit manager will be responsible for the management of the

borrow pit thus ensuring that proper environmental management is attained. The manager will be responsible for the following:

1. Upkeep and maintenance of the site, i.e. fence, gate, access road, general housekeeping and construction vehicles and equipment.
2. Operation management, in co-ordination with the RE, ECO and DEO for dust, noise, fire and alien species control.
3. To ensure that the mining area is secure, and access to unauthorised vehicles, people and/or livestock is prohibited.

5.3. Roles and responsibilities for the execution of monitoring programmes.

It is the responsibility of the applicant to ensure that the monitoring of the proposed borrow pit takes place during the life of the project and rehabilitation at the completion of the mining operation, including and aftercare programme for a period of 2 years.

The resident engineer is responsible for the appointment of an external ECO.

The contractor is responsible for the appointment of the DEO and the borrow pit manager.

5.4. Committed time frames for monitoring and reporting.

Monitoring by the DEO and management by borrow pit manager would be daily and weekly reporting whilst the ECO would be responsible for the monthly audits and reporting. The DEO and ECO will have to compile monthly reports to be used during compilation of the Performance Assessment Report on completion of the mining operation.

6. REGULATION 52 (2) (f): Closure and environmental objectives.

6.1. Rehabilitation plan

The application is not for prospecting, it is for mining of a borrow pit. However, the extent of the area to be excavated is indicated in the Borrow Pit Layout Plan attached hereto as **Appendix C**. A rehabilitation plan should be compiled by the contractor and approved by the ECO, DEO and RE.

6.2. Closure objectives and their extent of alignment to the pre-mining environment.

The area where the proposed quarry will be located is currently utilized for agriculture and it is therefore planned that the site will be rehabilitated to such an extent that it will be possible to use the area for agricultural purposes once more. As a result it is imperative that the mining activities are restricted to the permitted area, altered topography are rounded to blend with the surrounding topography, plant succession isn't hindered by uncontrolled weed growth by enforcing after care.

6.3. Confirmation of consultation

During the public meeting held, it was decided that the closure objective be in line with the current land use, i.e. farming potential or natural area.

7. REGULATION 52 (2) (g): Record of the public participation and the results thereof

7.1. Identification of interested and affected parties.

The Interested and Affected Parties that were identified during are as follows:

- Community of Curriescamp
- Kai!Garib Local Municipality under ZF Mgcawu District Municipality
- Councillor Desery Fienies of ward 8 in Soverby
- Northern Cape Department of Water affairs
- Blocuso Trust (land owner)

During the integrated public participation process, only the Department of Water Affairs has registered as an interested and affected party for the proposed construction of a low water bridge.

7.2. The details of the engagement process.

7.2.1. Description of the information provided to the community, landowners, and interested and affected parties.

The contents of the advert included the following information:

1. The applicable legislation in which this application is submitted under, i.e. Minerals and Petroleum Resources Development Act (Act 28 of 2002).
2. The applicant,
3. The location of the proposed borrow pit
4. The time frames for submitting comments; and
5. Details of the EAP.

No public meeting was held for this project.

7.2.2. List of which parties identified in 7.1 above that were in fact consulted, and which were not consulted.

All the parties identified in Section 7.1 above were consulted, see **Appendix F**.

7.2.3. List of views raised by consulted parties regarding the existing cultural, socio-economic or biophysical environment.

No biophysical, socio-economic and cultural issues were raised during the process.

7.2.4. List of views raised by consulted parties on how their existing cultural, socio-economic or biophysical environment potentially will be impacted on by the proposed prospecting or mining operation.

The issues and/or comments, which came forth during the public participation process, are as follows.

Department of Water Affairs:

The DWA indicated that the proposed activity, i.e. proposed construction of a low water bridge could trigger a Section 21 (c) and (i) Water Use License Application as the Orange River and its tributaries are very strategically important.

7.2.5. Other concerns raised by the aforesaid parties.

No further issues were raised by the aforesaid parties.

7.2.6. Confirmation that minutes and records of the consultations are appended.

There are no minutes taken for the process, as there was no need to hold a public meeting.

7.2.7. Information regarding objections received.

No objections came forth from any of the interested or affected party that was informed of the project.

7.3. The manner in which the issues raised were addressed.

In response to the issues raised by DWA, the Environmental Consultants contacted the Water Use License Department regarding the proposed

activity and were advised to apply for a water use license for the proposed construction of low water bridge. The Consultants will submit the application in terms of Section 21 (c) and (i), to the Northern Cape Department of Water Affairs (Kimberley Office).

8. SECTION 39 (3) (c) of the Act: Environmental awareness plan.

8.1. Employee communication process

Toolbox talks will be given at the commencement of the activity and every Monday thereafter, to the employees by the designated environmental officer during the construction and operational phases, informing them of the potential environmental risk associated with the activities they are about to undertake and highlight the significant role they play in minimising environmental impacts. The toolbox talks should be offered in a language that would be suitable for the employees.

8.2. Description of solutions to risks

The employees must react according to the emergency process programme that will be available onsite at all time. Therefore it is imperative that an environmental emergency preparedness plan be compiled by the contractor and approved by DEO, ECO and RE prior to the mining activity addressing issues of pollution, environmental degradation, safety and health.

8.3. Environmental awareness training.

Toolbox talks will be given at the commencement of the activity and every Monday thereafter, to the employees by the designated environmental officer during the construction and operational phases, informing them of the emergency procedure that must be followed in case of any emergency situation developing and explaining the remediation measures that will be followed after such an emergency situation. This will enable the employees to identify environmental issues associated with their activities and adopt best environmental practise to minimise the environmental impact thus improving environmental performance.

Awareness training would be based on promoting environmental protection and would include but not limited to health and safety issues, waste management, dealing with accidental leakages, traffic management, fire management, dust control, inspection of construction vehicles, maintenance of stockpiles, protection of fauna and flora, and adherence to the South African Environmental Legislation.

9. SECTION 39 (4) (a) (iii) of the Act: Capacity to rehabilitate and manage negative impacts on the environment.

9.1. The annual amount required to manage and rehabilitate the environment.

The main activities for rehabilitation are backfilling, shaping of the slopes, alien vegetation control, and introduction of indigenous species, soil erosion control measure and stormwater planning.

Rehabilitation will commence within a month after cessation of the mining operations. It will take approximately a month to rehabilitate with 12 months after care and monthly monitoring.

9.2. Confirmation that the stated amount correctly reflected in the Prospecting Work Programme as required.

n/a

10. REGULATION 52 (2) (h): Undertaking to execute the environmental management plan.

Herewith I, the person whose name and identity number is stated below, confirm that I am the person authorised to act as representative of the applicant in terms of the resolution submitted with the application, and confirm that the above report comprises EIA and EMP compiled in accordance with the guideline on the Departments official website and the directive in terms of sections 29 and 39 (5) in that regard, and the applicant undertakes to execute the Environmental management plan as proposed.	
Full Names and Surname	Gerrit Stemmet
Identity Number	590328 5006 086

-END-

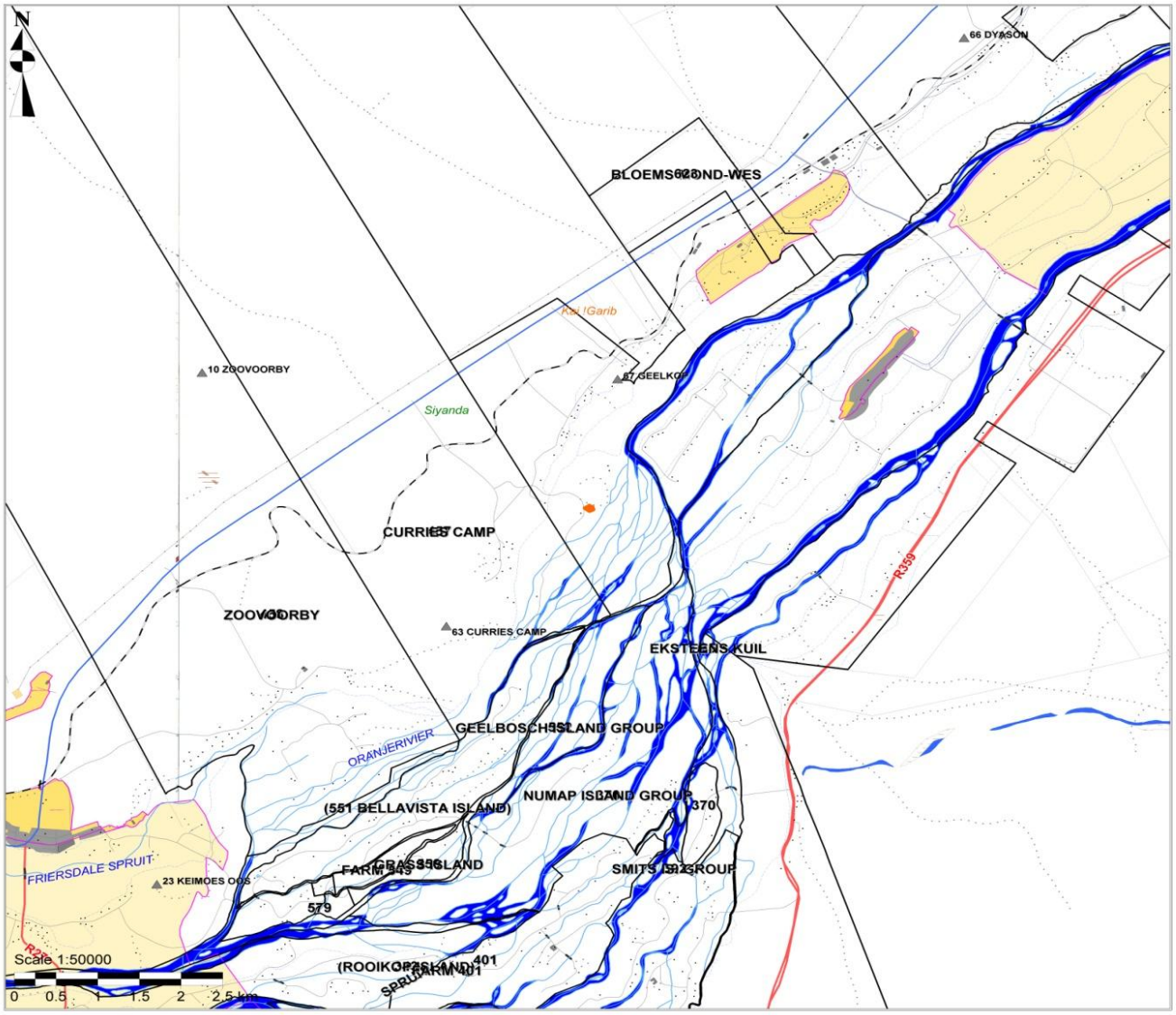
APPENDIX A

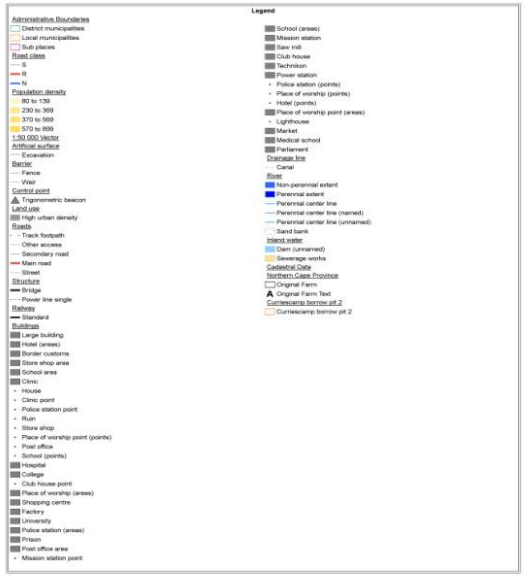
Photographic History

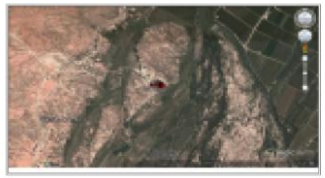
APPENDIX B

Topographical Map

Curries Camp BP2 Topographical Map







Designed by:

Jano Louw
0735550780

NSVT CONSULTANTS

APPENDIX C

Borrow Pit Plan

BORROWPIT CO-ORDINATES		
NR.	Y	X
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2	1853873.301	3321969.543
3	1853883.261	3322015.728
4	1853858.182	3321977.808

10 Jun 2008 A3 A

X PRELIMINARY
INFO ONLY
FOR TENDER
FOR CONSTRUCTION
AS-BUILT

agriculture, land reform & rural development

bvi CONSULTING ENGINEERS
Uitgibo
NORTHERN CAPE

BLOCUSO

CURRIES CAMP
BORROWPIT 2
0.32 ha

ENGINEER-IN-CHARGE	REG. NO.	DATE
SCALE N.T.S.	DRAWN	W. Kruger
DESIGNED PEN 3	CHECKED	M. Pretorius
PLAN NUMBER	REVISION NO.	ISSUE DATE
U10382C-153-02	B	31 Mar 2013

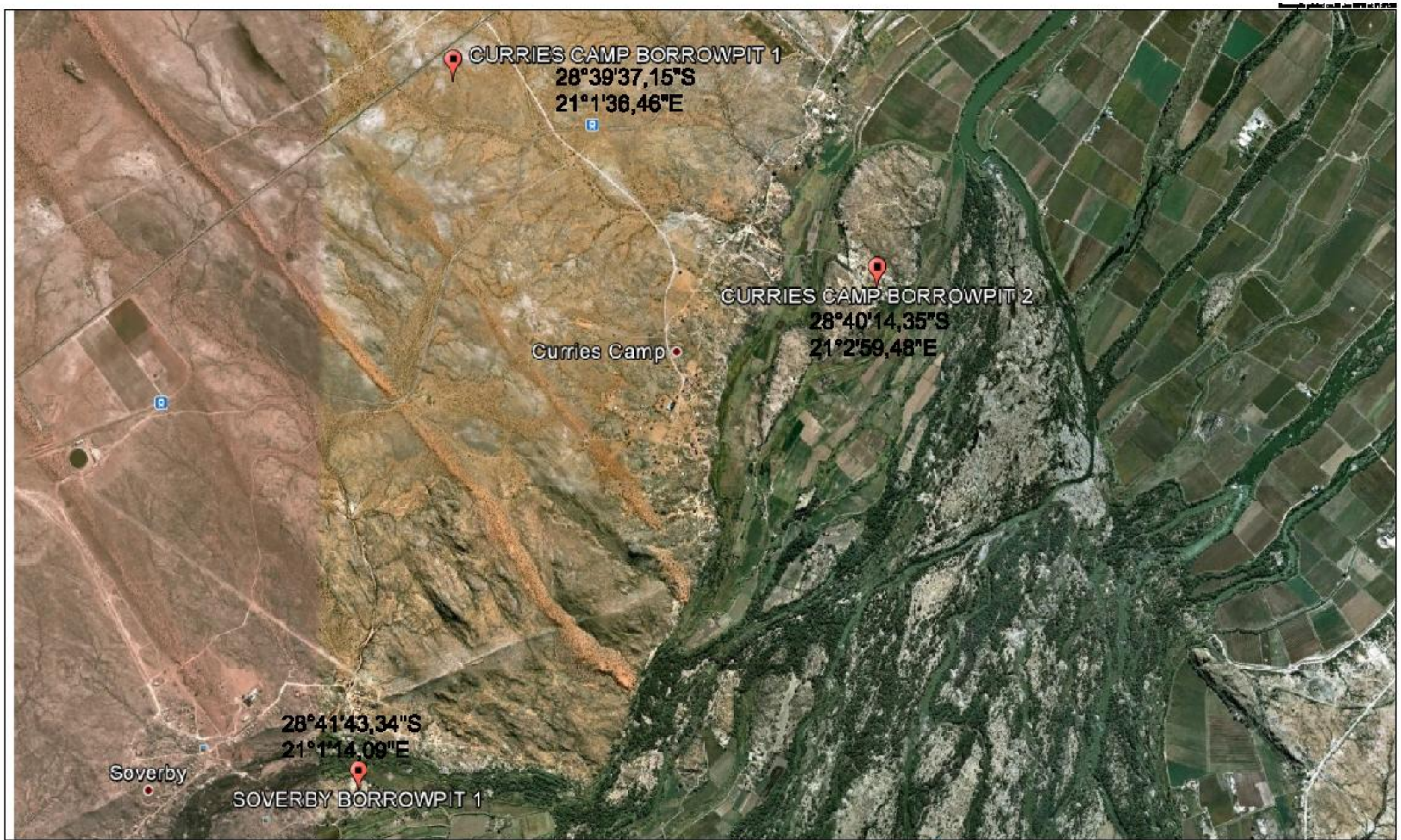
APPENDIX D

Specialists Reports

Appendix D1: Ecological Impact Assessment Report
Appendix D2: Archaeological Impact Assessment Report
Appendix D3: Professional Statement from a Palaeontologist regarding exemption from Phase 1 Palaeontological Impact Assessment

APPENDIX E

Google Satellite Imagery



10 Jun 2009	A3	A
X	PRELIMINARY	
	INFO ONLY	
	FOR TENDER	
	FOR CONSTRUCTION	
	AS-BUILT	

agriculture, land reform & rural development

NORTHERN CAPE

CONSULTING ENGINEERS

BLOCUSO

LAYOUT OF BORROWPITS CURRIES CAMP & SOVERBY

U10382C-160-01

A

APPENDIX F

Report on Consultation