

**PROPOSED LOW COST HOUSING
DEVELOPMENT, NOENIEPUT,
NORTHERN CAPE**

DEA Ref No.: NC/BA/SIY/MIE/NOE/2012



**DRAFT BASIC ASSESSMENT REPORT
MARCH 2015**

**PROPOSED LOW COST HOUSING
DEVELOPMENT, NOENIEPUT,
NORTHERN CAPE
DEA REF.: NC/BA/SIY/MIE/NOE/2012**

**PREPARED FOR:
MIER MUNICIPALITY**

**P.O. Box 178
Mier
8811
Tel: 054 5310928/9**

**PREPARED BY:
ENVIROAFRICA CC**

**P.O. Box 5367
Helderberg
7135
Tel: 021 – 851 1616
Fax: 086 – 512 0154**

EXECUTIVE SUMMARY

Proposed Activity

It is proposed that Portion 18 of Farm Witkop 350, is to be rezoned and subdivided for the development of serviced low cost housing, including associated infrastructure

The property (Portion 18 of Farm Witkop 350) is owned by the Mier Municipality (Applicant). No formal land use management system has been adopted by the Mier Municipality at this stage, however, the farm on which the current town (Noenieput) is located is zoned as "Agricultural 1")

The proposed development will be approximately 11ha and 107 new development stands are proposed in response to the growing housing need in the municipality.

Environmental Requirements

The National Environmental Management Act (NEMA, Act 107 of 1998), as amended in 2010, makes provision for the identification and assessment of activities that are potentially detrimental to the environment and which require authorisation from the competent authority based on the findings of an Environmental Assessment. NEMA is a national act, which is enforced by the Department of Environmental Affairs (DEA). In the Northern Cape, these powers are delegated to the Department of Environmental & Nature Conservation (DE&NC). According to the regulations of Section 24(5) of NEMA, authorisation is required for the following:

Activities as Applied for i.t.o. NEMA Act 1998 (Act No.107 of 1998), as amended in the **Environmental Impact Assessment Regulations, 2010:**

Indicate the number and date of the relevant notice:	Activity No (s) (in terms of the relevant or notice):	Describe each listed activity:
National Environmental Management Act, 1998 (Act No. 107 of 1998). Government Notice R544 Activity (Listing Notice 1).	11	<p>The construction of:</p> <ul style="list-style-type: none"> (i) Canals; (ii) Channels; (iii) Bridges; (iv) Dams; (v) Weirs; (vi) Bulk storm water outlet structures; (vii) Marinas; (viii) Jetties exceeding 50 square meters in size; (ix) Slipways exceeding 50 square meters in size; (x) Buildings exceeding 50 square meters in size; or (xi) Infrastructure or structures covering 50 square meters or more; <p>Where such construction occurs within a watercourse or within 32 meters of a watercourse, measured from</p>

		the edge of a watercourse, excluding where such construction will occur behind the development setback line.
National Environmental Management Act, 1998 (Act No. 107 of 1998). Government Notice R544 Activity (Listing Notice 1).	18	The infilling or depositing of any material of more the 5 cubic meters into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock from (i) a watercourse; (ii) the sea; (iii) the seashore; (iv) the littoral active zone, an estuary or a distance of 100 meters inland of the high-water mark of the sea or an estuary, whichever distance is greater – but excluding where such infilling, depositing, dredging, excavation, removal or moving (i) is for maintenance purposes undertaken in accordance with a management plan agreed to by the relevant environmental authority; or (ii) occurs behind the development setback line.
National Environmental Management Act, 1998 (Act No. 107 of 1998). Government Notice R544 Activity (Listing Notice 1).	22	The construction of a road, outside urban areas, (i) With a reserve wider than 13,5 meters or, (ii) Where no reserve exists where the road is wider than 8 meters, or (iii) For which an environmental authorization was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Notice 545 of 2010.
National Environmental Management Act, 1998 (Act No. 107 of 1998). Government Notice R544 Activity (Listing Notice 1).	23	The transformation of undeveloped, vacant or derelict land to – (i) Residential, retail, commercial, recreational, industrial or institutional use, inside an urban area, and where the total area to be transformed is 5 hectares or more, but less than 20 hectares, or (ii) Residential, retail, commercial, recreational, industrial or institutional use, outside an urban area and where the total area to be transformed is bigger than 1 hectare but less than 20 hectares; - Except where such transformation takes place (i) For linear activities; and (ii) For purposes of agricultural/afforestation, in which case Activity 16 of Notice No. R. 545 applies.
National	13	The clearance of an area of 1 hectare or more of

<p>Environmental Management Act, 1998 (Act No. 107 of 1998).</p> <p>Government Notice R546 Activity (Listing Notice 3)</p>		<p>vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation, except where such removal of vegetation is required for:</p> <p>(1) the undertaking of a process or activity included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) in which case the activity is regarded to be excluded from this list;</p> <p>(2) the undertaking of a linear activity falling below the thresholds mentioned in Listing 1 in terms of GN R.544 of 2010.</p>
----------------------------------------------------------------------------------------------------------------------------	--	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Please Note: The regulations have since changed, end 2014, (No. R. 982 – NEMA ACT 107 of 1988, as amended in the **EIA Regulations 2014**), the triggered activities as listed according to the new regulations can be found in the table below:

<p><u>Listed activity as described in No. R. 982 - NEMA ACT 107 of 1988, as amended in the EIA Regulations 2014</u></p>
<p><u>Listing Notice 1 (No.R983), Activity 12:</u></p> <p>The development of;</p> <ul style="list-style-type: none"> (i) canals exceeding 100 square metres in size; (ii) channels exceeding 100 square metres in size; (iii) bridges exceeding 100 square metres in size; (iv) dams, where the dam, including infrastructure and water surface area, exceeds 100 square metres in size; (v) weirs, where the weir, including infrastructure and water surface area, exceeds 100 square metres in size; (vi) bulk storm water outlet structures exceeding 100 square metres in size; (vii) marinas exceeding 100 square metres in size; (viii) jetties exceeding 100 square metres in size; (ix) slipways exceeding 100 square metres in size; (x) buildings exceeding 100 square metres in size; (xi) boardwalks exceeding 100 square metres in size; or (xii) infrastructure or structures with a physical footprint of 100 square metres or more; <p>where such development occurs;</p> <ul style="list-style-type: none"> (a) within a watercourse; (b) in front of a development setback; or (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse; <p>Excluding:</p> <ul style="list-style-type: none"> (aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour; (bb) where such development activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies;

<p>(cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies;</p> <p>(dd) where such development occurs within an urban area; or</p> <p>(ee) where such development occurs within existing roads or road reserves.</p>
<p><u>Listing Notice 1 (No.R983), Activity 19:</u></p> <p>The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from;</p> <p>(i) a watercourse;</p> <p>(ii) the seashore; or</p> <p>(iii) the littoral active zone, an estuary or a distance of 100 metres inland of the high-water mark of the sea or an estuary, whichever distance is the greater but excluding where such infilling, depositing, dredging, excavation, removal or moving;</p> <p>(a) will occur behind a development setback;</p> <p>(b) is for maintenance purposes undertaken in accordance with a maintenance management plan; or</p> <p>(c) falls within the ambit of activity 21 in this Notice, in which case that activity applies.</p>
<p><u>Listing Notice 1 (No.R983), Activity 24:</u></p> <p>The development of;</p> <p>(i) a road for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Government Notice 545 of 2010; or</p> <p>(ii) a road with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 metres;</p> <p>but excluding;</p> <p>(a) roads which are identified and included in activity 27 in Listing Notice 2 of 2014; or</p> <p>(b) roads where the entire road falls within an urban area.</p>
<p><u>Listing Notice 1 (No.R983), Activity 27:</u></p> <p>The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for;</p> <p>(i) the undertaking of a linear activity; or</p> <p>(ii) maintenance purposes undertaken in accordance with a maintenance management plan.</p>
<p><u>Listing Notice 1 (No.R983), Activity 28:</u></p> <p>Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture or afforestation on or after 01 April 1998 and where such development:</p> <p>(i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or</p> <p>(ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare;</p> <p>excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.</p>

Listing Notice 3 (No.R985), Activity 12:

The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of vegetation is required for maintenance purposes undertaken in accordance with a maintenance

Northern Cape

- I. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;
- II. Within critical biodiversity areas identified in bioregional plans;
- III. Within the littoral active zone or 100 metres inland from high water mark of the sea or an estuary, whichever distance is the greater, excluding where such removal will occur behind the development setback line on erven in urban areas.
- IV. On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning management plan.

The department is requested to please advise whether the 2010 or the 2014 NEMA regulations will apply, as well as to the applicability of the activities to the chosen regulations.

Need and Desirability

The municipality has indicated that there is a pressing need for houses, especially low cost houses, as well as serviced plots within all of the communities within the Mier Municipal Area. This is reflected by the housing backlog contained in the 2009/10 version of the Mier IDP (BVi, 2011). The Mier Municipality residential project, are proposing the development of a number of low cost housing at the towns of Rietfontein, Groot Mier, Askham, Welkom, Loubos and Noenieput to alleviate some of the housing problems of the Municipality.

Noenieput is a very small town located the Northern Cape (Mier Local Municipality) in a region with low population densities. The town, which is predominantly residential does, supports other central functions such as places of worship and educational facilities to support the local community and its surroundings. Noenieput is located on the Portion 18 of the Farm Witkop No. 350, Noenieput (Mier Municipality), and is owned by the Mier Municipality. The town is situated in the western section of the Mier Municipality just east of the Namibian border, approximately 170 km north-north-west of Upington. The proposed new development site will be located to the east of the town and just north of the Noenieput Police station. No formal land use management system has been adopted by the Mier Municipality at this stage and the land use rights on the property may be described as being undetermined. The Mier Municipality aim to rezone and subdivide the proposed site, for the establishment of new residential erven in relief of the growing housing need in the area.

The specific location has been chosen for the following reasons:

1. It is located on Municipal owned land.
2. The specific location was chosen by the Municipality and local town planners in order to try and integrate the new Ervin with the rest of Noenieput.
3. It is suitably placed in terms of services.

Conclusion

According to Heritage Impact Assessment (**Appendix D**), no archaeological sites were found during a foot survey of the proposed site. or other prehistoric resources were found during a foot survey of the proposed site.

However, class B, generally protected lithic (Stone Tools) and a total of four graves were identified.

Stone tools form a strong background signature across the property. Acheulian, MSA and LSA tools were located. Four graves or burials were located on the property.

The burials may have a high local significance and are awarded a field rating of Generally Protected A. The site should be mitigated before destruction.

The range and number of stone tools found on the property suggest that the site has a generally Medium significance that can be further mitigated by collection sample through a controlled surface pickup (CSP) of the cultural and other remains. CSP the sampled will be analysed and a report sent to the developers and SAHRA. SAHRA should then issue a permit allowing the destruction of the site.

The graves have been identified by the planners and provision for them has been made in the site development plans. These will be located within the area rezoned as Public Open Space.

According to the Biodiversity Assessment (**Appendix D**), significant vegetation identified includes three listed protected species that were encountered within the proposed site. These include the *Acacia erioloba*, *Boscia albitrunca* and *Acacia haematoxylon*.

It is likely that the proposed project will have an impact protected species. The impact is thus rated as medium-low (which can be further reduced with mitigation).

Considering all the information, it is not envisaged that this proposed development will have a significant negative impact on the environment. The expected positive socio-economic impacts, including temporary jobs created during the construction phase, should outweigh the negative impacts

It is therefore recommended that this application be authorised with the necessary conditions of approval as described throughout this BAR.

**Northern Cape Province
DEPARTMENT OF
ENVIRONMENT & NATURE
CONSERVATION**



**Porofensi Ya Kapa Bokone
LEFAPHA LA TIKOLOGO LE
TSHOMARELO YA TLHAGO**

BASIC ASSESSMENT REPORT

PROPOSED LOW COST HOUSING DEVELOPMENT, NOENIEPUT, MIER MUNICIPALITY, NORTHERN CAPE

Project applicant:	Mier Municipality		
Business reg. no./ID. no.:	N/A		
Contact person:	Mr J Willemse		
Postal address:	P.O. Box 178, Mier, 8811		
Telephone:	054 531 0019	Cell:	
E-mail:	miermun@lantic.net	Fax:	054 531 0019

Prepared by:

Environmental Assessment Practitioner/Firm:	EnviroAfrica CC		
Business reg. no./ID. no.:	CK 97 46008/23		
Contact person:	Clinton Geyser/Bernard de Witt		
Postal address:	P.O. Box. 5367, Helderberg, 7135		
Telephone:	021 851 1616	Cell:	
E-mail:	Clinton@enviroafrica.co.za	Fax:	086 512 0154

(For official use only)

File Reference Number:

Application Number:

Date Received:

BASIC ASSESSMENT REPORT

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

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2010 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. The report must be typed within the spaces provided in the form. The size of the spaces provided are not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
3. Where applicable **tick** the boxes that are applicable or **black out** the boxes that are not applicable in the report.
4. An incomplete report may be returned to the applicant for revision.
5. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
6. This report must be handed in at offices of the relevant competent authority as determined by each authority.
7. No faxed or e-mailed reports will be accepted.
8. The report must be compiled by an independent environmental assessment practitioner.
9. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
10. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?
 If YES, please complete form XX for each specialist thus appointed:
 Any specialist reports must be contained in Appendix D.

YES

1. ACTIVITY DESCRIPTION

Describe the activity, which is being applied for, in detail:

The National Environmental Management Act (NEMA, Act 107 of 1998), as amended in 2010, makes provision for the identification and assessment of activities that are potentially detrimental to the environment and which require authorisation from the competent authority based on the findings of an Environmental Assessment. NEMA is a national act, which is enforced by the Department of Environmental Affairs (DEA). In the Northern Cape, these powers are delegated to the Department of Environmental & Nature Conservation (DE&NC). According to the regulations of Section 24(5) of NEMA, authorisation is required for the following:

Activities as Applied for i.t.o. NEMA Act 1998 (Act No.107 of 1998), as amended in the **Environmental Impact Assessment Regulations, 2010**:

Indicate the number and date of the relevant notice:	Activity No (s) (in terms of the relevant or notice):	Describe each listed activity:
National Environmental Management Act, 1998 (Act No. 107 of 1998). Government Notice R544 Activity (Listing Notice 1).	11	<p>The construction of:</p> <ul style="list-style-type: none"> (i) Canals; (ii) Channels; (iii) Bridges; (iv) Dams; (v) Weirs; (vi) Bulk storm water outlet structures; (vii) Marinas; (viii) Jetties exceeding 50 square meters in size; (ix) Slipways exceeding 50 square meters in size; (x) Buildings exceeding 50 square meters in size; or (xi) Infrastructure or structures covering 50 square meters or more; <p>Where such construction occurs within a watercourse or within 32 meters of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.</p>
National Environmental Management Act, 1998 (Act No. 107 of 1998). Government Notice R544 Activity (Listing Notice 1).	18	<p>The infilling or depositing of any material of more the 5 cubic meters into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock from</p> <ul style="list-style-type: none"> (i) a watercourse; (ii) the sea; (iii) the seashore; (iv) the littoral active zone, an estuary or a distance of 100 meters inland of the high-water mark of the sea or an estuary, whichever distance is greater – <p>but excluding where such infilling, depositing, dredging, excavation, removal or moving</p> <ul style="list-style-type: none"> (i) is for maintenance purposes undertaken in accordance with a management plan agreed to by the relevant environmental authority; or (ii) occurs behind the development setback line.
National Environmental Management Act, 1998 (Act No. 107 of 1998). Government Notice R544	22	<p>The construction of a road, outside urban areas,</p> <ul style="list-style-type: none"> (i) With a reserve wider than 13,5 meters or, (ii) Where no reserve exists where the road is wider than 8 meters, or

BASIC ASSESSMENT REPORT

Activity (Listing Notice 1).		(iii) For which an environmental authorization was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Notice 545 of 2010.
National Environmental Management Act, 1998 (Act No. 107 of 1998). Government Notice R544 Activity (Listing Notice 1).	23	The transformation of undeveloped, vacant or derelict land to – (i) Residential, retail, commercial, recreational, industrial or institutional use, inside an urban area, and where the total area to be transformed is 5 hectares or more, but less than 20 hectares, or (ii) Residential, retail, commercial, recreational, industrial or institutional use, outside an urban area and where the total area to be transformed is bigger than 1 hectare but less than 20 hectares; - Except where such transformation takes place (i) For linear activities; and (ii) For purposes of agricultural/afforestation, in which case Activity 16 of Notice No. R. 545 applies.
National Environmental Management Act, 1998 (Act No. 107 of 1998). Government Notice R546 Activity (Listing Notice 3)	13	The clearance of an area of 1 hectare or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation , except where such removal of vegetation is required for: (1) the undertaking of a process or activity included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) in which case the activity is regarded to be excluded from this list; (2) the undertaking of a linear activity falling below the thresholds mentioned in Listing 1 in terms of GN R.544 of 2010.

Please Note: The regulations have since changed, end 2014, (No. R. 982 – NEMA ACT 107 of 1988, as amended in the **EIA Regulations 2014**), the triggered activities as listed according to the new regulations can be found in the table below:

<u>Listed activity as described in No. R. 982 - NEMA ACT 107 of 1988, as amended in the EIA Regulations 2014</u>
<p><u>Listing Notice 1 (No.R983), Activity 12:</u></p> <p>The development of;</p> <p>(i) canals exceeding 100 square metres in size; (ii) channels exceeding 100 square metres in size; (iii) bridges exceeding 100 square metres in size; (iv) dams, where the dam, including infrastructure and water surface area, exceeds 100 square metres in size; (v) weirs, where the weir, including infrastructure and water surface area, exceeds 100 square metres in size; (vi) bulk storm water outlet structures exceeding 100 square metres in size; (vii) marinas exceeding 100 square metres in size; (viii) jetties exceeding 100 square metres in size; (ix) slipways exceeding 100 square metres in size; (x) buildings exceeding 100 square metres in size; (xi) boardwalks exceeding 100 square metres in size; or (xii) infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs; (a) within a watercourse; (b) in front of a development setback; or (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse;</p> <p>Excluding:</p> <p>(aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour; (bb) where such development activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies; (cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case</p>

BASIC ASSESSMENT REPORT

<p>that activity applies; (dd) where such development occurs within an urban area; or (ee) where such development occurs within existing roads or road reserves.</p> <p><u>Listing Notice 1 (No.R983), Activity 19:</u></p> <p>The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from:</p> <p>(i) a watercourse; (ii) the seashore; or (iii) the littoral active zone, an estuary or a distance of 100 metres inland of the high-water mark of the sea or an estuary, whichever distance is the greater but excluding where such infilling, depositing, dredging, excavation, removal or moving;</p> <p style="padding-left: 40px;">(a) will occur behind a development setback; (b) is for maintenance purposes undertaken in accordance with a maintenance management plan; or (c) falls within the ambit of activity 21 in this Notice, in which case that activity applies.</p>	
<p><u>Listing Notice 1 (No.R983), Activity 24:</u></p> <p>The development of;</p> <p>(i) a road for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Government Notice 545 of 2010; or (ii) a road with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 metres; but excluding;</p> <p style="padding-left: 40px;">(a) roads which are identified and included in activity 27 in Listing Notice 2 of 2014; or (b) roads where the entire road falls within an urban area.</p>	
<p><u>Listing Notice 1 (No.R983), Activity 27:</u></p> <p>The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for;</p> <p>(i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.</p>	
<p><u>Listing Notice 1 (No.R983), Activity 28:</u></p> <p>Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture or afforestation on or after 01 April 1998 and where such development:</p> <p style="padding-left: 40px;">(i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or (ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare; excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.</p>	
<p><u>Listing Notice 3 (No.R985), Activity 12:</u></p> <p>The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of vegetation is required for maintenance purposes undertaken in accordance with a maintenance</p> <p>Northern Cape</p> <ol style="list-style-type: none"> I. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004; II. Within critical biodiversity areas identified in bioregional plans; III. Within the littoral active zone or 100 metres inland from high water mark of the sea or an estuary, whichever distance is the greater, excluding where such removal will occur behind the development setback line on erven in urban areas. IV. On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning management plan. 	

The department is requested to please advise whether the 2010 or the 2014 NEMA regulations will apply, as well as to the applicability of the activities to the chosen regulations.

Project overview

It is proposed that Portion 18 of Farm Witkop 350, is to be rezoned and subdivided for the development of serviced low cost housing, including associated infrastructure

The property (Portion 18 of Farm Witkop 350) is owned by the Mier Municipality (Applicant). No formal land use management system has been adopted by the Mier Municipality at this stage, however, the farm on which the current town (Noenieput) is located is zoned as "Agricultural 1")

The proposed development will be approximately 11ha and 107 new development stands are proposed; in response to the growing housing need in the municipality.

Need & Desirability

The municipality has indicated that there is a pressing need for houses, especially low cost houses, as well as serviced plots within all of the communities within the Mier Municipal Area. This is reflected by the housing backlog contained in the 2009/10 version of the Mier IDP (BVI, 2011). The Mier Municipality residential project, are proposing the development of a number of low cost housing at the towns of Rietfontein, Groot Mier, Askham, Welkom, Loubos and Noenieput to alleviate some of the housing problems of the Municipality.

Noenieput is a very small town located the Northern Cape (Mier Local Municipality) in a region with low population densities. The town, which is predominantly residential does, supports other central functions such as places of worship and educational facilities to support the local community and its surroundings. Noenieput is located on the Portion 18 of the Farm Witkop No. 350, Noenieput (Mier Municipality), and is owned by the Mier Municipality. The town is situated in the western section of the Mier Municipality just east of the Namibian border, approximately 170 km north-north-west of Upington. The proposed new development site will be located to the east of the town and just north of the Noenieput Police station. No formal land use management system has been adopted by the Mier Municipality at this stage and the land use rights on the property may be described as being undetermined. The Mier Municipality plan to rezone and subdivide the proposed site, in order to establish new residential Ervin in response to the growing housing need in the municipality.

The specific location has been chosen for the following reasons:

1. It is located on Municipal owned land.
2. The specific location was chosen by the Municipality and local town planners in order to try and integrate the new Ervin with the rest of Noenieput.
3. It is suitably placed in terms of services.



Figure 1: Aerial view of the site. The proposed site is indicated by the green polygon.

Civil and Electrical Services

A report is being compiled by the contracted engineers regarding the associated infrastructure for the required civil and electrical services.

Land Uses

The proposed new development site will be located to the east of the town and just north of the Noenieput Police station. No formal land use management system has been adopted by the Mier Municipality at this stage and the land use rights on the property may be described as being undetermined.

The proposed development includes the following land uses (**Appendix D1**):

- *Residential Zone I*

The SR1 zone provides for predominantly single-family dwelling houses and additional use rights in low- to medium density residential neighborhoods, whether these incorporate small or large erven. Limited employment and additional accommodation opportunities are possible as primary or consent uses, provided that the impacts of such uses do not adversely affect the surrounding residential environment. The primary use will be for dwelling houses (detached building containing only one dwelling unit). One hundred and six (106) land units created will be given this zoning with the objective being residential opportunity in Noenieput.

- *Institutional Zone II*

The CO2 zone provides for a full range of institutional and community needs, which can be of a local or regional scale, and includes health and welfare as well as religious and educational services. The primary use is a House of Worship (a church, synagogue, mosque, temple, chapel or any other place for practising religion and includes any building in connection therewith, but does not include a funeral parlour with related chapel. One (1) unit of this zoning

will be provided for within the proposed development. The unit will be 714m² in size, representing 0.9% of the total development.

- *Open Space Zone I*

The OS1 zone provides for the conservation of environmental resources, although cultural heritage resources may also be included. Provision is made for limited, low-impact uses associated with conservation, such as environmental education, associated infrastructure and facilities for tourists and visitors with the approval of Council. Three (3) unit of this zoning will be provided for within the proposed development.

- *Open Space Zone II*

The OS2 zone provides for active and passive recreational areas on public land, as well as protection of landscape and heritage areas including woodlands, ridges, watercourses, wetlands and the coastline. It is important to recognize the interests of the general public for access to and preservation of public open space Three (3) unit of this zoning will be provided for within the proposed development.

- *Transport Zone II*

The TR2 Zone provides for public streets and roads, whether constructed or still to be constructed, as well as premises for the public parking of operable motor vehicles. Such parking may be provided in buildings or open parking areas, with or without the payment of a fee, in order to address the need for off-site parking. On-site parking for a permitted activity in any zone is considered to be an associated use and do not represent a separate use category that requires separate zoning or approval. Primary use will be Public Road (any road or street for public use or any land intended for such purposes). One (1) unit of this zoning will be provided for within the proposed development, constituting the internal road network of the proposed development.

Please refer to **Appendix A** for the Locality Maps Site Plans and **Appendix C** for the Layout designs.

Specialist Studies

A biodiversity and botanical scan was conducted to identify significant environmental features.

The proposed housing project location is situated within the Nama Karoo Biome (Bushman land). All of these properties are used mainly for livestock grazing and or game farming. No intensive farming has been observed. It is expected that natural fauna and avi-fauna may still be present, although limited or impacted as a result of the urban activities of the nearby town. Very little game is expected to be encountered (none was observed). Although the site is still covered by natural vegetation, the vegetation shows signs of degradation. A portion of this specific area was levelled at some stage and presumably used for sporting fields.

There are no formal streams or wetlands on the proposed property itself, but two very small drainage lines (furrows) traverse the property from northwest to south east (one of which seem to be a manmade drainage channel). Just north of the property another slightly larger drainage line can be found.

The main biodiversity features of this area are:

1. Natural veld still supported by these sites (Kalahari Karroid Shrubland)
2. The seasonal drainage lines found on the site.

The main drivers in this vegetation type would be grazing pressure (herbivore), and could determine plant community composition and occurrence of species. Grazing may be an important factor in regulating competitive interaction between plants. Certain species can act

as important “nursery” plants for smaller species and are also important for successional development after disturbance. Tortoises and mammals can be important seed dispersal agents. Watercourses, wetlands, upland- down land gradients or vegetation boundaries are all significant ecological features. The cumulative impact is considered to be low-medium.

The impact on threatened or protected ecosystems is rated as low-medium.

The impact special habitats are rated as low-medium.

The impact on corridors and/or conservancy networks is rated as very low.

The impact on threatened or endangered species is rated as low.

The impact on protected species is rated as medium.

Direct and indirect impacts are both rated as low-medium.

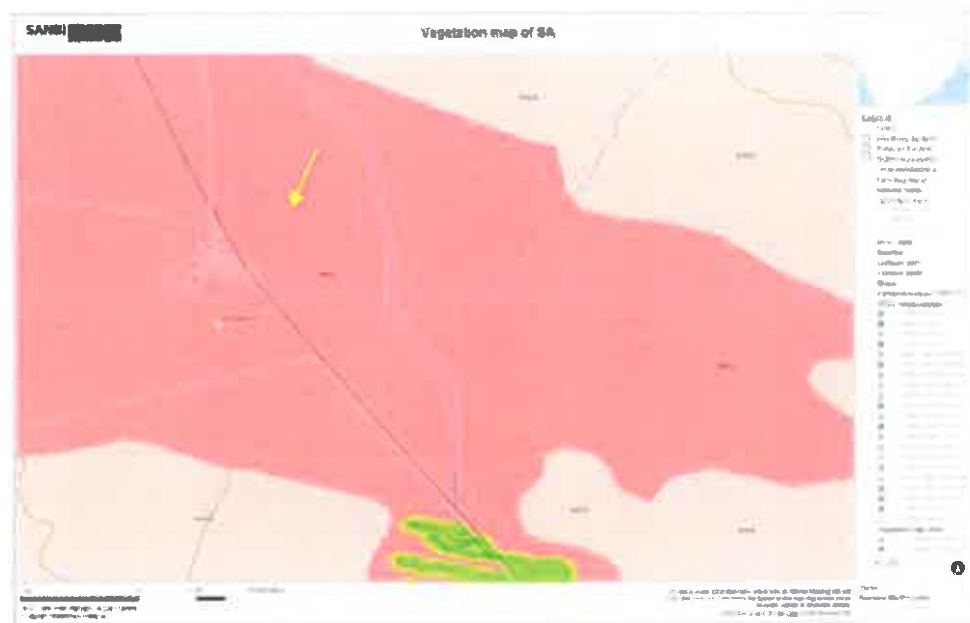


Figure 2: Vegetation Map

A heritage impact assessment was also conducted. Stone tools form a strong background signature across the property. Acheulian, MSA and LSA tools were located. Four graves or burials (informal) were located on the property.

Grave 1: 27°30'45.82°S; 20°8'36.54°E

Grave 2: 27°30'35.02°S; 20°8'28.08°E

Grave 3: 27°30'43.47°S; 20°8'37.73°E

Grave 4: 27°30'43.01°S; 20°8'87.87°E

The lithic found on the property rate as Generally Protected B. This site needs further recording before destruction. The range and number of stone tools found on the property suggest that the site has a generally Medium significance.

The burials may have a high local significance and are awarded a field rating of Generally Protected A. The site should be mitigated before destruction.

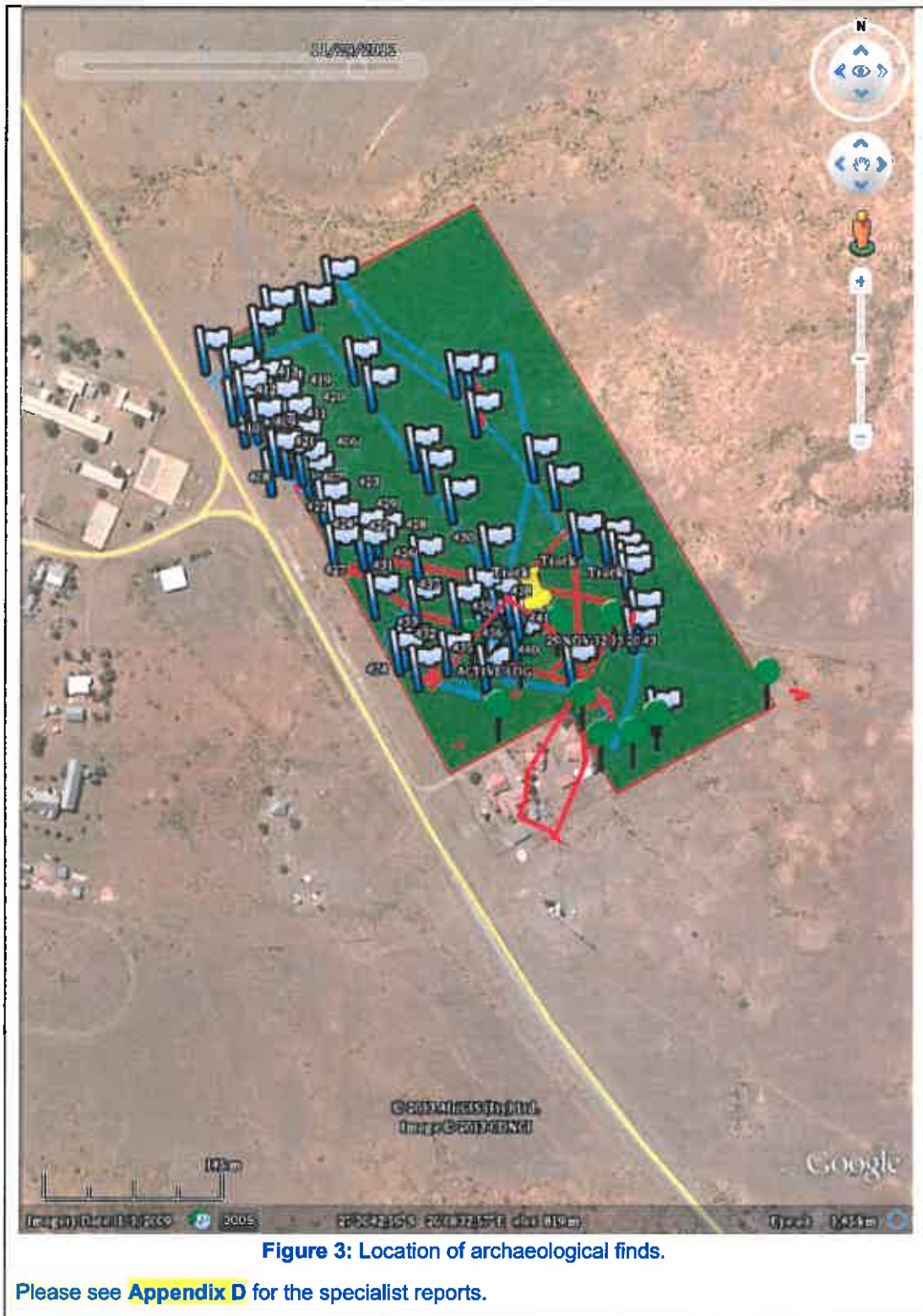
The stone tools or lithic found on the property need to be recorded and sampled in detail, prior to development. The recording of the lithic should assess the raw material, typology and dimensions of a sample of the property. It is recommendation that the site be mapped, documented, minimally sampled, and then destroyed (with a permit). Mitigation usually

BASIC ASSESSMENT REPORT

involves a requirement to collect sample through a controlled surface pickup (CSP) of the cultural and other remains.

Prior to the CSP a permit needs to be acquired from SAHRA for the sampling process. After the CSP the sampled will be analysed and a report sent to the developers and SAHRA. SAHRA should then issue a permit allowing the destruction of the site. The sample will be stored for future reference at the designated repository.

The burials need further investigation. Firstly, it needs to be determined if they are burials. Should they prove to be human burials, further mitigation is necessary. Three alternatives are suggested; 1, Protection of the graves from the impact of the development including possibly mitigation through fencing and avoidance of the area by the development. A mini management plan for maintenance of the graves must also be developed, 2, Relocation of the graves involving public participation and possibly further archival research, or 3, both.



2. FEASIBLE AND REASONABLE ALTERNATIVES

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

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

Describe alternatives that are considered in this application. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. The determination of whether site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

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

Please note: the only feasible and reasonable alternative that has been identified and assessed is a design/layout alternative. The proposed development layout of the preferred and alternative layout will generally be over the same site, and will therefore have similar impacts (unless otherwise specified).

Site alternatives were considered, but these were deemed unfeasible due to (1) the present layout of the Noenieput town, in relation to the land owned by the municipality for such a development (accessibility, suitably placed in terms of services, and integration into the existing town), (2) the Kgalagadi Transfontier Park conservation area situated adjacent to the Mier Municipality and (3) the presence of one of the world's ancient tribes, the !Khomani San, farming and residing in the Mier area. The proposed site is thus the only feasible site.

Paragraphs 3 - 13 will therefore be the same for each of the layout alternatives described below (unless otherwise specified).

Layout alternatives:

- Alternative 1 (option 3 provided by the town planners - preferred layout alternative) (Appendix A1)

The proposed development will be over approximately 11ha and 107 new development stands are proposed, 106 of which are single residential erven, in response to the growing housing need in the municipality. An Institutional Zone II, Transport Zone II (roads) and Public Open Space Zones I & II are included in the layout design.

The location of the graves on site has been taken into consideration in this layout design; these will be located within the Public Open Space.

This layout has also taken the location of intermitted drainage lines (furrows) in to account; minimising the potential pollution, erosion and/or other impacts the proposed development might inflict most when compared to the other layout alternatives.

- Alternative 2 & 3 (respectively option 4 and 2 provided by the town planners - layout alternatives) (Appendix A2 & A3)

Alternative layout design 2 and 3 will both cover the same area as that of the preferred alternative, 11ha.

Institutional Zone II, Transport Zone II (roads) and Public Open Space Zones I & II are

BASIC ASSESSMENT REPORT

included in the layout of all the proposed layout designs.

Layout design 2 proposes 101 single residential erven and layout design 3 proposes 105 residential erven, compared to the 106 proposed by the preferred alternative, Layout Design 1.

Layout design 2 and 3 both take into consideration the location of the graves, placing them in open space zoned areas.

However, the intermitted drainage lines, though brought on in the layout mapping, are at greater risk of being adversely impacted by the proposed housing development compared to that of the preferred alternative, based on the close proximity and/or exact proximity of areas to be developed (not zoned open space).

- Alternative 4 (option 1 provided by the town planners - layout alternative) (Appendix A4)

Alternative layout design 4 covers the same area as that of the preferred alternative, 11ha.

Institutional Zone II, Transport Zone II (roads) and Public Open Space Zones I & II are included in the layout of all the proposed layout designs.

Layout design 4 proposes the most residential erven, that of 108, compared to the 106 proposed by the preferred alternative (Layout Design 1).

Layout design 4 does not take into consideration a workaround plan with respect to the graves identified, placing them inside residential and transport zones directly affected by the proposed development.

The intermitted drainage lines are also at greater risk of being adversely impacted by the proposed housing development compared to that of the preferred alternative, based on the close proximity and/or exact proximity of areas to be developed (not zoned open space).

Alternative 1 is the preferred layout as it not only provides 106 residential opportunities and present the least impact to biodiversity and heritage features identified in the area, but it also provides a institutional zone opportunity as well as a site for a school/crèche, and for a Place of Worship, therefore complies with the general principles as prescribed in Chapter 1, of the Development Facilitation Act (Act 67 of 1995), by:

- promote the integration of the social, economic, institutional and physical aspects of land development;
- promoting a diverse combination of land uses, also at the level of individual erven or subdivisions of land;
- The development must discourage the phenomenon of "urban sprawl" in urban areas and contribute to the development of more compact towns and cities.

3. ACTIVITY POSITION

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

List alternative sites if applicable. **N/A**

Coordinates:	Latitude:	27, ⁰	30'	,40.02"	South
	Longitude:	20, ⁰	08'	,33.62"	East

In the case of linear activities:

BASIC ASSESSMENT REPORT

Alternative:

Alternative S1 (preferred or only route alternative)

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

Latitude (S):

Longitude (E):

°	'	°	'

Alternative S2 (if any)

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

°	'	°	'

Alternative S3 (if any)

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

°	'	°	'

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

4. PHYSICAL SIZE OF THE ACTIVITY

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

Alternative:

Alternative A1¹ (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

or, for linear activities:

Alternative:

Alternative A1 (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

Size of the activity:

11000m ² (11ha)
m ²
m ²

Length of the activity:

m

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

Alternative:

Alternative A1 (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

Size of the site/servitude:

m ²
m ²
m ²

5. SITE ACCESS

Does ready access to the site exist?

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

	YES

Describe the type of access road planned:

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

6. SITE OR ROUTE PLAN

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

The site or route plans must indicate the following:

- 6.1 the scale of the plan which must be at least a scale of 1:500;
- 6.2 the property boundaries and numbers of all the properties within 50 metres of the site;
- 6.3 the current land use as well as the land use zoning of each of the properties adjoining the site or sites;
- 6.4 the exact position of each element of the application as well as any other structures on the site;
- 6.5 the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, storm water infrastructure and telecommunication infrastructure;
- 6.6 all trees and shrubs taller than 1.8 metres;
- 6.7 walls and fencing including details of the height and construction material;
- 6.8 servitudes indicating the purpose of the servitude;
- 6.9 sensitive environmental elements within 100 metres of the site or sites including (but not limited thereto):

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

BASIC ASSESSMENT REPORT

- cultural and historical features;
 - areas with indigenous vegetation (even if it is degraded or invested with alien species);
- 6.9 for gentle slopes the 1 metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and
- 6.10 the positions from where photographs of the site were taken.

7. SITE PHOTOGRAPHS

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

8. FACILITY ILLUSTRATION

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

9. ACTIVITY MOTIVATION

9(a) Socio-economic value of the activity

- What is the expected capital value of the activity on completion?
- What is the expected yearly income that will be generated by or as a result of the activity?
- Will the activity contribute to service infrastructure?
- Is the activity a public amenity?
- How many new employment opportunities will be created in the development phase of the activity?
- What is the expected value of the employment opportunities during the development phase?
- What percentage of this will accrue to previously disadvantaged individuals?
- How many permanent new employment opportunities will be created during the operational phase of the activity?
- What is the expected current value of the employment opportunities during the first 10 years?
- What percentage of this will accrue to previously disadvantaged individuals?

R14,500,000.00
Unknown
YES
YES
+/- 60
Unknown
80%
None
N/A
N/A

9(b) Need and desirability of the activity

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

The South African economy has experienced a stable growth rate during the earlier parts of the past decade, contributing to the continued stability of the country. This has had numerous positive impacts, nationally, on provincial level and locally. Since 2008, instability of the world economy has led to a slumber of this tendency and we have been experiencing the consequences of a global economic recession. The beginning of the year 2010 showed a perceptible, albeit slow, process of repair to the South African economy, resulting in an increase in investment trust. The mentioned recession was felt to a lesser extent in South Africa, than in the overall global sphere and when the recession started to subside, the country was quick to positively respond. The above mentioned aspect is mostly due to the fact that local mining- and construction activities experienced on-going growth during the recession.

The Mier Local Municipality has not at this stage been party to the significant mining boom experienced in the province, but has also seen development, albeit on a smaller scale. This growth has been brought about through a focus on the tourism sector of the economy with attractions such as game farming, hospitality infrastructure and, of course, the Kgalagadi Transfrontier Park.

These mentioned aspects have not only had an economic impact, but has also contributed to population increases in the municipality, be it from immigration or natural growth. With this in

BASIC ASSESSMENT REPORT

mind, the Mier Municipality has felt the need to provide housing opportunity throughout its area of jurisdiction and identified the town of Noenieput as an area of focus.

This application for 107 new development stands in Noenieput, 106 of which are single residential erven, in response to the growing housing need in the municipality.

Indicate any benefits that the activity will have for society in general:

The activity will provide much needed additional housing opportunities, which is a local, provincial and national need.

Indicate any benefits that the activity will have for the local communities where the activity will be located:

The activity will provide much needed additional housing opportunities, as well as business opportunities by providing job opportunities during construction.

DESIRABILITY:			
1.	Does the proposed land use / development fit the surrounding area?	YES	<input type="checkbox"/>
2.	Does the proposed land use / development conform to the relevant structure plans, SDF and planning visions for the area?	YES	NO <input type="checkbox"/>
3.	Will the benefits of the proposed land use / development outweigh the negative impacts of it?	YES	<input type="checkbox"/>
4.	<p>If the answer to any of the questions 1-3 was NO, please provide further motivation / explanation:</p> <p>No SDF has been compiled for the Mier Municipality, thereby ruling out the possibility of development evaluation in these terms on a local level. This project has however been a directive from a Provincial level of planning and was commissioned by the Department of Co-Operative Governance, Human Settlements and Traditional Affairs (COGHSTA).</p> <p>However, it may be said that the proposed application for land use change and its associate layout is in line with the principles of the PSDF, seen as a tool for development evaluation where no local SDF exist. The local authority is therefore asked to evaluate this project upon its individual merit of providing additional housing opportunity in the Mier Municipality within the context of due legislative procedure.</p>		
5.	Will the proposed land use / development impact on the sense of place?	<input type="checkbox"/> YES	NO <input type="checkbox"/>
6.	Will the proposed land use / development set a precedent?	YES <input type="checkbox"/>	<input type="checkbox"/>
7.	Will any person's rights be affected by the proposed land use / development? <i>See below</i>	YES <input type="checkbox"/>	NO <input type="checkbox"/>
8.	Will the proposed land use / development compromise the "urban edge"?	YES <input type="checkbox"/>	<input type="checkbox"/>
9.	<p>If the answer to any of the question 5-8 was YES, please provide further motivation / explanation.</p> <p>Development and expansion of the town is inevitable as the population grows and the need for housing increases. However, the developers have been carefully as to where expansion of the town occurs, with emphasis on the environmental and heritage aspects, as well as consolidation of the town and its resources/services, and thus can be seen as setting a precedent for future expansion of Noenieput.</p> <p>No person's rights are expected to be negatively affected by the proposed development. The activity is expected to have a general positive impact on the</p>		

BASIC ASSESSMENT REPORT

	<p>residents of the Noenieput area.</p> <p>The proposed development will lead to the extension of the Urban edge. However, this is considered necessary as there is very little to no opportunities for "infill".</p>
--	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

BENEFITS:		
1.	Will the land use / development have any benefits for society in general?	YES <input type="checkbox"/>
2.	<p>Explain: The activity will provide much needed additional housing opportunities, which is a local, provincial and national need, as well as business opportunities by providing job opportunities during the construction phase of the development.</p>	
3.	Will the land use / development have any benefits for the local communities where it will be located?	YES <input type="checkbox"/>
4.	<p>Explain: The activity will provide much needed additional housing opportunities, as well as business opportunities by providing job opportunities during the construction phase of the development.</p>	

10. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

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

Title of legislation, policy or guideline:	Administering authority:	Date:
The National Heritage Resources Act, 1999 (Act 25 of 1999)	SAHRA – Northern Cape	
Northern Cape Planning and Development Act (Act 7 of 1998); - rezoning and subdivision	Local Municipality	Not yet

11. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

A report is being compiled by the contracted engineers regarding the associated infrastructure for the required civil and electrical services. This will be incorporated into the final BAR. In the interim standard estimations as used by similar housing projects within the Mier Municipality will be applied

11(a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?
If yes, what estimated quantity will be produced per month?

YES	<input type="checkbox"/>
Unknown at this stage	<input checked="" type="checkbox"/>

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

Solid waste will be disposed of in the municipal waste stream.

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

General waste will be consolidated on site and removed to the nearest registered landfill site as often as required.

Will the activity produce solid waste during its operational phase?
If yes, what estimated quantity will be produced per month?

YES	<input type="checkbox"/>
-----	--------------------------

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

BASIC ASSESSMENT REPORT

Solid waste removal will be disposed of in the municipal waste stream.

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

N/A

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

Can any part of the solid waste be classified as hazardous in terms of the relevant legislation? YES NO

If yes, inform the competent authority and request a change to an application for scoping and EIA.

Is the activity that is being applied for a solid waste handling or treatment facility? YES NO

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

11(b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system? YES NO

If yes, what estimated quantity will be produced per month? **15.5m³ per household per month**

Will the activity produce any effluent that will be treated and/or disposed of on site? YES NO
If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Will the activity produce effluent that will be treated and/or disposed of at another facility? YES NO

If yes, provide the particulars of the facility:

Facility name: _____
 Contact person: _____
 Postal address: _____
 Postal code: _____
 Telephone: _____ Cell: _____
 E-mail: _____ Fax: _____

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

N/A

11(c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere? YES NO

If yes, is it controlled by any legislation of any sphere of government? N/A YES NO

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

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

N/A

11(d) Generation of noise

Will the activity generate noise? YES NO

If yes, is it controlled by any legislation of any sphere of government? N/A YES NO

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

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

N/A

12. WATER USE

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

municipal	water board	groundwater	river, stream, dam or lake	other	the activity will not use water
-----------	-------------	-------------	----------------------------	-------	---------------------------------

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month: N/A

Does the activity require a water use permit from the Department of Water Affairs? YES NO

If yes, please submit the necessary application to the Department of Water Affairs and attach proof thereof to this application if it has been submitted.

BASIC ASSESSMENT REPORT

13. ENERGY EFFICIENCY

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

Solar water heating will be considered for all residential houses.

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

N/A

SECTION B : SITE/AREA/PROPERTY DESCRIPTION

Important notes:

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

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

- Paragraphs 1 - 6 below must be completed for each alternative. **The Paragraphs 1 - 6 will be the same for each of the alternatives described below (unless otherwise specified) as the site is the same.**
- Has a specialist been consulted to assist with the completion of this section? YES

If YES, please complete form XX for each specialist thus appointed:
All specialist reports must be contained in Appendix D.

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

Flat	1:50 — 1:20	1:20 — 1:15	1:15 — 1:10	1:10 — 1:7,5	1:7,5 — 1:5	Steeper than 1:5
------	-------------	-------------	-------------	--------------	-------------	------------------

Alternative S2 (if any):

Flat	1:50 — 1:20	1:20 — 1:15	1:15 — 1:10	1:10 — 1:7,5	1:7,5 — 1:5	Steeper than 1:5
------	-------------	-------------	-------------	--------------	-------------	------------------

Alternative S3 (if any):

Flat	1:50 — 1:20	1:20 — 1:15	1:15 — 1:10	1:10 — 1:7,5	1:7,5 — 1:5	Steeper than 1:5
------	-------------	-------------	-------------	--------------	-------------	------------------

2. LOCATION IN LANDSCAPE

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

- 2.1 Ridgeline
- 2.2 Plateau
- 2.3 Side slope of hill/mountain
- 2.4 Closed valley
- 2.5 Open valley
- 2.6 Plain
- 2.7 Undulating plain / low hills
- 2.8 Dune
- 2.9 Seafront



Figure 4: General view of the site

Please Note: A biodiversity & botanical scan of the location was done, Please refer to **Appendix D** in this regard.

“According to Mucina and Rutherford (2006) and the SANBI Biodiversity Geographical Information System, the geology and soils for this area is described as Cenozoic Kalahari Group sands and small patches also on calcrete outcrops and screes on scarps of intermittent rivers (mekgacha). Dwyka Group tillites outcrops found in places. The soils are deep, red-yellow, apedal, freely drained, with a high base status, typical of A_e land type. No special soils or geology features (e.g. quartz patches or broken veld), which could support special botanical features, were observed during the site visit (or are expected).”

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

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

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

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section.

BASIC ASSESSMENT REPORT

(Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted).

Please Note: A biodiversity & botanical scan of the location was done, Please refer to **Appendix D** in this regard.

“Although the site is still covered by natural vegetation, the vegetation shows signs of degradation. A portion of this specific area was levelled at some stage and presumably used for sporting fields. There are no formal streams or wetlands on the proposed property itself, but two very small drainage lines (furrows) traverse the property from northwest to south east.”

4. GROUNDCOVER

Indicate the types of groundcover present on the site:

- 4.1 Natural veld — good condition^E
- 4.2 Natural veld — scattered aliens^E
- 4.3 Natural veld with heavy alien infestation^E
- 4.4 Veld dominated by alien species^E
- 4.5 Gardens
- 4.6 Sport field
- 4.7 Cultivated land
- 4.8 Paved surface
- 4.9 Building or other structure
- 4.10 Bare soil

The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s). **Please refer to the Biodiversity Assessment (Appendix D).**

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

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

According to the Biodiversity Assessment (Appendix D):

“In accordance with the 2006 Vegetation map of South Africa, Lesotho and Swaziland (Mucina & Rutherford, 2006) one broad vegetation type is expected on the site and its immediate surroundings, namely Kalahari Karroid Shrubland.

According to the National list of ecosystems that are threatened and in need of protection (GN 1002, December 2011), Kalahari Karroid Shrubland were classified as “Least Threatened”.

The natural veld encountered on the site can be described as very sparse disturbed karroid type vegetation, on a very rocky substrate, dominated by one of the Tetragonia species (yellow plants in Photo 1). Vegetation structure is much compromised as if the whole site was disturbed at some stage. Vegetation especially sparse and more disturbed towards the east of the site. Species diversity was low (Photo 1).”

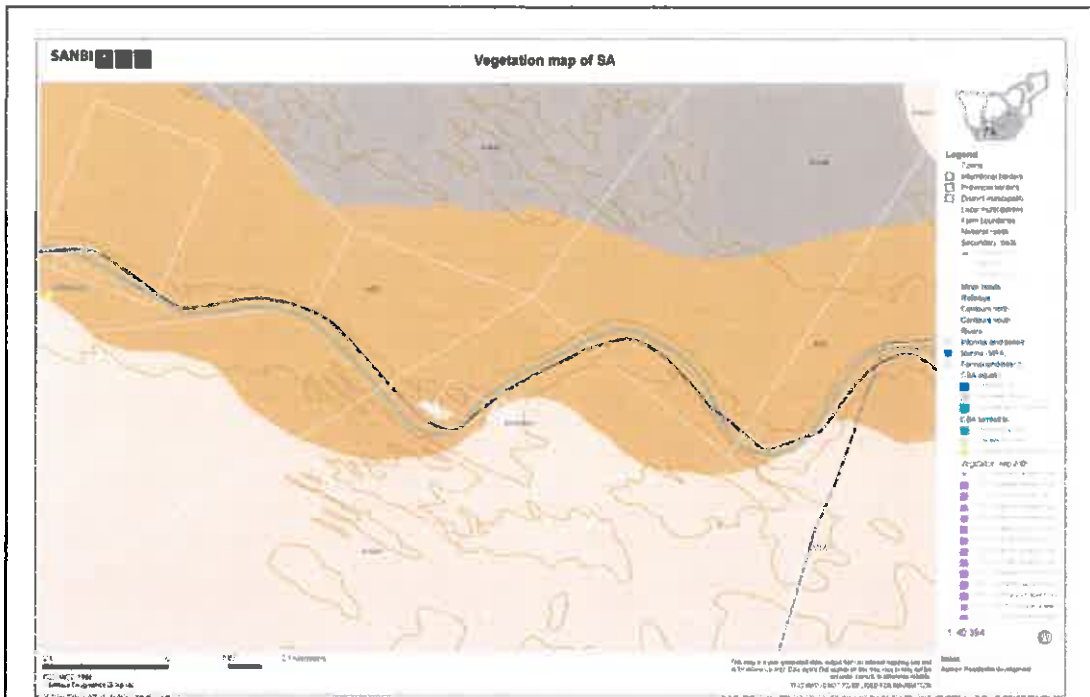


Figure 3: Vegetation map of SA, Lesotho and Swaziland (2006).

Please refer to Table 4 of the Biodiversity Assessment (**Appendix D2** for a list of vegetation encountered on site.

Significant vegetation identified includes three listed protected species that were encountered within the proposed site. These include the *Acacia erioloba*, *Boscia albitrunca* and *Acacia haematoxylon*. These have been listed and mapped in Table 5 of the Biodiversity Assessment.

5. LAND USE CHARACTER OF SURROUNDING AREA

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

- 5.1 Natural area
- 5.2 Low density residential
- 5.3 Medium density residential
- 5.4 High density residential
- 5.5 Informal residential^A
- 5.6 Retail commercial & warehousing
- 5.7 Light industrial
- 5.8 Medium industrial^{AN}
- 5.9 Heavy industrial^{AN}
- 5.10 Power station
- 5.11 Office/consulting room
- 5.12 Military or police base/station/compound
- 5.13 Spoil heap or slimes dam^A
- 5.14 Quarry, sand or borrow pit
- 5.15 Dam or reservoir
- 5.16 Hospital/medical centre
- 5.17 School
- 5.18 Tertiary education facility
- 5.19 Church
- 5.20 Old age home
- 5.21 Sewage treatment plant^A
- 5.22 Train station or shunting yard^N
- 5.23 Railway line^N
- 5.24 Major road (4 lanes or more)^N

BASIC ASSESSMENT REPORT

- 5.26 Airportth
- 5.26 Harbour
- 5.27 Sport facilities
- 5.28 Golf course
- 5.29 Polo fields
- 5.30 Filling stationth
- 5.31 Landfill or waste treatment site
- 5.32 Plantation
- 5.33 Agriculture-
- 5.34 River, stream or wetland -
- 5.35 Nature conservation area
- 5.36 Mountain, koppie or ridge
- 5.37 Museum
- 5.38 Historical building
- 5.39 Protected Area
- 5.40 Graveyard
- 5.41 Archaeological site
- 5.42 Other land uses (describe)

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

If YES, specify and explain:	N/A
------------------------------	-----

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

If YES, specify and explain:	N/A
------------------------------	-----

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

If YES, specify and explain:	N/A
------------------------------	-----

6. CULTURAL/HISTORICAL FEATURES

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

YES	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>

If YES, explain:

Please see below

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

BASIC ASSESSMENT REPORT

Briefly explain the findings of the specialist:

Stone tools form a strong background signature across the property. Acheulian, MSA and LSA tools were located. Four graves or burials were located on the property. Mostly situated near the Police station, they are informal.

Grave 1: 27°30'45.82"S; 20°8'36.54"E

Grave 2: 27°30'35.02"S; 20°8'28.08"E

Grave 3: 27°30'43.47"S; 20°8'37.73"E

Grave 4: 27°30'43.01"S; 20°8'87.87"E

The lithic found on the property rate as Generally Protected B. This site needs further recording before destruction. The range and number of stone tools found on the property suggest that the site has a generally Medium significance.

The burials may have a high local significance and are awarded a field rating of Generally Protected A. The site should be mitigated before destruction.

The stone tools or lithic found on the property need to be recorded and sampled in detail, prior to development. The recording of the lithic should assess the raw material, typology and dimensions of a sample of the property. It is recommendation that the site be mapped, documented, minimally sampled, and then destroyed (with a permit). Mitigation usually involves a requirement to collect sample through a controlled surface pickup (CSP) of the cultural and other remains.

Prior to the CSP a permit needs to be acquired from SAHRA for the sampling process. After the CSP the sampled will be analysed and a report sent to the developers and SAHRA. SAHRA should then issue a permit allowing the destruction of the site. The sample will be stored for future reference at the designated repository.

The burials need further investigation. Firstly, it needs to be determined if they are burials. Should they prove to be human burials, further mitigation is necessary. Three alternatives are suggested; 1, Protection of the graves from the impact of the development including possibly mitigation through fencing and avoidance of the area by the development. A mini management plan for maintenance of the graves must also be developed, 2, Relocation of the graves involving public participation and possibly further archival research, or 3, both.

Will any building or structure older than 60 years be affected in any way?
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

NO
YES

If yes, please submit or, make sure that the applicant or a specialist submits the necessary application to SAHRA or the relevant provincial heritage agency and attach proof thereof to this application if such application has been made.

BASIC ASSESSMENT REPORT

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT (Please refer to Appendix E for proof of Advertisements and Site notices)

The person conducting a public participation process must take into account any guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of the application which is subjected to public participation by—

- (a) fixing a notice board (of a size at least 60cm by 42cm; and must display the required information in lettering and in a format as may be determined by the competent authority) at a place conspicuous to the public at the boundary or on the fence of—
 - (i) the site where the activity to which the application relates is or is to be undertaken; and
 - (ii) any alternative site mentioned in the application;
- (b) giving written notice to—
 - (i) the owner or person in control of that land if the applicant is not the owner or person in control of the land;
 - (ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
 - (iii) owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
 - (iv) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;
 - (v) the municipality which has jurisdiction in the area;
 - (vi) any organ of state having jurisdiction in respect of any aspect of the activity; and
 - (vii) any other party as required by the competent authority;
- (c) placing an advertisement in—
 - (i) one local newspaper; or
 - (ii) any official *Gazette* that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;
- (d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or local municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official *Gazette* referred to in subregulation 54(c)(ii); and
- (e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desiring of but unable to participate in the process due to—
 - (i) illiteracy;
 - (ii) disability; or
 - (iii) any other disadvantage.

2. CONTENT OF ADVERTISEMENTS AND NOTICES

A notice board, advertisement or notices must:

- (a) indicate the details of the application which is subjected to public participation; and
- (b) state—
 - (i) that the application has been submitted to the competent authority in terms of these Regulations, as the case may be;
 - (ii) whether basic assessment or scoping procedures are being applied to the application, in the case of an application for environmental authorisation;
 - (iii) the nature and location of the activity to which the application relates;
 - (iv) where further information on the application or activity can be obtained; and
 - (v) the manner in which and the person to whom representations in respect of the application may be made.

3. PLACEMENT OF ADVERTISEMENTS AND NOTICES

Where the proposed activity may have impacts that extend beyond the municipal area where it is located, a notice must be placed in at least one provincial newspaper or national newspaper, indicating that an application will be submitted to the competent authority in terms of these regulations, the nature and location of the activity, where further information on the proposed activity can be obtained and the manner in which representations in respect of the application can be made, unless a notice has been placed in any *Gazette* that is published specifically for the purpose of providing notice to the public of applications made in terms of the EIA regulations.

Advertisements and notices must make provision for all alternatives.

4. DETERMINATION OF APPROPRIATE MEASURES

The practitioner must ensure that the public participation is adequate and must determine whether a public meeting or any other additional measure is appropriate or not based on the particular nature of each case. Special attention

BASIC ASSESSMENT REPORT

should be given to the involvement of local community structures such as Ward Committees, ratepayers associations and traditional authorities where appropriate. Please note that public concerns that emerge at a later stage that should have been addressed may cause the competent authority to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was inadequate.

5. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments and respond to each comment of the public before the application is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to this application. The comments and response report must be attached under Appendix E.

6. AUTHORITY PARTICIPATION

Authorities are key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input. The planning and the environmental sections of the local authority must be informed of the application at least 30 (thirty) calendar days before the submission of the application.

List of authorities informed:

The following authorities were notified of the application.

- SAHRA Northern Cape
- Northern Cape Department of Agriculture and Land Reform
- Department of Co-operative Governance, Human Settlements and Traditional Affairs
- Department of Environment and Nature Conservation
- Department of Water Affairs – Northern Cape
- Department of Roads and Public Works
- Siyanda District Municipality
- Mier Local Municipality

Please refer to **Appendix E** for the I&AP list and proof of notifications.

List of authorities from whom comments have been received:

No comments were received during the initial round of public participation from the authorities.

7. CONSULTATION WITH OTHER STAKEHOLDERS

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

Any stakeholder that has a direct interest in the site or property, such as servitude holders and service providers, should be informed of the application at least 30 (thirty) calendar days before the submission of the application and be provided with the opportunity to comment.

Has any comment been received from stakeholders?

YES

If "YES", briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):

No comments were received during the initial Public Participation round

BASIC ASSESSMENT REPORT

SECTION D: IMPACT ASSESSMENT

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

1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

List the main issues raised by interested and affected parties.

No issues were raised by Interested and Affected Parties thus far. Potential issues have been identified by the EAP, specialists (Biodiversity and Heritage), town planners, engineers and landowner.

Response from the practitioner to the issues raised by the interested and affected parties (A full response must be given in the Comments and Response Report that must be attached to this report):

N/A at this stage

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

List the potential direct, indirect and cumulative property/activity/design/technology/operational alternative related impacts (as appropriate) that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed.

Alternative (preferred alternative)

Direct impacts:

Archaeological Heritage

According to Heritage Impact Assessment (**Appendix D**), no archaeological sites were found during a foot survey of the proposed site. or other prehistoric resources were found during a foot survey of the proposed site.

However, class B, generally protected lithic (Stone Tools) and a total of four graves were identified.

Stone tools form a strong background signature across the property. Acheulian, MSA and LSA tools were located. Four graves or burials were located on the property.

Grave 1: 27°30'45.82"S; 20°8'36.54"E

Grave 2: 27°30'35.02"S; 20°8'28.08"E

Grave 3: 27°30'43.47"S; 20°8'37.73"E

Grave 4: 27°30'43.01"S; 20°8'87.87"E

The burials may have a high local significance and are awarded a field rating of Generally Protected A. The site should be mitigated before destruction.

The range and number of stone tools found on the property suggest that the site has a generally Medium significance.

The graves have been identified by the planners and provision for them has been made in the site development plans. These will be located within the area rezoned as Public Open Space.

Mitigation:

The stone tools or lithic found on the property need to be recorded and sampled in detail, prior to development. The recording of the lithic should assess the raw material, typology and dimensions of a sample of the property. It is recommendation that the site be mapped,

documented, minimally sampled, and then destroyed (with a permit). Mitigation usually involves a requirement to collect sample through a controlled surface pickup (CSP) of the cultural and other remains.

Prior to the CSP a permit needs to be acquired from SAHRA for the sampling process. After the CSP the sampled will be analysed and a report sent to the developers and SAHRA. SAHRA should then issue a permit allowing the destruction of the site. The sample will be stored for future reference at the designated repository.

The burials need further investigation. Firstly, it needs to be determined if they are burials. Should they prove to be human burials, further mitigation is necessary. Three alternatives are suggested; 1, Protection of the graves from the impact of the development including possibly mitigation through fencing and avoidance of the area by the development. A mini management plan for maintenance of the graves must also be developed, 2, Relocation of the graves involving public participation and possibly further archival research, or 3, both.

The Heritage recommended gave site mitigation measures:

- That fencing around the burial ground be put in place, particularly prior to construction, with signage explaining the significance of the site.
- That research into the relationship of the local community with the burials be investigated.
- There is always the possibility of encountering human remains during construction. Human Remains, which are indicated by the presence of light brown to dark brown bones either whole or in fragments, may include artefacts. Burial places fall under the jurisdiction of SAHRA and must be approached using the guidelines set out in the NHRA 1999 Section 36. If human remains are found, please follow these guidelines:
 - Leave the remains in place;
 - Cordon off the area;
 - Contact SAHRA (021 462 4502);
 - Contact an archaeologist;
 - Once an archaeologist has examined the find, the SA Police services and state pathologist must be contacted to report human remains;
 - If the remains are found to be a legitimate burial or precolonial burial, an emergency exhumation permit will be issued by SAHRA or HWC; and
 - If a crime is suspected, a police docket will be opened.

The development will have a adverse impact on the lithics and the burials identified on site. Mitigation is necessary.

Biodiversity (Biodiversity Assessment - Appendix D)

The construction of the proposed low cost housing entails:

1. the layout planning and location of the proposed housing within the larger site;
2. clearing of the footprint (including topsoil);
3. installation of Municipal works (water, sewerage and electricity) and associated infrastructure (e.g.roads);
4. construction of housing; and
5. rehabilitation of the construction footprint (outside the designated housing area) on completion of the project.

Parameters of the impact

Extent of the impact: Local.

Duration of the impact: Permanent

Probability or likelihood: The probability or likelihood that the impact will occur if the project is approved is very likely.

Severity of the impact: The severity of the impact is considered to be medium to low depending on the impact minimisation actions implemented.

Possible issues / impacts associated with construction

1. The possible impact on natural vegetation with a high conservation value, which might also be located within a future conservation area (Draft Siyanda EMF).
2. The likely impact on protected species.
3. The possible impact on small drainage lines or furrows (one of which appears to be manmade).
4. Establishment of a construction associated infrastructure during the construction phase.
5. Temporary storage areas.
6. Waste management and control.

Direct Impacts:

1. *Impact on threatened or protected ecosystems*

According to the Biodiversity Assessment (**Appendix D**) the vegetation mostly conforms to Kalahari Karroid Shrubland, classified as "Least Threatened"

The proposed project will have an impact on natural vegetation which is considered to be of high conservation value and might be located within a proposed future conservation area. In addition a number of small drainage lines/streams were also encountered on both sites. On the other hand, because of the localised nature of the impact the impact on ecosystem function is regarded as very low, cumulative impact on ecology is regarded as very low and finally the impact on economic use of the vegetation is regarded as very low.

The impact is thus rated as **medium-low**.

2. *Special habitats*

The vegetation itself is not considered to belong to a threatened or protected ecosystem and is classified as "Least threatened", but according to the draft Siyanda EMF, shrubland in good condition is given a high conservation priority, and it falls within a proposed conservation area. In addition its environmental sensitivity classification was rated as medium. This is, however, offset by the general poor condition of the veld. No special habitats, were encountered on site (e.g. quartz patches or broken veld), which could sustain significant smaller ecosystems.

There are no formal rivers on any of the proposed site, but various drainage furrows were encountered on both proposed sites. Although most of these drainage lines are basically storm water channels with little riparian vegetation they should still be seen as significant biodiversity features, which should be protected by adequate river corridors or suitably incorporated within the storm water planning for these town additions. It is considered unlikely that the proposed project will have a significant impact on special habitats if the impact mitigation recommendations are adhered to.

The impact is thus rated as very **low**.

3. Corridors and/or conservation networks

Looking at the larger site and its surroundings it shows excellent connectivity with remaining natural veld in almost all directions. Corridors and natural veld networks are still relative unscathed (apart from road networks). Because of the localized impact of the housing project and because the site are already impacted by the Noenieput settlement it is highly unlikely that it will have any significant additional impacts on corridors or conservancy networks.

The impact is thus rated as **low**.

4. Threatened or endangered species

No threatened or endangered species were recorded during the site visit, however, this does not rule out their presence as they may be subject to seasonable rainfall and may not have been observable during the time of the site visit, since the composition of the vegetation layers will fluctuates with seasonal rainfall (Van Rooyen et. all, 1984, vide Mucina & Rutherford, 2006). However, it must be noted that the vegetation type is considered "Least Threatened" and that this classification is based on plant species diversity and turnover as well as habitat transformation. The number of species per broad geographical levels for these biomes is low (Van Rooyen, 1988, vide Mucina & Rutherford, 2006). It is therefore very unlikely that any red data species will be confined to the proposed site alone.

Taking the above into account it is highly unlikely that the proposed project will have a significant or long term effect on threatened or endangered species.

The impact is thus rated as **low**.

5. Protected Species

The National Forests Act (NFA) of 1998 (Act 84 of 1998) provides for the protection of forests as well as specific tree species (GN 716 of 7 September 2012). In addition to the NFA the Northern Cape Nature Conservation Act 9 of 2009 (NCNCA) came into effect on the 12th of December 2011, which also provides for the sustainable utilization of wild animals, aquatic biota and plants. Schedule 1 and 2 of the act give extensive lists of specially protected and protected fauna and flora species in accordance with this act.

Three protected plant species was observed. The number of species per broad geographical levels for these biomes is low and it is therefore very unlikely that any single species will be confined to the proposed site alone. However, these species will be impacted (especially the Aizoaceae). Both the Aloe and the Mesembryanthemaceae could be easily transplanted (single individuals), but the Aizoaceae are to numerous.

It is thus considered likely that the project will have an impact on protected species.

The impact is thus rated as **medium** (which can be reduced with mitigation).

Mitigation:

- As a pre-cautionary measure all viable herb-, bulbs- and succulent plant species encountered within the footprint should be removed and replanted through a dedicated search and rescue operation.
- All protected species must preferably be conserved or transplanted.
- Permits must be obtained for the removal of any protected species which are

encountered.

Direct impacts refers to those impacts with a direct impact on biodiversity features and in this case were considered for the potentially most significant associated impacts (some of which have already been discussed above).

- Direct loss of vegetation type and associated habitat due to construction and operational activities.
- Loss of ecological processes (e.g. migration patterns, pollinators, river function etc.) due to construction and operational activities.
- Loss of local biodiversity and threatened plant species
- Loss of ecosystem connectivity

The site still support natural vegetation (shrubland) which, according to the draft Siyanda EMF is considered to be of high conservation value. In addition the site may be located within a proposed future conservation area and a number of protected species were encountered. However, the impact will be localized, no special habitats were encountered, it will not lead to significant loss of ecological processes, biodiversity or ecosystem connectivity and is not expected to have any significant impact on wildlife or avi-fauna.

Taking the above into account the direct impact on the environment is rated as **low-medium**.

Mitigation:

- Although most of these drainage lines are basically storm water channels with little riparian vegetation they should still be seen as significant biodiversity features, which should be protected by adequate river corridors or suitably incorporated within the storm water planning for these town additions.
- Permits must be obtained for the removal of any protected species which might be encountered.
- As a pre-cautionary measure all viable herb-, bulbs- and succulent plant species encountered within the footprint should be removed and replanted through a dedicated search and rescue operation.
- Only existing access roads should be used for access to the terrain. Access roads must be clearly demarcated and access must be tightly controlled (deviations may not be allowed).
- Indiscriminate clearing of areas must be avoided (all remaining areas to remain as natural as possible).
- All topsoil (at all excavation sites) must be removed and stored separately for re-use for rehabilitation purposes. The topsoil and vegetation should be replaced over the disturbed soil to provide a source of seed and a seed bed to encourage re-growth of the species removed during construction.
- Once the construction is completed all further movement must be confined to the access tracks to allow the vegetation to re-establish over the excavated areas.
- Rehabilitation must be done after construction.

Indirect Impacts:

Indirect impacts are impacts that are not a direct result of the main activity, but are impacts still associated or resulting from the main activity. The following possible indirect impacts were

associated with the proposed project:

- Establishment of a temporary construction associated infrastructure or facilities.
- Temporary storage areas (e.g. pipe's and fittings and concrete mixing material).
- Waste management.

It is very likely that the proposed project will have indirect impacts. It is considered that indirect impacts will have a similar impact as direct impacts, which will lead to a cumulative effect on the environment. However, indirect impacts can be much reduced through good environmental control during construction.

On its own the impact is considered to be **low-medium**.

Mitigation:

- Appoint a suitably experience ECO during the construction phase of the project.

Visual and noise impacts

The activity will impact on the visual character of the area. The presence of construction plant during the construction phase will have a visual impact, but this will only be during the construction phase and is expected to have a low impact.

The activity will create some noise during the construction phase of the development. Noise mitigation measures will be dealt with in the EMP. With the mitigation measures, as described in the EMP (**Appendix F**), the potential noise impacts are also expected to be negligible.

Cumulative Impacts:

In order to comprehend the cumulative impact, one has to understand to what extent the proposed activity will contribute to the cumulative loss of ecological function and other biodiversity features on a regional basis.

Having discussed the various possible environmental impacts above, it is concluded that:

- The proposed site is located on degraded natural veld in relative poor condition.
- The number of species per broad geographical levels for this biome is low and it is therefore very unlikely that any single species will be confined to any of the proposed sites alone. However, a number of protected species were encountered. The impact on individual species is thus regarded as low-medium.
- The impact on sensitive habitats, however, is regarded as low-medium, because of the fact that shrubland has a high conservation value within the draft Siyanda EMF and the site may be located within a future conservation area as well as the presence of various small drainage lines/streams.
- On the other hand, because of the localised nature of the impact the impact on ecosystem function is regarded as very low, cumulative impact on ecology is regarded as very low and finally the impact on economic use of the vegetation is regarded as very low.

The proposed project will thus have a permanent, but localised impact, which can, through the implementation of impact minimisation actions, be controlled and further reduced.

On the whole the cumulative impact is considered to be **low-medium**.

BASIC ASSESSMENT REPORT

3. ENVIRONMENTAL IMPACT STATEMENT

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

Alternative A (preferred alternative)

The following is a summary of the potential impacts, and their ratings, after mitigation:

Construction phase.

Potential impacts on archaeological heritage – **Low.**

Impact on threatened or protected ecosystems - **Low (negative), highly unlikely.**

Special habitats – **Very low (negative), highly unlikely.**

Corridors and/or conservation networks - **Very Low (negative), highly unlikely.**

Threatened or endangered species – **Very Low (negative), very unlikely.**

Protected species – **Medium (negative), likely during construction phase.**

Job creation – **Medium (Positive), definite.**

Noise impact - **Negligible, definite, only during construction phase.**

Visual impact – **Low (negative), definite, during construction**

Operational Phase

Potential impacts on archaeological heritage – **Negligible**

Loss of vegetation and associated habitat - **Negligible**

Impact on threatened vegetation - **Negligible**

Freshwater ecosystems – **Negligible**

Job creation – **Low (Positive), definite**

Noise impact - **Negligible**

Visual impact – **Low (negative), definite, permanent**

Decommissioning

The project as proposed does not require 'decommissioning' or 'closure', as such the potential impacts thereof is considered irrelevant.

No-go alternative (compulsory)

According to the Biodiversity Assessment (**Appendix D**), The "No-Go alternative" does not signify significant biodiversity gain or loss especially on a regional basis. However, it will ensure that none of the potential impacts above occur. The current status quo will remain and there will be no immediate additional impact on the vegetation, protected species or river corridors. However, normal growth within the town and its associated urban activities will over time have a further impact, which might be better managed through controlled development.

BASIC ASSESSMENT REPORT

On the other hand the local municipality and governments have a socio-economic responsibility to provide basic living. Over the long term the proposed project is likely to be one of the viable solutions with acceptable environmental impact.

SECTION E. RECOMMENDATION OF PRACTITIONER

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

YES

Is an EMPr attached?

YES

The EMPr must be attached as Appendix F.

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

N/A

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

The following is a list of recommended conditions and mitigation measures from a biodiversity and heritage perspective:

- All construction must be done in accordance with an approved construction and operational phase Environmental Management Plan (EMP), which must be developed by a suitably experienced Environmental Assessment Practitioner.
- A suitably qualified Environmental Control Officer must be appointed to monitor the construction phase in terms of the EMP and the Biodiversity study recommendations as well as any other conditions which might be required by the Department of Environmental Affairs.
- An integrated waste management system must be implemented during the construction phase.
- All rubble and rubbish (if applicable) must be collected and removed from the site to a suitable registered waste disposal site.
- All alien vegetation should be removed from the larger property.
- A suitably qualified ECO or botanist must inspect the final site with the aim of identifying any protected plant species listed in the NCNCA. Should any protected or specially protected plant be located within the final footprint, an application for approval must be obtained from the DAFF, before any work is done on the site.
- Permits must be obtained for the removal of any protected species which cannot be

BASIC ASSESSMENT REPORT

avoided.

- As a pre-cautionary measure all viable herb-, bulbs- and succulent plant species encountered within the footprint should be removed and replanted through a dedicated search and rescue operation.
- Only existing access roads should be used for access to the terrain. Access roads must be clearly demarcated and access must be tightly controlled (deviations may not be allowed).
- Indiscriminate clearing of areas must be avoided (all remaining areas to remain as natural as possible).
- All efforts must be made to protect all the mature protected trees within the proposed final footprint (and any other protected species that might be encountered on site). On-site micro- adjustment of the final erven must be done in order to minimise the impact on as many of the protected tree species as possible.
- All topsoil (the top 15-20 cm at all excavation sites), must be removed and stored separately for re-use for rehabilitation purposes. The topsoil and vegetation should be replaced over the disturbed soil to provide a source of seed and a seed bed to encourage re-growth of the species removed during construction.
- Once the construction is completed all further movement must be confined to the access roads to allow the vegetation to re-establish over the excavated areas.
- Rehabilitation must include sand stabilisation methods to protect the open sandy areas against wind erosion.
- Adequate measures must be implemented to ensure against erosion.
- No firewood should be collected on site. Adequate, safe, cooking equipment must be provided for workers at the construction site camp.
- Fencing around the burial ground must be put in place, particularly prior to construction, with signage explaining the significance of the site.
- Research into the relationship of the local community with the burials be investigated.
- If human remains are found, please follow these guidelines:
 - Leave the remains in place;
 - Cordon off the area;
 - Contact SAHRA (021 462 4502);
 - Contact an archaeologist;
 - Once an archaeologist has examined the find, the SA Police services and state pathologist must be contacted to report human remains;
 - If the remains are found to be a legitimate burial or precolonial burial, an emergency exhumation permit will be issued by SAHRA or HWC; and
 - If a crime is suspected, a police docket will be opened.
- Stone tools / lithic found on the property need to be recorded and sampled in detail, prior to development. Recording to assess the raw material, typology and dimensions of a sample of the property. It is recommendation that the site be mapped, documented, minimally sampled, and then destroyed (with a permit). Collect sample through a controlled surface pickup (CSP) of the cultural and other remains.
- Prior to the CSP a permit needs to be acquired from SAHRA for the sampling process. After the CSP the sampled will be analysed and a report sent to the developers and SAHRA. SAHRA should then issue a permit allowing the destruction of the site. The sample will be stored for future reference at the designated repository.

SECTION F: APPENDIXES

The following appendixes must be attached as appropriate:

6. DECLARATIONS

6.1 THE APPLICANT

Note: Duplicate this declaration where there is more than one applicant.

I, J. Willemse, in my personal capacity or duly authorized thereto hereby declare/affirm all the information submitted or to be submitted as part of the application is true and correct, and that I:

- am fully aware of my responsibilities in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA"), the Environmental Impact Assessment Regulations ("EIA Regulations") in terms of NEMA (Government Notice No. R. 982 refers) and any relevant specific environmental management act and that failure to comply with these requirements may constitute an offence in terms of relevant environmental legislation;
- appointed the environmental assessment practitioner, where applicable, which meets all the requirements in terms of regulation 13 of GN No. R 982 to act as independent environmental assessment practitioner for this application;
- will provide the environmental assessment practitioner and specialist, where applicable, and the competent authority with access to all information at my disposal that is relevant to the application;
- will be responsible for the costs incurred in complying with the NEMA EIA Regulations, 2014 and other environmental legislation including but not limited to –
 - costs incurred in connection with the appointment of the environmental assessment practitioner or any person contracted by the environmental assessment practitioner;
 - costs incurred in respect of the undertaking of any process required in terms of the regulations;
 - costs in respect of any fee prescribed by the Minister or MEC in respect of the regulations;
 - costs in respect of specialist reviews, if the competent authority decides to recover costs; and
 - the provision of security to ensure compliance with applicable management and mitigation measures;
- am responsible for complying with conditions that may be attached to any decision(s) issued by the competent authority;
- will ensure that the environmental assessment practitioner is competent to comply with the requirements of NEMA EIA Regulations, 2014 other environmental legislation;
- hereby indemnify, the government of the Republic, the competent authority and all its officers, agents and employees, from any liability arising out of the content of any report, any procedure or any action for which the applicant or environmental assessment practitioner is responsible in terms of the NEMA EIA Regulations, 2014 and any specific environmental management act; and
- will not hold the competent authority responsible for any costs that may be incurred by the applicant in proceeding with an activity prior to an appeal being decided in terms of the NEMA Regulations, 2014.

Note: If acting in a representative capacity, a certified copy of the resolution or power of attorney must be attached.

Signature of the applicant:

Mier MUNICIPALITY

Name of company:

12/03/15

Date:

BASIC ASSESSMENT REPORT

Appendix A: Site plan(s)

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports

Appendix E: Comments and responses report

Appendix F: Environmental Management Programme (EMPr)

Appendix G: Other information

APPENDIX A:
LOCALITY MAP & LAYOUT DESIGNS

Appendix A (1)

Layout Design 1 (Preferred Alternative)

Option 3

Preferred Alternative



MACROPLAN
Town Planners & Land Use Specialists
Sheddenhamena en Grondgebouk Spesialiste
P.O. Box 887
Uyington
8800

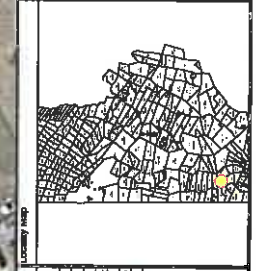
GOSETA
Geographical Information Systems
Township of the Western Cape

SA
South Africa

114 Properties created
106 Residential properties created
Consent is hereby granted for the subject site to be included in the map, in terms of Article 48 of Act 7 of 1988 of the Northern Cape.

Signature: _____
Municipal Manager

Date: _____
Reference: _____



Proposed Land Use in terms of Land Use Map, section 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106

Zone	Description	Symbol
Residential Zone I	Residential Zone I	[Symbol]
Residential Zone II	Residential Zone II	[Symbol]
Residential Zone III	Residential Zone III	[Symbol]
Residential Zone IV	Residential Zone IV	[Symbol]
Residential Zone V	Residential Zone V	[Symbol]
Residential Zone VI	Residential Zone VI	[Symbol]
Residential Zone VII	Residential Zone VII	[Symbol]
Residential Zone VIII	Residential Zone VIII	[Symbol]
Residential Zone IX	Residential Zone IX	[Symbol]
Residential Zone X	Residential Zone X	[Symbol]
Residential Zone XI	Residential Zone XI	[Symbol]
Residential Zone XII	Residential Zone XII	[Symbol]
Residential Zone XIII	Residential Zone XIII	[Symbol]
Residential Zone XIV	Residential Zone XIV	[Symbol]
Residential Zone XV	Residential Zone XV	[Symbol]
Residential Zone XVI	Residential Zone XVI	[Symbol]
Residential Zone XVII	Residential Zone XVII	[Symbol]
Residential Zone XVIII	Residential Zone XVIII	[Symbol]
Residential Zone XIX	Residential Zone XIX	[Symbol]
Residential Zone XX	Residential Zone XX	[Symbol]
Residential Zone XXI	Residential Zone XXI	[Symbol]
Residential Zone XXII	Residential Zone XXII	[Symbol]
Residential Zone XXIII	Residential Zone XXIII	[Symbol]
Residential Zone XXIV	Residential Zone XXIV	[Symbol]
Residential Zone XXV	Residential Zone XXV	[Symbol]
Residential Zone XXVI	Residential Zone XXVI	[Symbol]
Residential Zone XXVII	Residential Zone XXVII	[Symbol]
Residential Zone XXVIII	Residential Zone XXVIII	[Symbol]
Residential Zone XXIX	Residential Zone XXIX	[Symbol]
Residential Zone XXX	Residential Zone XXX	[Symbol]

Zone	Description	Symbol
Residential Zone I	Residential Zone I	[Symbol]
Residential Zone II	Residential Zone II	[Symbol]
Residential Zone III	Residential Zone III	[Symbol]
Residential Zone IV	Residential Zone IV	[Symbol]
Residential Zone V	Residential Zone V	[Symbol]
Residential Zone VI	Residential Zone VI	[Symbol]
Residential Zone VII	Residential Zone VII	[Symbol]
Residential Zone VIII	Residential Zone VIII	[Symbol]
Residential Zone IX	Residential Zone IX	[Symbol]
Residential Zone X	Residential Zone X	[Symbol]
Residential Zone XI	Residential Zone XI	[Symbol]
Residential Zone XII	Residential Zone XII	[Symbol]
Residential Zone XIII	Residential Zone XIII	[Symbol]
Residential Zone XIV	Residential Zone XIV	[Symbol]
Residential Zone XV	Residential Zone XV	[Symbol]
Residential Zone XVI	Residential Zone XVI	[Symbol]
Residential Zone XVII	Residential Zone XVII	[Symbol]
Residential Zone XVIII	Residential Zone XVIII	[Symbol]
Residential Zone XIX	Residential Zone XIX	[Symbol]
Residential Zone XX	Residential Zone XX	[Symbol]
Residential Zone XXI	Residential Zone XXI	[Symbol]
Residential Zone XXII	Residential Zone XXII	[Symbol]
Residential Zone XXIII	Residential Zone XXIII	[Symbol]
Residential Zone XXIV	Residential Zone XXIV	[Symbol]
Residential Zone XXV	Residential Zone XXV	[Symbol]
Residential Zone XXVI	Residential Zone XXVI	[Symbol]
Residential Zone XXVII	Residential Zone XXVII	[Symbol]
Residential Zone XXVIII	Residential Zone XXVIII	[Symbol]
Residential Zone XXIX	Residential Zone XXIX	[Symbol]
Residential Zone XXX	Residential Zone XXX	[Symbol]

Zone	Description	Symbol
Residential Zone I	Residential Zone I	[Symbol]
Residential Zone II	Residential Zone II	[Symbol]
Residential Zone III	Residential Zone III	[Symbol]
Residential Zone IV	Residential Zone IV	[Symbol]
Residential Zone V	Residential Zone V	[Symbol]
Residential Zone VI	Residential Zone VI	[Symbol]
Residential Zone VII	Residential Zone VII	[Symbol]
Residential Zone VIII	Residential Zone VIII	[Symbol]
Residential Zone IX	Residential Zone IX	[Symbol]
Residential Zone X	Residential Zone X	[Symbol]
Residential Zone XI	Residential Zone XI	[Symbol]
Residential Zone XII	Residential Zone XII	[Symbol]
Residential Zone XIII	Residential Zone XIII	[Symbol]
Residential Zone XIV	Residential Zone XIV	[Symbol]
Residential Zone XV	Residential Zone XV	[Symbol]
Residential Zone XVI	Residential Zone XVI	[Symbol]
Residential Zone XVII	Residential Zone XVII	[Symbol]
Residential Zone XVIII	Residential Zone XVIII	[Symbol]
Residential Zone XIX	Residential Zone XIX	[Symbol]
Residential Zone XX	Residential Zone XX	[Symbol]
Residential Zone XXI	Residential Zone XXI	[Symbol]
Residential Zone XXII	Residential Zone XXII	[Symbol]
Residential Zone XXIII	Residential Zone XXIII	[Symbol]
Residential Zone XXIV	Residential Zone XXIV	[Symbol]
Residential Zone XXV	Residential Zone XXV	[Symbol]
Residential Zone XXVI	Residential Zone XXVI	[Symbol]
Residential Zone XXVII	Residential Zone XXVII	[Symbol]
Residential Zone XXVIII	Residential Zone XXVIII	[Symbol]
Residential Zone XXIX	Residential Zone XXIX	[Symbol]
Residential Zone XXX	Residential Zone XXX	[Symbol]



Northport Residential Expansion Mer Municipality

Design: J.P. Theron (27772014)
Land Use Change: Macroplan Uyington
Date: 18-05-2015
Scale: 1:700

Detail Layout Plan U/MIE/NP/K3

Appendix A (2)

Layout Design 2 (Alternative Layout)

Option 4

Alternative 2



Noesilepot
Residential Expansion
Mer Municipality

Design: J.P. Theron (077782016)
Land Use Change: Macropian Urban
Date: 16-05-2015

Scale: 1:700

Detail Layout Plan
UM/IE/NP/K4



Proposed Land Uses in terms of Land Use Management...

Color & Numbers	Land Use Description	Form	Subclass of Form	Form Number
Solid Blue	Residential Zone I	1	1.1	1.1
Diagonal Blue Lines	Residential Zone II	2	2.1	2.1
Diagonal Yellow Lines	Residential Zone III	3	3.1	3.1
Diagonal Green Lines	Residential Zone IV	4	4.1	4.1
Diagonal Purple Lines	Residential Zone V	5	5.1	5.1
Diagonal Pink Lines	Residential Zone VI	6	6.1	6.1
Diagonal Light Blue Lines	Residential Zone VII	7	7.1	7.1
Diagonal Light Green Lines	Residential Zone VIII	8	8.1	8.1
Diagonal Light Purple Lines	Residential Zone IX	9	9.1	9.1
Diagonal Light Pink Lines	Residential Zone X	10	10.1	10.1
Diagonal Light Yellow Lines	Residential Zone XI	11	11.1	11.1
Diagonal Light Orange Lines	Residential Zone XII	12	12.1	12.1
Diagonal Light Green Lines	Residential Zone XIII	13	13.1	13.1
Diagonal Light Blue Lines	Residential Zone XIV	14	14.1	14.1
Diagonal Light Purple Lines	Residential Zone XV	15	15.1	15.1
Diagonal Light Pink Lines	Residential Zone XVI	16	16.1	16.1
Diagonal Light Yellow Lines	Residential Zone XVII	17	17.1	17.1
Diagonal Light Orange Lines	Residential Zone XVIII	18	18.1	18.1
Diagonal Light Green Lines	Residential Zone XIX	19	19.1	19.1
Diagonal Light Blue Lines	Residential Zone XX	20	20.1	20.1
Diagonal Light Purple Lines	Residential Zone XXI	21	21.1	21.1
Diagonal Light Pink Lines	Residential Zone XXII	22	22.1	22.1
Diagonal Light Yellow Lines	Residential Zone XXIII	23	23.1	23.1
Diagonal Light Orange Lines	Residential Zone XXIV	24	24.1	24.1
Diagonal Light Green Lines	Residential Zone XXV	25	25.1	25.1
Diagonal Light Blue Lines	Residential Zone XXVI	26	26.1	26.1
Diagonal Light Purple Lines	Residential Zone XXVII	27	27.1	27.1
Diagonal Light Pink Lines	Residential Zone XXVIII	28	28.1	28.1
Diagonal Light Yellow Lines	Residential Zone XXIX	29	29.1	29.1
Diagonal Light Orange Lines	Residential Zone XXX	30	30.1	30.1
Diagonal Light Green Lines	Residential Zone XXXI	31	31.1	31.1
Diagonal Light Blue Lines	Residential Zone XXXII	32	32.1	32.1
Diagonal Light Purple Lines	Residential Zone XXXIII	33	33.1	33.1
Diagonal Light Pink Lines	Residential Zone XXXIV	34	34.1	34.1
Diagonal Light Yellow Lines	Residential Zone XXXV	35	35.1	35.1
Diagonal Light Orange Lines	Residential Zone XXXVI	36	36.1	36.1
Diagonal Light Green Lines	Residential Zone XXXVII	37	37.1	37.1
Diagonal Light Blue Lines	Residential Zone XXXVIII	38	38.1	38.1
Diagonal Light Purple Lines	Residential Zone XXXIX	39	39.1	39.1
Diagonal Light Pink Lines	Residential Zone XL	40	40.1	40.1
Diagonal Light Yellow Lines	Residential Zone XLI	41	41.1	41.1
Diagonal Light Orange Lines	Residential Zone XLII	42	42.1	42.1
Diagonal Light Green Lines	Residential Zone XLIII	43	43.1	43.1
Diagonal Light Blue Lines	Residential Zone XLIV	44	44.1	44.1
Diagonal Light Purple Lines	Residential Zone XLV	45	45.1	45.1
Diagonal Light Pink Lines	Residential Zone XLVI	46	46.1	46.1
Diagonal Light Yellow Lines	Residential Zone XLVII	47	47.1	47.1
Diagonal Light Orange Lines	Residential Zone XLVIII	48	48.1	48.1
Diagonal Light Green Lines	Residential Zone XLIX	49	49.1	49.1
Diagonal Light Blue Lines	Residential Zone L	50	50.1	50.1
Diagonal Light Purple Lines	Residential Zone LI	51	51.1	51.1
Diagonal Light Pink Lines	Residential Zone LII	52	52.1	52.1
Diagonal Light Yellow Lines	Residential Zone LIII	53	53.1	53.1
Diagonal Light Orange Lines	Residential Zone LIV	54	54.1	54.1
Diagonal Light Green Lines	Residential Zone LV	55	55.1	55.1
Diagonal Light Blue Lines	Residential Zone LVI	56	56.1	56.1
Diagonal Light Purple Lines	Residential Zone LVII	57	57.1	57.1
Diagonal Light Pink Lines	Residential Zone LVIII	58	58.1	58.1
Diagonal Light Yellow Lines	Residential Zone LIX	59	59.1	59.1
Diagonal Light Orange Lines	Residential Zone LX	60	60.1	60.1
Diagonal Light Green Lines	Residential Zone LXI	61	61.1	61.1
Diagonal Light Blue Lines	Residential Zone LXII	62	62.1	62.1
Diagonal Light Purple Lines	Residential Zone LXIII	63	63.1	63.1
Diagonal Light Pink Lines	Residential Zone LXIV	64	64.1	64.1
Diagonal Light Yellow Lines	Residential Zone LXV	65	65.1	65.1
Diagonal Light Orange Lines	Residential Zone LXVI	66	66.1	66.1
Diagonal Light Green Lines	Residential Zone LXVII	67	67.1	67.1
Diagonal Light Blue Lines	Residential Zone LXVIII	68	68.1	68.1
Diagonal Light Purple Lines	Residential Zone LXIX	69	69.1	69.1
Diagonal Light Pink Lines	Residential Zone LXX	70	70.1	70.1
Diagonal Light Yellow Lines	Residential Zone LXXI	71	71.1	71.1
Diagonal Light Orange Lines	Residential Zone LXXII	72	72.1	72.1
Diagonal Light Green Lines	Residential Zone LXXIII	73	73.1	73.1
Diagonal Light Blue Lines	Residential Zone LXXIV	74	74.1	74.1
Diagonal Light Purple Lines	Residential Zone LXXV	75	75.1	75.1
Diagonal Light Pink Lines	Residential Zone LXXVI	76	76.1	76.1
Diagonal Light Yellow Lines	Residential Zone LXXVII	77	77.1	77.1
Diagonal Light Orange Lines	Residential Zone LXXVIII	78	78.1	78.1
Diagonal Light Green Lines	Residential Zone LXXIX	79	79.1	79.1
Diagonal Light Blue Lines	Residential Zone LXXX	80	80.1	80.1
Diagonal Light Purple Lines	Residential Zone LXXXI	81	81.1	81.1
Diagonal Light Pink Lines	Residential Zone LXXXII	82	82.1	82.1
Diagonal Light Yellow Lines	Residential Zone LXXXIII	83	83.1	83.1
Diagonal Light Orange Lines	Residential Zone LXXXIV	84	84.1	84.1
Diagonal Light Green Lines	Residential Zone LXXXV	85	85.1	85.1
Diagonal Light Blue Lines	Residential Zone LXXXVI	86	86.1	86.1
Diagonal Light Purple Lines	Residential Zone LXXXVII	87	87.1	87.1
Diagonal Light Pink Lines	Residential Zone LXXXVIII	88	88.1	88.1
Diagonal Light Yellow Lines	Residential Zone LXXXIX	89	89.1	89.1
Diagonal Light Orange Lines	Residential Zone LXXXX	90	90.1	90.1
Diagonal Light Green Lines	Residential Zone LXXXXI	91	91.1	91.1
Diagonal Light Blue Lines	Residential Zone LXXXXII	92	92.1	92.1
Diagonal Light Purple Lines	Residential Zone LXXXXIII	93	93.1	93.1
Diagonal Light Pink Lines	Residential Zone LXXXXIV	94	94.1	94.1
Diagonal Light Yellow Lines	Residential Zone LXXXXV	95	95.1	95.1
Diagonal Light Orange Lines	Residential Zone LXXXXVI	96	96.1	96.1
Diagonal Light Green Lines	Residential Zone LXXXXVII	97	97.1	97.1
Diagonal Light Blue Lines	Residential Zone LXXXXVIII	98	98.1	98.1
Diagonal Light Purple Lines	Residential Zone LXXXXIX	99	99.1	99.1
Diagonal Light Pink Lines	Residential Zone LXXXXX	100	100.1	100.1
Diagonal Light Yellow Lines	Residential Zone LXXXXXI	101	101.1	101.1

Symbol	Description
[Symbol]	Open Space Zone I
[Symbol]	Open Space Zone II
[Symbol]	Open Space Zone III
[Symbol]	Open Space Zone IV
[Symbol]	Open Space Zone V
[Symbol]	Open Space Zone VI
[Symbol]	Open Space Zone VII
[Symbol]	Open Space Zone VIII
[Symbol]	Open Space Zone IX
[Symbol]	Open Space Zone X
[Symbol]	Open Space Zone XI
[Symbol]	Open Space Zone XII
[Symbol]	Open Space Zone XIII
[Symbol]	Open Space Zone XIV
[Symbol]	Open Space Zone XV
[Symbol]	Open Space Zone XVI
[Symbol]	Open Space Zone XVII
[Symbol]	Open Space Zone XVIII
[Symbol]	Open Space Zone XIX
[Symbol]	Open Space Zone XX
[Symbol]	Open Space Zone XXI
[Symbol]	Open Space Zone XXII
[Symbol]	Open Space Zone XXIII
[Symbol]	Open Space Zone XXIV
[Symbol]	Open Space Zone XXV
[Symbol]	Open Space Zone XXVI
[Symbol]	Open Space Zone XXVII
[Symbol]	Open Space Zone XXVIII
[Symbol]	Open Space Zone XXIX
[Symbol]	Open Space Zone XXX
[Symbol]	Open Space Zone XXXI
[Symbol]	Open Space Zone XXXII
[Symbol]	Open Space Zone XXXIII
[Symbol]	Open Space Zone XXXIV
[Symbol]	Open Space Zone XXXV
[Symbol]	Open Space Zone XXXVI
[Symbol]	Open Space Zone XXXVII
[Symbol]	Open Space Zone XXXVIII
[Symbol]	Open Space Zone XXXIX
[Symbol]	Open Space Zone L
[Symbol]	Open Space Zone LI
[Symbol]	Open Space Zone LII
[Symbol]	Open Space Zone LIII
[Symbol]	Open Space Zone LIV
[Symbol]	Open Space Zone LV
[Symbol]	Open Space Zone LVI
[Symbol]	Open Space Zone LVII
[Symbol]	Open Space Zone LVIII
[Symbol]	Open Space Zone LIX
[Symbol]	Open Space Zone LX
[Symbol]	Open Space Zone LXI
[Symbol]	Open Space Zone LXII
[Symbol]	Open Space Zone LXIII
[Symbol]	Open Space Zone LXIV
[Symbol]	Open Space Zone LXV
[Symbol]	Open Space Zone LXVI
[Symbol]	Open Space Zone LXVII
[Symbol]	Open Space Zone LXVIII
[Symbol]	Open Space Zone LXIX
[Symbol]	Open Space Zone LXX
[Symbol]	Open Space Zone LXXI
[Symbol]	Open Space Zone LXXII
[Symbol]	Open Space Zone LXXIII
[Symbol]	Open Space Zone LXXIV
[Symbol]	Open Space Zone LXXV
[Symbol]	Open Space Zone LXXVI
[Symbol]	Open Space Zone LXXVII
[Symbol]	Open Space Zone LXXVIII
[Symbol]	Open Space Zone LXXIX
[Symbol]	Open Space Zone LXXX
[Symbol]	Open Space Zone LXXXI
[Symbol]	Open Space Zone LXXXII
[Symbol]	Open Space Zone LXXXIII
[Symbol]	Open Space Zone LXXXIV
[Symbol]	Open Space Zone LXXXV
[Symbol]	Open Space Zone LXXXVI
[Symbol]	Open Space Zone LXXXVII
[Symbol]	Open Space Zone LXXXVIII
[Symbol]	Open Space Zone LXXXIX
[Symbol]	Open Space Zone LXXXX
[Symbol]	Open Space Zone LXXXXI
[Symbol]	Open Space Zone LXXXXII
[Symbol]	Open Space Zone LXXXXIII
[Symbol]	Open Space Zone LXXXXIV
[Symbol]	Open Space Zone LXXXXV
[Symbol]	Open Space Zone LXXXXVI
[Symbol]	Open Space Zone LXXXXVII
[Symbol]	Open Space Zone LXXXXVIII
[Symbol]	Open Space Zone LXXXXIX
[Symbol]	Open Space Zone LXXXXX
[Symbol]	Open Space Zone LXXXXXI
[Symbol]	Open Space Zone LXXXXXII
[Symbol]	Open Space Zone LXXXXXIII
[Symbol]	Open Space Zone LXXXXXIV
[Symbol]	Open Space Zone LXXXXXV
[Symbol]	Open Space Zone LXXXXXVI
[Symbol]	Open Space Zone LXXXXXVII
[Symbol]	Open Space Zone LXXXXXVIII
[Symbol]	Open Space Zone LXXXXXIX
[Symbol]	Open Space Zone LXXXXXX



110 Properties created
101 Residential properties created

Consent to build granted for the proposed subdivisions, as indicated on this map, in terms of Article 48 of Act 7 of 1998 of the Interim Constitution.

Signature: _____
Municipal Engineer

Date: _____
Municipal Engineer

Reference: _____

MACROPLAN
Town Planners & Land Use Specialists
Stadsplanners en Grondplanners
P.O. Box 8877
Upington
064 332 4283
macroplan@mweb.co.za

COGHSTA
The South African Council for Geomatics Engineering and Surveying

Appendix A (3)

Layout Design 3 (Alternative Layout)

Option 2

Alternative 3



Neonlatou Residential Expansion Mer Municipality

Design: J. Theorich (059462010)

Land Use Change: Macroplan Layout

Date: 18-03-2015

Scale: 1:700

Doc: Detail Layout Plan U/MIE/NP/K2

COGHSTA
COGNITIVE GROUP HOLDINGS

MACROPLAN
Town Planners & Land Use Specialists
Specialists in Urban Design, Infrastructure, Spatial Planning and Land Use

T: 084 332 3642
F: 084 332 4283
E: macroplan@mweb.co.za

P.O. Box 987
Upington
8800

114 Properties created
105 Residential properties created

Consent is hereby granted for the proposed subdivisions, as indicated on the map, in terms of Act 18 of Act 7 of 1994 of the Northern Cape.

Appl: _____
I. Municipal Manager _____
A. Date _____
B. Reference _____

Local Administration

Local Authority

Local Council

Proposed Land Uses by Category

Color & Number	Land Use Description	Area (m²)	Area (ha)	% of Total
Yellow	Residential Zone I	114	0.114	100%
Green	Parks & Recreation Zone I	107	0.107	93.86%
Blue	Water	11	0.011	9.65%
Other	Other	0	0.000	0.00%
Total	Total	114	0.114	100%

Proposed Land Uses by Category

Color & Number	Land Use Description	Area (m²)	Area (ha)	% of Total
Yellow	Residential Zone I	114	0.114	100%
Green	Parks & Recreation Zone I	107	0.107	93.86%
Blue	Water	11	0.011	9.65%
Other	Other	0	0.000	0.00%
Total	Total	114	0.114	100%

Local Administration

Local Authority

Local Council

Proposed Land Uses by Category

Color & Number	Land Use Description	Area (m²)	Area (ha)	% of Total
Yellow	Residential Zone I	114	0.114	100%
Green	Parks & Recreation Zone I	107	0.107	93.86%
Blue	Water	11	0.011	9.65%
Other	Other	0	0.000	0.00%
Total	Total	114	0.114	100%

Local Administration

Local Authority

Local Council

Proposed Land Uses by Category

Color & Number	Land Use Description	Area (m²)	Area (ha)	% of Total
Yellow	Residential Zone I	114	0.114	100%
Green	Parks & Recreation Zone I	107	0.107	93.86%
Blue	Water	11	0.011	9.65%
Other	Other	0	0.000	0.00%
Total	Total	114	0.114	100%

Local Administration

Local Authority

Local Council

Local Administration

Local Authority

Local Council

Proposed Land Uses by Category

Color & Number	Land Use Description	Area (m²)	Area (ha)	% of Total
Yellow	Residential Zone I	114	0.114	100%
Green	Parks & Recreation Zone I	107	0.107	93.86%
Blue	Water	11	0.011	9.65%
Other	Other	0	0.000	0.00%
Total	Total	114	0.114	100%

Local Administration

Local Authority

Local Council

Appendix A (4)

Layout Design 4 (Alternative Layout)

Option 1

Alternative 4



Northrup Residential Expansion
Mier Municipality

Design: J. Theurich (056462010)
 Land Use Changes: Macroplan Uptown
 Date: 16-06-2015
 Scale: 1:700

Detail Layout Plan
UMIENP/K1



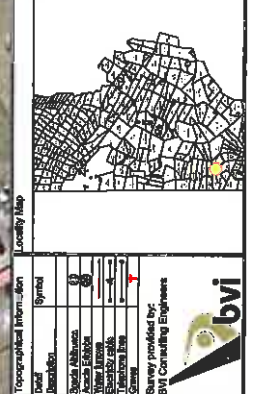
Proposed Land Use in Terms of Land Use Designation

Color & Number	Land Use Description	Code	Subsidiary Code	Area (m²)	Percentage
1-LUB	Residential Zone I	1	101		
2-LUB	Residential Zone II	2	102		
3-LUB	Residential Zone III	3	103		
4-LUB	Residential Zone IV	4	104		
5-LUB	Residential Zone V	5	105		
6-LUB	Residential Zone VI	6	106		
7-LUB	Residential Zone VII	7	107		
8-LUB	Residential Zone VIII	8	108		
9-LUB	Residential Zone IX	9	109		
10-LUB	Residential Zone X	10	110		
11-LUB	Residential Zone XI	11	111		
12-LUB	Residential Zone XII	12	112		
13-LUB	Residential Zone XIII	13	113		
14-LUB	Residential Zone XIV	14	114		
15-LUB	Residential Zone XV	15	115		

Topographical Information

Code	Description	Area (m²)	Percentage
1	Grass		
2	Open Space		
3	Water		
4	Other		

Survey provided by: bvi Consulting Engineers



Municipal Administration

115 Properties created
 108 Residential properties created

Consent is hereby granted for the proposed subdivision, as indicated on the map, in terms of Article 49 of Act 7 of 1998 of the Northern Cape.

Sign: _____
 A. Municipal Manager
 B. Clerk
 C. Chairperson

MACROPLAN
 Town Planners & Land Use Specialists
 Specialists in Geographical Information Systems

T: 054 332 3642
 F: 054 332 4265
 E: macroplan@mweb.co.za

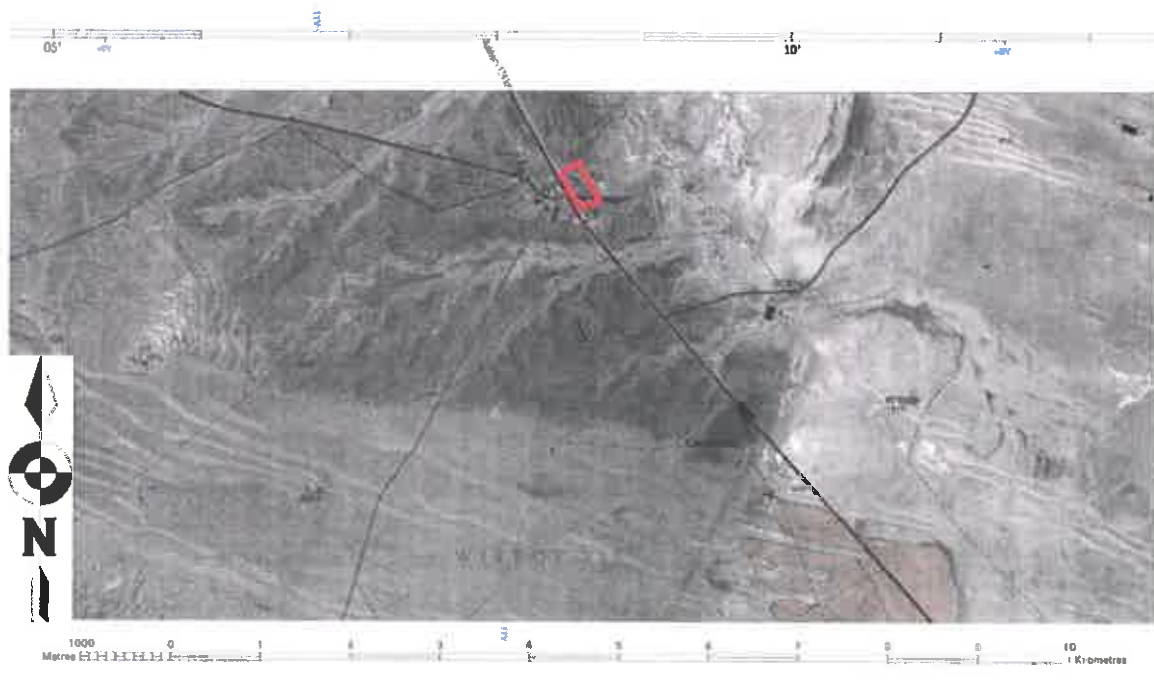
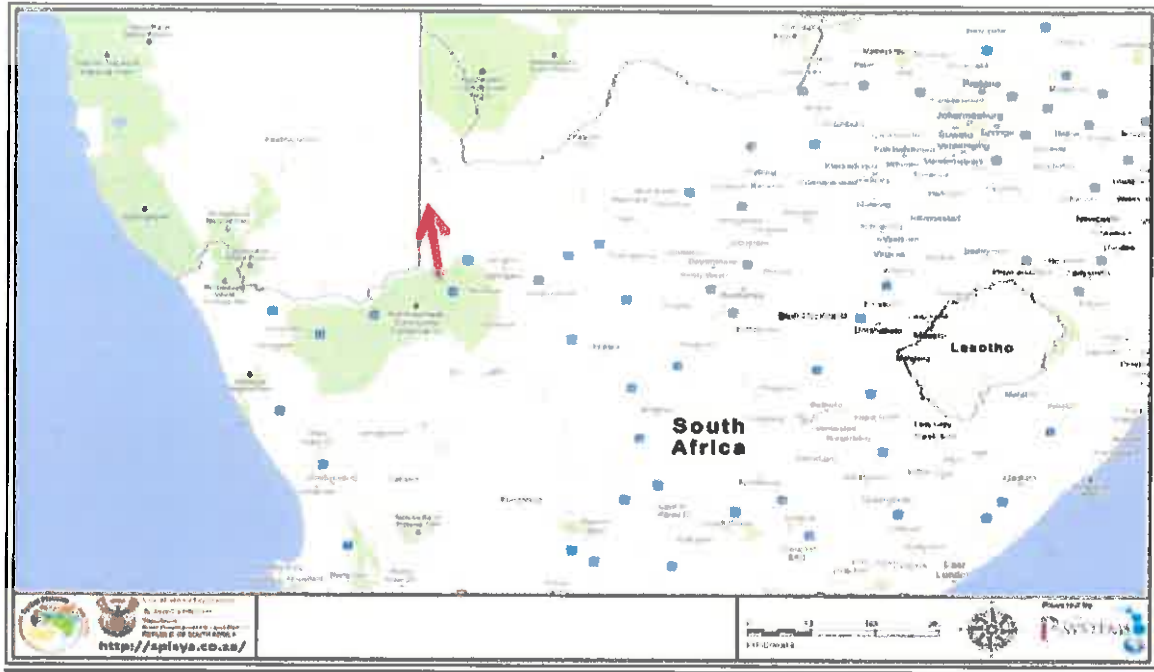
P.O. Box 887
 Uptown
 8000

SASHISA
 Environmental & Land Use Consultants

Appendix A (5)

Locality Maps

Noenieput Housing Development – Locality Maps





APPENDIX B

SITE PHOTOGRAPHS

Site photographs

Aerial image of the site indicating photograph locations and the directions in which they were taken (yellow arrows). The location of the entire site is indicated by the green polygon.



© 2012 Google
© 2012 AirGIS (Pty) Ltd
Image ID: 20121CDNG1
Imagery Date: 11/1/2009 2005
27°30'39.897"S 20°08'27.25"E elev: 820 m
Eye alt: 1.82 km

Site photographs

Photographs



Photo 1: south east direction, taken from the entrance of the property along the boundary line next to the road



Photo 2: north east direction, taken from the entrance of the property looking toward the opposite side.



Photo 3: north west direction, taken from the entrance of the property along the boundary line next to the road



Photo 4: south east direction, looking toward the police station across the property



Photo 5: west, north west direction, looking toward the westerly corner of the site



Photo 6: south west direction, looking toward the entrance of the property



Photo 7: south, south west direction, looking from the opposite side of the site toward the road



Photo 8: north west direction, taken across the property, from the eastern corner of the site looking toward the western corner.



Photo 9: north east direction, taken from centre of the site looking inland, away from town



Photo 10: south east direction, taken from centre of site looking toward the police station (southern corner of the site)



Photo 11: east, south east direction, taken from the centre of the site looking toward the centre of the southern boundary/side



Photo 12: south east direction, taken from the centre of the site, looking toward the southern corner of the site



Photo 13: south; south west direction, from the centre of the site looking toward the road



Photo 14: north west direction, taken from central point, looking toward the northern boundary across the site



Photo 15: west, north west direction, taken from a central location looking toward the entrance/road side across the site.

APPENDIX C

FACILITY ILLUSTRATIONS

Facility Illustrations

No illustrations of the proposed facilities are available at this stage. BVI Consulting Engineers and Macroplan Town Planners, contracted to the development/construction of the Noenieput Housing Project will be consulted in this regard to provide illustrations for the Final Basic Assessment Report.

APPENDIX D

BIODIVERSITY AND HERITAGE IMPACT ASSESSMENTS

Appendix D (1)

Biodiversity Impact Assessment



PB Consult
Ecological & Botanical management services

NOENIEPUT

Proposed low cost housing

Mier Municipality Residential Project, Northern Cape

DRAFT BIODIVERSITY & BOTANICAL SCAN

A preliminary Biodiversity & Botanical scan in order to identify significant environmental features (and to identify the need for additional studies if required).

January, 2013



PREPARED BY: PB Consult

PREPARED FOR: ENVIROAFRICA CC

REQUESTED BY: MIER LOCAL MUNICIPALITY

©

INDEPENDENCE & CONDITIONS

PB Consult is an independent consultant to BVI Engineers and has no interest in the activity other than fair remuneration for services rendered. Remunerations for services are not linked to approval by decision making authorities and PB Consult have no interest in secondary or downstream development as a result of the authorization of this proposed project. There are no circumstances that compromise the objectivity of this report. The findings, results, observations and recommendations given in this report are based on the author's best scientific and professional knowledge and available information. PB Consult reserve the right to modify aspects of this report, including the recommendations if new information become available which may have a significant impact on the findings of this report.

RELEVANT QUALIFICATIONS & EXPERIENCE OF THE AUTHOR

Mr. Peet Botes holds a BSc. (Hons.) degree in Plant Ecology from the University of Stellenbosch (Nature Conservation III & IV as extra subjects). Since qualifying with his degree, he had worked for more than 20 years in the environmental management field, first at the Overberg Test Range (a Division of Denel) managing the environmental department of OTB and being responsible for developing and implementing an ISO14001 environmental management system, ensuring environmental compliance, performing environmental risk assessments with regards to missile tests and planning the management of the 26 000 ha of natural veld, working closely with CapeNature (De Hoop Nature Reserve). In 2005 he joined Enviroscientific, an independent environmental consultancy specializing in wastewater management, botanical and biodiversity assessments, developing environmental management plans and strategies, environmental control work as well as doing environmental compliance audits and was also responsible for helping develop the biodiversity part of the Farming for the Future audit system implemented by Woolworths. During his time with Enviroscientific he performed more than 400 biodiversity and environmental legal compliance audits. During 2010 he joined EnviroAfrica in order to move back to the biodiversity aspects of environmental management. Experience with EnviroAfrica includes EIA applications, biodiversity assessment, botanical assessment, environmental compliance audits and environmental control work.

Mr. Botes is also a registered Professional Environmental and Ecological Scientists at SACNASP (South African Council for Natural Scientific Professions) as required in terms of Section 18(1)(a) of the Natural Scientific Professions Act, 2003, since 2005.

Yours sincerely,



P.J.J. Botes (*Pr.Sci.Nat: 400184/05*)
Registered Professional Environmental and Ecological Scientist

SUMMARY - MAIN CONCLUSIONS

PREPARED BY:		PREPARED FOR:
PB Consult 22 Buitekant Street Bredasdorp 7280		EnviroAfrica CC PO Box 5367 Helderberg 7135
CONTACT PERSON		CONTACT PERSON
Peet Botes Cell: +(27)82 – 921 5949 Fax: +(27)86 – 415 8595 Email: pbconsult@vodamail.co.za		Mr. Bernard de Witt Tel: +(27) 21 – 851 1616 Fax: +(27) 86 – 512 0154 Email: bernard@enviroafrica.co.za
SUMMARY OF POSSIBLE SIGNIFICANT BIODIVERSITY FEATURES		
Geology & soils	Geology & soils vary only slightly in the larger study area.	No special features have been encountered (e.g. true quartz patches or broken veld) and the impact on geology and soils is expected to be very localised and low. Possible Impact = low
Land use and cover	Covered by natural veld in relative good condition. Utilized for grazing.	The area is been utilised for grazing and as sporting fields. Species diversity is low and represents a herbaceous drought resistant low shrubland very sparsely vegetated with a low percentage of grasses. The grazing potential is expected to be low. Possible Impact is considered to be low and localised.
Vegetation types	Kalahari Karroid Shrubland	Classified as "Least threatened", but according to the draft Siyanda EMF, shrubland in good condition is given a high conservation priority, and it falls within a proposed conservation area. In addition its environmental sensitivity classification was rated as medium. This is, however, offset by the general poor condition of the veld. Possible impact is considered as low-medium (very localised).
Conservation priority areas.	In terms of the draft Siyanda EMF	According to the EMF the site may fall within a proposed conservation area. But offset by the general poor condition of the site (and a relative small area). Possible impact is considered as low-medium (but localised).
Sensitivity index	In terms of the draft Siyanda EMF	According to the EMF, the proposed site falls within an area identified as of medium environmental sensitivity (3-5), but offset by the general poor condition of the veld. Possible Impact low-medium and localised.
Protected plant species	Protected species observed. Three	Three protected plant species was observed. The number of species per broad geographical levels for these biomes is low and it is therefore very unlikely that any single species will be confined to the proposed site alone. However, these species will be impacted (especially the Aizoaceae). Both the <i>Aloe</i> and the Mesembryanthemaceae could be easily transplanted (single individuals), but the Aizoaceae are to numerous. Possible impact = medium.
Fauna & Avi-fauna	The site is used for live-stock grazing and is in close proximity to constant human activity.	Although natural fauna and avi-fauna may still be present, it is expected that it would be limited to avi-fauna, insects and maybe some reptile's species. The activity is thus not expected to have a significant impact on fauna or avi-fauna. Possible Impact low.
Rivers & wetlands	A number of smaller streams and drainage lines were observed on both sites.	There are no formal rivers on either of the proposed sites, but a number of drainage channels and small streams draining water from the area were encountered. Although most of these drainage lines are basically storm water channels with little riparian vegetation they should still be seen as significant biodiversity features, which should be protected by adequate river corridors or suitably incorporated within the storm water planning for these town additions. . Impact low.
Invasive alien infestation	<i>Prosopis</i> species was observed on both sites.	All invasive alien species must be removed during the construction. Possible Impact = positive.
RECOMMENDATION		
<p>The proposed site is located on degraded natural veld in relative poor condition. The number of species per broad geographical levels for this biome is low and it is therefore very unlikely that any single species will be confined to any of the proposed sites alone. However, a number of protected species were encountered. The impact on individual species is thus regarded as low-medium. The impact on sensitive habitats, however, is regarded as low-medium, because of the fact that shrubland has a high conservation value within the draft Siyanda EMF and the site may be located within a future conservation area as well as the presence of various small drainage lines/streams. On the other hand, because of the localised nature of the impact the impact on ecosystem function is regarded as very low, cumulative impact on ecology is regarded as very low and finally the impact on economic use of the vegetation is regarded as very low.</p> <p>With the available information to the author's disposal it is recommended that the project be approved, but that all mitigation measures described in this document is implemented.</p>		

CONTENTS

Independence & conditions	i
Relevant qualifications & experience of the author	i
Contents	iii
1. Introduction: Noenieput	5
1.1 Terms of reference	6
2. Applicable legislation	7
2.1 Northern Cape Nature Conservation Act 9 of 2009	8
3. Definitions & Abbreviations	9
3.1 Definitions	9
3.2 Abbreviations	11
4. References	12
5. Project Description	13
5.1 Methods	14
6. Description of Environment	15
6.1 Location & Layout	15
6.2 Topography	17
6.3 Climate	17
6.4 Geology & Soils	17
6.5 Landuse and Cover	18
6.6 Broad scale vegetation types expected	18
6.6.1 Kalahari Karroid Shrubland	19
6.7 Vegetation encountered	19
6.7.1 Noenieput site	20
6.7.2 Flora	21
6.8 Significant and/or protected plant Species	21
6.9 Fine-Scale mapping (CBA's)	22
6.9.1 Summary of findings according to the EMF	23
6.10 Fauna and Avi-fauna	25
6.11 Rivers and wetlands	25
6.12 Invasive alien infestation	26
7.1 Significant biodiversity features encountered	28
8. Biodiversity Assessment	29
8.1 Nature of the Impact	29
8.1.1 Parameters of the impact	29
8.1.2 Possible issues / impacts associated with construction	30
8.2 Evaluation of Significant Impacts	30
8.2.1 Threatened or protected ecosystems	30
8.2.2 Special habitats	31
8.2.3 Corridors and or conservancy networks	32
8.2.4 Threatened or endangered species	32
8.2.5 Protected species	33
8.2.6 Direct impacts	33
8.2.7 Indirect impacts	34
8.2.8 Cumulative impacts	35
8.3 The no-go option	35
9. Recommendations & Impact Minimization	36
9.1 Impact minimization	37
9.1.1 General	37
9.1.2 Site specific	37

LIST OF FIGURES

Figure 1: Google image indicating the route walked during the site visit as well as GPS reference points taken (if any)	14
Figure 2: General location of the town within South Africa.....	15
Figure 3: Showing the town in relation to the immediate surrounding towns	16
Figure 4: Google image indicating the proposed new development site for Noenieput	16
Figure 5: Average rainfall, temperature and night-time temperatures for Noenieput (www.saexplorer.co.za)	17
Figure 6: Vegetation map of SA, Lesotho and Swaziland (2006).....	18
Figure 8: Google overview of the proposed Noenieput site 2	20
Figure 9: A copy of the Draft Vegetation Assessment Conservation Priorities in the Siyanda EMF (Location mark with red arrow)	24
Figure 10: South African National Veldfire Risk Classification (March 2010)	27

LIST OF TABLES

Table 1: Identified need for low cost housing in the Mier Municipality (BVi, 2011)	13
Table 2: GPS coordinates for Noenieput, Local settlement and the proposed new development	15
Table 3: Vegetation status according to the 2004 National Spatial Biodiversity Assessment.....	19
Table 4: List of species encountered on the sites (excluding grass species)	21
Table 5: NFA protected tree species with a geographical distribution that may overlap the broader study area	22
Table 6: Summary of biodiversity features encountered and their possible significance.....	28

LIST OF PHOTOS

Photo 1: Noenieput: View of the vegetation encountered (west to east)	19
Photo 2: Noenieput – view of the vegetation north to south	20

1. INTRODUCTION: NOENIEPUT

The Mier Municipality is situated adjacent to one of the world's largest conservation areas, the Kgalagadi Transfrontier Park. The municipal area of Mier includes the communities of Rietfontein, Philandersbron, Groot Mier, Klein Mier, Loubos, Welkom, Askham and Noenieput. One of the world's ancient tribes, the IKhomani San, own farms and still reside in the Mier area. The lack of fresh water is a major constraint on development in the Mier area, since water pumped from underground sources is of poor quality, as a result most of the area is used for grazing by livestock or game. More than half of the 6 000 people living in Mier have never left the area. Even so, the biggest asset of Mier is the rich culture and history of its people (www.greenkalahari.co.za).

The municipality has indicated that there is a pressing need for houses, especially low cost houses, as well as serviced plots within all of the communities within the Mier Municipal Area. This is reflected by the housing backlog contained in the 2009/10 version of the Mier IDP (BVI, 2011). The Mier Municipality residential project, are proposing the development of a number of low cost housing at the towns of Rietfontein, Groot Mier, Askham, Welkom, Loubos and Noenieput to alleviate some of the housing problems of the Municipality.

Noenieput is a very small town located the Northern Cape (Mier Local Municipality) in a region with low population densities. The town, which is predominantly residential does, supports other central functions such as places of worship and educational facilities to support the local community and its surroundings. Noenieput is located on the Portion 18 of the Farm Witkop No. 350, Noenieput (Mier Municipality), and is owned by the Mier Municipality. The town is situated in the western section of the Mier Municipality just east of the Namibian border, approximately 170 km north-north-west of Upington. The proposed new development site will be located to the east of the town and just north of the Noenieput Police station. No formal land use management system has been adopted by the Mier Municipality at this stage and the land use rights on the property may be described as being undetermined. The Mier Municipality plan to rezone and subdivide the proposed site, in order to establish new residential Ervin in response to the growing housing need in the municipality.

The specific location has been chosen for the following reasons:

- It is located on Municipal owned land.
- The specific location was chosen by the Municipality and local town planners in order to try and integrate the new Ervin with the rest of Noenieput.
- It is suitably placed in terms of services.

Since, the study area is still covered by natural veld a Biodiversity Scan of the proposed location was commissioned in order to evaluate the environmental impact(s) of the proposed project and to establish whether further and more in depth studies would be required.

1.1 TERMS OF REFERENCE

EnviroAfrica (Pty) Ltd was appointed by BVi Consulting Engineers (Upington) as the independent Environmental Assessment Practitioner (EAP) to undertake the Basic Assessment (EIA) Process for the proposed development. PB Consult was appointed by EnviroAfrica to conduct a Biodiversity Scan of the proposed site.

PB Consult was appointed within the following terms of reference:

- Complete a Biodiversity Scan of the proposed site in order to determine whether any significant features will be impacted as a result of the proposed development.
- Make recommendations on impact minimisation should it be required
-
- Consider short- to long-term implications of impacts on biodiversity and highlight irreversible impacts or irreplaceable loss of species.

The study includes the following:

- A brief discussion of the local environment in order to give some background on the ecological factors influencing the ecological drivers associated with the specific area.
- A brief discussion of the vegetation types expected and encountered with emphasis on protected species encountered.
- A species list encountered during the site visit.
- Determination of the occurrence, or possible occurrence of threatened or sensitive plant species, and sensitive plant communities, on the basis of the field survey and records obtained from the South African National Biodiversity Institute (SANBI) and available literature.
- Assessment of habitat sensitivity, incorporating faunal distribution on the hand of the field survey and from available literature.
- An evaluation of the potential impact of the proposed project on habitat and species using Van Schoor's method for impact evaluation.
- A discussion of significant impacts focusing on possible mitigation and amendments to the development proposal.

2. APPLICABLE LEGISLATION

Constitution of the Republic of South Africa (1996): of special relevance in terms of environment is section 24

Conservation of Agricultural Resources Act 43 of 1983 (CARA): supports conservation of natural agricultural resources (soil, water, plant biodiversity) by maintaining the production potential of the land and combating/preventing erosion; for example, by controlling or eradicating declared weeds and invader plants.

Hazardous Substances Act 15 of 1973: to control substances that may cause injury, ill-health, or death through their toxic, corrosive, irritant, strongly sensitizing or flammable nature, or by the generation of pressure

National Environmental Management Act 107 of 1998 (as amended): replaces the Environmental Conservation Act (ECA) and establishes principles for decision-making on matters affecting the environment, and for matters connected therewith.

- **Environmental Impact Assessment Regulations (R543 of 2010):** procedures to be followed for application to conduct a listed activity.

National Environmental Management: Air Quality Act 39 of 2004 (NEMAQA): replaces the Atmospheric Pollution Prevention Act (No. 45 of 1965).

National Environmental Management: Biodiversity Act 10 of 2004 (NEMBA): supports conservation of plant and animal biodiversity, including the soil and water upon which it depends.

- **National list of ecosystems that are threatened and in need of protection (GN 1002 of 9 December 2011).**

National Environmental Management: Protected Areas Act 57 of 2003 (as amended Act 31 of 2004) (NEMPAA): To provide for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes.

National Environmental Management: Waste Act 59 of 2008 (NEMWA): To reform the law regulating waste management in order to protect health and the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development.

- **List of Waste Management Activities that have, or are likely to have a detrimental effect on the environment (GN 718 of 3 July 2009):** Identifies activities in respect of which a waste management license is required.

National Forests Act 84 of 1998 (as amended): supports sustainable forest management and the restructuring of the forestry sector.

- **List of protected tree species (GN 716 of 7 September 2012)**

National Heritage Resources Act 25 of 1999: supports an integrated and interactive system for the management of national heritage resources, including supports soil, water and animal and plant biodiversity.

National Veld and Forest Fire Act 101 of 1998 (NVFFA): protects soil, water and plant life through the prevention and combating of veld, forest, and mountain fires

National Water Act 36 of 1998 (NWA): promotes the protection, use, development, conservation, management, and control of water resources in a sustainable and equitable manner.

Northern Cape Nature Conservation Act 9 of 2009 (NCNCA): To provide for the sustainable utilization of wild animals, aquatic biota and plants.

2.1 NORTHERN CAPE NATURE CONSERVATION ACT 9 OF 2009

On the 12th of December 2011, the new Northern Cape Nature Conservation Act 9 of 2009 (NCNCA) came into effect, which also provides for the sustainable utilization of wild animals, aquatic biota and plants. Schedule 1 and 2 of the act give extensive lists of specially protected and protected fauna and flora species in accordance with this act. The NCNCA is a very important Act in that it put a whole new emphasis on a number of species not previously protected in terms of legislation.

It also put a new emphasis on the importance of species, even within vegetation classified as "Least Threatened" (in accordance with GN 1002 of 9 December 2011, promulgated in terms of the National Environmental Management Biodiversity Act 10 of 2004). Thus even though a project may be located within a vegetation type or habitat previously not considered under immediate threat, special care must still be taken to ensure that listed species (fauna & flora) are managed correctly.

3. DEFINITIONS & ABBREVIATIONS

3.1 DEFINITIONS

Construction: means the period of the project during which the actual works are carried out, deemed to include site establishment, site preparation, the works, maintenance period and decommissioning.

Construction site: means the area influenced and affected by the construction activities or under the control of the Contractor often referred to as "the Site".

Contaminated water: means water contaminated by the Contractor's activities, e.g. concrete water and runoff from plant/ personnel wash areas.

Environment: means the surroundings within which humans exist and that are made up of:

- the land, water and atmosphere of the earth;
- micro-organisms, plant and animal life;
- any part of the combination of the above two bullets and the interrelationships between them;
- the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being

Environmental Aspect: any element of any construction activity, product or services that can interact with the environment.

Environmental Control Officer: a suitably qualified environmental agent responsible for overseeing the environmental aspects of the Construction phase of the EMP.

Environmental Impact: any change to the environment, whether adverse or beneficial, wholly or partially resulting from any construction activity, product or services.

No-Go Area(s): an area of such (environmental/aesthetical) importance that no person or activity are allowed within a designated boundary surrounding this area.

Owner: the owner, or dedicated person, responsible for the management of the property on which the proposed activity will be performed.

Solid waste: means all solid waste, including construction debris, chemical waste, excess cement/concrete, wrapping materials, timber, tins and cans, drums, wire, nails, food and domestic waste (e.g. plastic packets and wrappers).

Precautionary principle: means the basic principle, that when in doubt or having insufficient or unreliable information on which to base a decision, to then limit activities in order to minimise any possible environmental impact.

Watercourse: in this report the author uses a very simplified classification system to define the difference between rivers, streams or a drainage lines encountered in the Northern Cape.

- **River:** A river is a natural watercourse with a riverbed wider than 3m, usually freshwater, flowing toward an ocean, a lake, a sea or another river. In a few cases, a river simply flows into the ground or dries up completely before reaching another body of water. The flow could be seasonal or permanent.

- **Stream**: A small river or natural watercourse with a riverbed of less than 3 m, usually freshwater, flowing toward an ocean, a lake, a sea or another river. In a few cases, a river simply flows into the ground or dries up completely before reaching another body of water. The flow could be seasonal or permanent.
- **Drainage line**: A very small and poorly defined watercourse, mostly on relatively flat areas, which only flows for a short period after heavy rains, usually feeding into a stream or river or dries up completely before reaching another body of water.

3.2 ABBREVIATIONS

BGIS	Biodiversity Geographical Information System
CARA	Conservation of Agricultural Resources Act 43 of 1983
CBA	Critical Biodiversity Areas (Municipal)
DAFF	Department of Agriculture Forestry and Fisheries
DEA	Department of Environmental Affairs
DENC	Department of Environment and Nature Conservation (Northern Cape Province)
EAP	Environmental assessment practitioner
EIA	Environmental impact assessment
EMF	(Municipal) Environmental Management Framework
EMP	Environmental management plan
NCNCA	Northern Cape Nature Conservation Act 9 of 2009
NEMA	National Environmental Management Act, Act 107 of 1998
NEMAQA	National Environmental Management Air Quality Act 39 of 2004
NEMBA	National Environmental Management Biodiversity Act, Act 10 of 2004
NEMPAA	National Environmental Management Protected Areas Act 57 of 2003
NEMWA	National Environmental Management Waste Act 59 of 2008
NFA	National Forests Act 84 of 1998
NSBA	National Spatial Biodiversity Assessment
NVFFA	National Veld and Forest Fire Act 101 of 1998
NWA	National Water Act 36 of 1998
SABIF	South African Biodiversity Information Facility
SANBI	South African National Biodiversity Institute
SIBIS	SANBI's Integrated Biodiversity Information System
SKEP	Succulent Karoo Ecosystem Project
WWTW	Wastewater Treatment Works

4. REFERENCES

- Acocks, J.P.H. 1953.** Veld types of South Africa. *Mem. Bot. Surv. S. Afr.* No. 28: 1-192.
- Alias, D. & Milton S. 2003.** A collation and overview of research information on *Boscia albitrunca* (shepherd's tree) and identification of relevant research gaps to inform protection of the species. Research report done for the Department of Water affairs and Forestry. 18th August 2003.
- BVi. 2011.** Business plan for Phase 1A: Mier Municipal housing project. Unpublished report (U10139C) prepared by BVi Consulting Engineers (Upington) for the Mier Municipality. August 2011.
- De Villiers C.C., Driver, A., Brownlie, S., Clark, B., Day, E.G., Euston-Brown, D.I.W., Helme, N.A., Holmes, P.M., Job, N. & Rebelo, A.B. 2005.** Fynbos Forum Ecosystem Guidelines for Environmental Assessment in the Western Cape. Fynbos Forum, c/o Botanical Society of South Africa: Conservation Unit, Kirstenbosch, Cape Town.
- Forsyth, G.G., FJ Kruger, F.J., & Le Maitre, D.C. 2010:** National veldfire risk assessment: analysis of exposure of social, economic and environmental assets to veldfire hazards in South Africa. CSIR Report No: CSIR/NRE/ECO/ER/2010/0023/C. March 2010.
- Government Notice No 1002, 9 December 2011.** National list of Ecosystems that are threatened and in need of protections. In terms of section 52(1)(a) of the National Environmental Management Biodiversity Act, 2004 (Act 10 of 2004).
- Low, A.B. & Rebelo, A.(T.)G. (eds) 1996.** *Vegetation of South Africa, Lesotho and Swaziland.* Dept of Environmental Affairs and Tourism, Pretoria.
- Mucina, L. & Rutherford, M.C. (eds.) 2006.** The vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* 19. South African National Biodiversity Institute, Pretoria.
- Raimondo, D., Von Staden, L., Foden, W., Victor, J.E., Helme, N.A., Turner, R.C., Kamundi, D.A. & Manyama, P.A. (eds) 2009.** Red List of South African plants 2009. *Strelitzia* 25. South African National Biodiversity Institute, Pretoria.
- SANBI. 2006.** South African National Botanical Institute: Biodiversity GIS Home. <http://bgis.sanbi.org> (as updated)
- SANBI. 2012.** Red List of South African Plants version 2012.1. Downloaded from Redlist.sanbi.org.
- Seymour, C. & Milton, S. 2003:** A collation and overview of research information on *Acacia erioloba* (Camelthorn) and identification of relevant research gaps to inform protection of the species. Research report done for the Department of Water affairs and Forestry. 31st August 2003.
- Siyanda Draft EMF Report. 2008.** Draft Environmental Framework report for the Siyanda District Municipality. A joined project between Siyanda District Municipality, Department of Tourism, Environment and Conservation, Department of Environmental Affairs and Tourism, Northern Cape. In association with MetroGIS & Mosakong Management. 2008.
- Van Rooyen, M.W., Van Rooyen, N.; Bothma, J. du P. & Van Den Berg, H. M. 2008.** Landscapes in the Kalahari Gemsbok National Park, South Africa. *Koedoe* [online]. 2008, vol.50, n.1, pp. 99-112. ISSN 0075-6458.

5. PROJECT DESCRIPTION

The municipality has indicated that there is a pressing need for houses, especially low cost houses, as well as serviced plots within all of the communities within the Mier Municipal Area. This is reflected by the housing backlog contained in the 2009/10 version of the Mier IDP. The backlog within the Mier Municipal area was 1380 (Refer to Table 1). The Mier Municipality does not have the financial- and/or human resources available to initiate this development process on their own. The municipality is supported by COGHSTA (Northern Cape) and BVi Consulting Engineers.

The need in terms of housing of phase 1a, covered in the BVi (2011) business plan, in the Mier area are as follows:

Table 1: Identified need for low cost housing in the Mier Municipality (BVi, 2011)

Description	Project	Houses	Town Planning	Geo-Tech	Land Surveying	EIA (1A)
Fill in Houses	Rietfontein	114		114		
	Loubos	55		55		
	Philandersbron	70		70		
	Klein Mier	55		55		
	Groot Mier	40		40		
	Welkom	70		70		
	Askham	100		100		
New Developments (Greenfields)	Groot Mier	178	178	178	178	178
	Welkom	103	103	103	103	103
	Loubos	138	138	138	138	138
	Rietfontein	107	107	107	107	107
	Askham	100	100	100	100	100
Totals		1130	626	1130	626	626

The Mier Residential Project aims at providing for the need for additional formal Ervin and housing through "in-fill" development within existing build-up areas and the servicing of new areas for formal Ervin (Greenfields). Since the Mier townships were formally planned and developed, before the current EIA legislation, no EIA are needed for existing formal towns ("in fill" development). However, environmental authorization is needed for the development of the new or "greenfield" developments. This biodiversity scan is only applicable to these latter developments.

Greenfield development will entail the construction and placement of all services (water, electricity and sewerage systems) and road infrastructure to service the new town extensions. Since the need for such housing is very apparent this biodiversity study will mainly aim to minimise the environmental impact through correct placement.

5.1 METHODS

Desktop studies were conducted, coupled by a physical site visit during September 2012. The timing of the site visit was reasonable in that essentially all perennial plants were identifiable and although the possibility remains that a few species may have been missed, the author is confident that a fairly good understanding of the biodiversity status in the area was obtained.

The survey was conducted by walking through the site and examining, marking and photographing any area of interest (Refer to Figure 1 underneath). Confidence in the findings is high. During the site visit the author endeavoured to identify and locate all significant biodiversity features, including rivers, streams or wetlands, special plant species and or specific soil conditions which might indicate special botanical features (e.g. rocky outcrops or silcrete patches).

Figure 1: Google Image indicating the route walked during the site visit as well as GPS reference points taken (if any)



6. DESCRIPTION OF ENVIRONMENT

The aim of this description is to put the study area in perspective with regards to all probable significant biodiversity features which might be encountered within the study area. The study area has been taken as the proposed site and its immediate surroundings. During the desktop study significant biodiversity features associated with the larger surroundings was identified, and were taken into account. The desktop portion of the study also informs as to the biodiversity status as classified in the National Spatial Biodiversity Assessment (2004) as well as in the recent National list of ecosystems that are threatened and in need of protection (GN 1002, December 2011), promulgated in terms of the National Environmental Management Biodiversity Act (NEM: BA), Act 10 of 2004. It also aims to take Municipal Environmental Management Frameworks (EMF's) and Municipal Critical Biodiversity Areas (CBA's) into account where applicable.

6.1 LOCATION & LAYOUT

Noenieput is situated in the central western section of the Mier Municipality on the old road linking Noenieput with Groot-Mier, northeast of Noenieput and approximately 264 km north-north-west of Upington in the Northern Cape Province (Siyanda District Municipality) (Figure 2 - 4).

Figure 2: General location of the town within South Africa

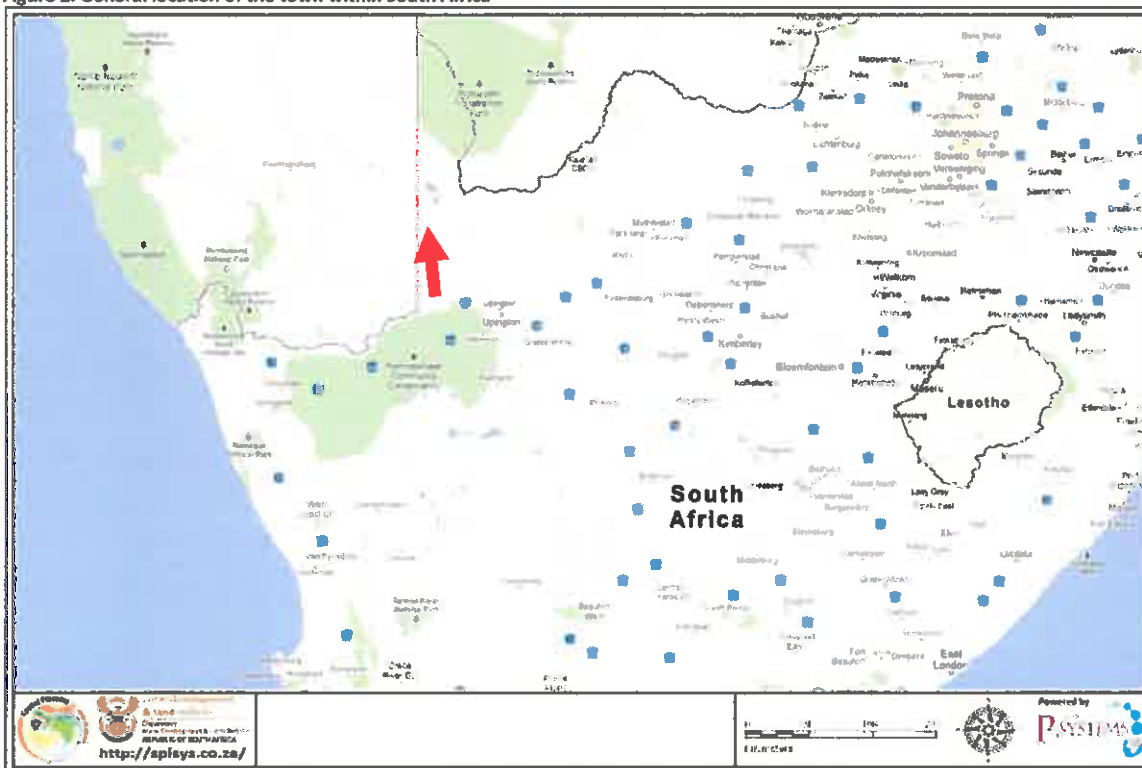
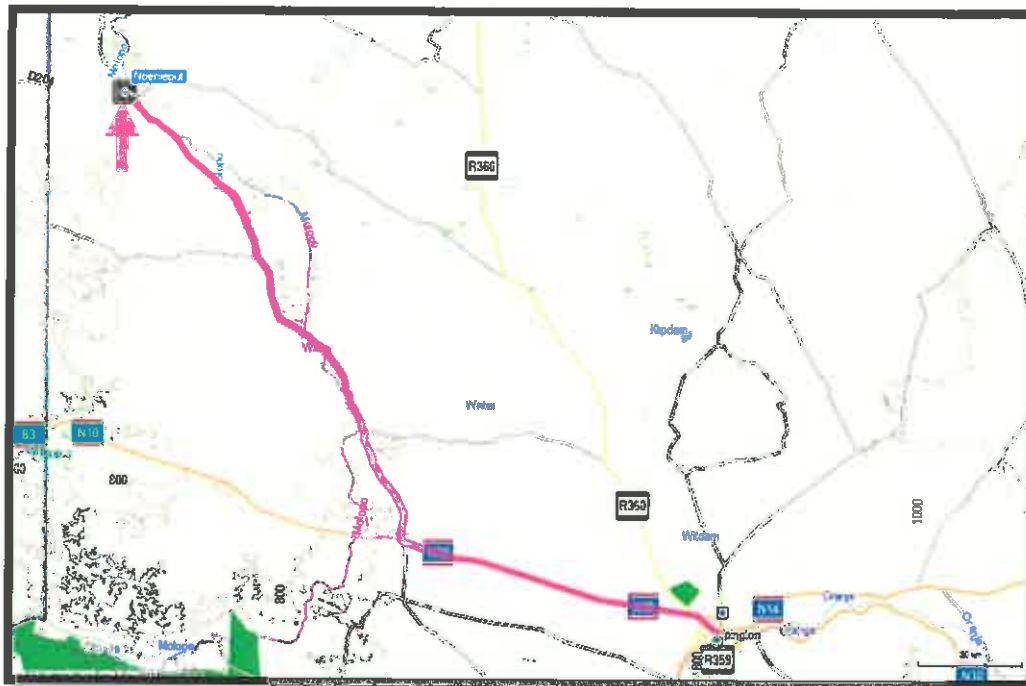


Table 2: GPS coordinates for Noenieput, Local settlement and the proposed new development

DESCRIPTION	LATITUDE AND LONGITUDE	ALTITUDE
Noenieput	S27 30 39.6 E20 08 30.9	823 m

Figure 3: Showing the town in relation to the immediate surrounding towns



The Municipality in consultation with local town planners proposes to locate the new Ervin on a portion of the Farm 585, Mier Municipality (land owned by the Municipality).

Figure 4: Google image indicating the proposed new development site for Noenieput



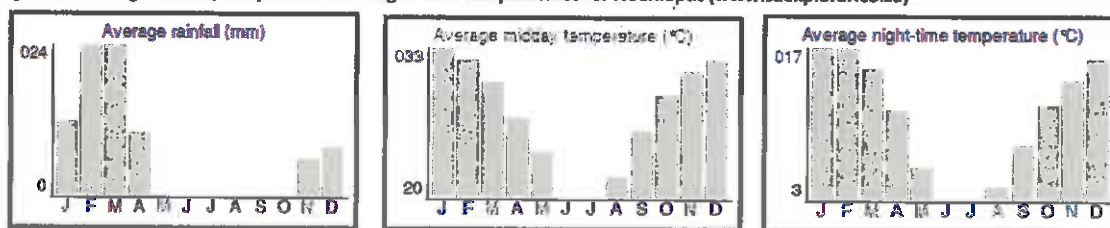
6.2 TOPOGRAPHY

The proposed site is situated towards the east of the main town of Noenieput, just north of Police station. The terrain is very flat with a slight fall from northwest to northeast (with an average slope of only 0.9%), towards the Molopo River (approximately 2 km east of the site). Intermittent streams are located just south of Noenieput (draining towards the Molopo). There are no formal streams or wetlands on the proposed property itself, but two very small drainage lines (furrows) traverse the property from northwest to south east. Just north of the proposed property another slightly larger drainage line / small stream are to be found. Elevation data for the northern section varies from 816 - 818 m.

6.3 CLIMATE

All regions with a rainfall of less than 400 mm per year are regarded as arid. Separate information for Noenieput could not be found, but the climate is expected to be very similar to that of Askham for which the following holds true. Askham normally receives about 84 mm of rain per year, with most rainfall occurring mainly during summer. The chart below (lower left) shows the average rainfall values for Noenieput per month. It receives the lowest rainfall (0 mm) in May and the highest (24 mm) in February. The temperatures at Noenieput is typical of a desert climate in summer reaching between approximately 30°- 40°C during the day and the middle twenties in the evening. Winter goes to the other end of the scale with daylight temperatures measuring around 20°C and the evenings between 0°- 5°C. The monthly distribution of average daily maximum temperatures (centre chart below) shows that the average midday temperatures for Noenieput range from 20°C in June to 33°C in January. The region is the coldest during July when the mercury drops to 2.9°C on average during the night. Consult the chart below (lower right) for an indication of the monthly variation of average minimum daily temperatures (www.saexplorer.co.za).

Figure 5: Average rainfall, temperature and night-time temperatures for Noenieput (www.saexplorer.co.za)



6.4 GEOLOGY & SOILS

According to Mucina and Rutherford (2006) and the SANBI Biodiversity Geographical Information System, the geology and soils for this area is described as Cenozoic Kalahari Group sands and small patches also on calcrete outcrops and scree on scarps of intermittent rivers (mekgacha). Dwyka Group tillites outcrops found in places. The soils are deep, red-yellow, apedal, freely drained, with a high base status, typical of Ae land type. No special soils or geology features (e.g. quartz patches or broken veld), which could support special botanical features, were observed during the site visit (or are expected).

6.5 LANDUSE AND COVER

The proposed housing project location is situated within the Nama Karoo Biome (Bushman land). All of these properties are used mainly for livestock grazing and or game farming (Refer to Figure 4). No intensive farming has been observed. It is expected that natural fauna and avi-fauna may still be present, although limited or impacted as a result of the urban activities of the nearby town. Very little game is expected to be encountered (none was observed).

Although the site is still covered by natural vegetation, the vegetation shows signs of degradation. A portion of this specific area was levelled at some stage and presumably used for sporting fields. There are no formal streams or wetlands on the proposed property itself, but two very small drainage lines (furrows) traverse the property from northwest to south east.

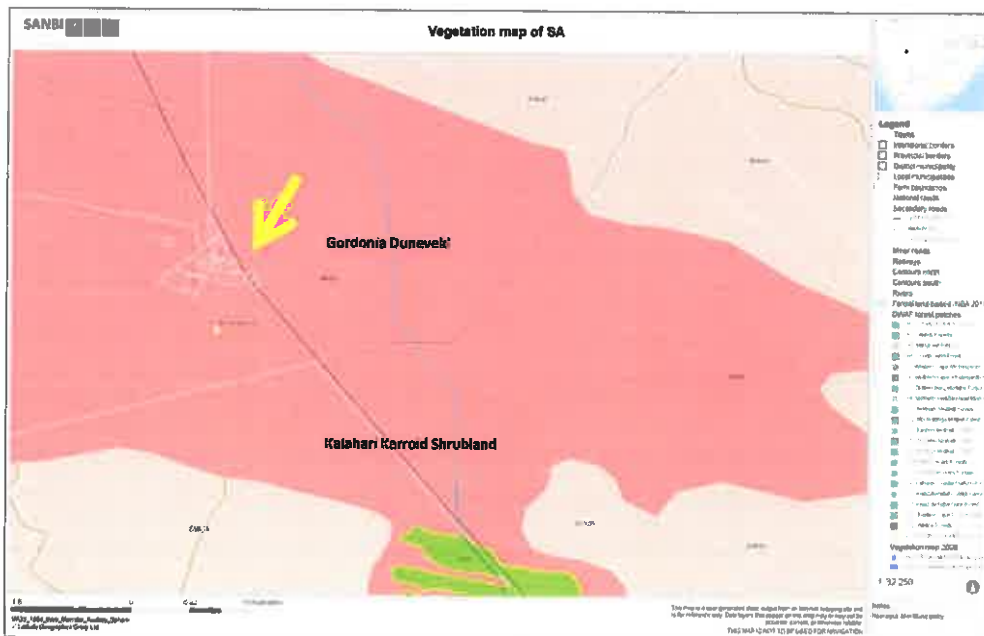
The main biodiversity features of this area are:

- Natural veld still supported by these sites
- The seasonal drainage lines found on the site.

6.6 BROAD SCALE VEGETATION TYPES EXPECTED

In accordance with the 2006 Vegetation map of South Africa, Lesotho and Swaziland (Mucina & Rutherford, 2006) only one broad vegetation types is expected on the sites, namely Kalahari Karroid Shrubland (Pink in Figure 7).

Figure 6: Vegetation map of SA, Lesotho and Swaziland (2006)



According to the *National list of ecosystems that are threatened and in need of protection* (GN 1002, December 2011) Kalahari Karroid Shrubland are classified as “Least Threatened”.

Table 3: Vegetation status according to the 2004 National Spatial Biodiversity Assessment

VEGETATION TYPE	NATIONAL STATUS 2011	REMAINING	CONSERVATION TARGET	FORMALLY CONSERVED
Kalahari Karroid Shrubland	Least Threatened	99.2 %	21 %	0.1 %

6.6.1 *Kalahari Karroid Shrubland*

The vegetation type is described as low Karroid shrubland on flat, gravel plains. Karoo elements meet here with northern floristic elements, indicating a transition to the Kalahari region and sandy soils.

Important taxa includes the Small Tree: *Acacia mellifera*, *Parkinsonia africana* and *Boscia foetida*; Tall Shrubs: *Rhigozum trichotomum*; Low Shrubs: *Hermannia spinosa*, *Limeum aethiopicum*, *Phaeoptilum spinosum*, *Aizoon schellenbergii*, *Aptosimum albomarginatum*, *A. lineare*, *A. marlothii*, *A. spinescens*, *Barleria rigida*, *Hermannia modesta*, *Indigorera heterotricha*, *Monechma genistifolium*, *Tephrosia dregeana* etc.; Herbs: *Dicoma capensis*, *Chamaesyce inaequilatera*, *Amaranthus praetermissus*, *Barleria lichtensteiniana*, *Cucumis africanus*, *Geigeria ornativa*, *Hermannia abrotanoides*, *Monsonia umbellate*, *Sesamum capense* etc.; Succulent Herbs: *Giseka africana*, *G. pharnacioides* and *Trianthema parvifolia*; Graminoids: *Aristida adensionis*, *Enneapogon desvauxii*, *Eragrostis annulata*, *E. homomalla*, *E. porosa*, *Schmidtia kalahariensis*, *Stipagrostis anomala*, *S. ciliata*, *S. uniplumis* and *Tragus racemosus*.

6.7 VEGETATION ENCOUNTERED

The following is a discussion of the vegetation and other significant environmental features encountered on site. The author did not attempt to identify all species but rather concentrated on identifying and marking protected plant species or any other biodiversity feature of significance.

Photo 1: Noenieput: View of the vegetation encountered (west to east)



6.7.1 Noenieput site

The natural veld encountered on the site can be described as a very sparse disturbed karroid type vegetation, on a very rocky substrate, dominated by one of the *Tetragonia* species (yellow plants in Photo 1). Vegetation structure is much compromised as if the whole site was disturbed at some stage. Vegetation especially sparse and more disturbed towards the east of the site. Species diversity was low (Photo 1).

Photo 2: Noenieput – view of the vegetation north to south



Figure 7: Google overview of the proposed Noenieput site 2



The following species were encountered: The property was dominated by one of the *Tetragonia* species (possibly *Tetragonia* cf. *sarcophylla*), one of the *Psilocaulon* species, *Rhigozum trichotomum*, *Lycium cinereum*,

Geigeria filifolia, *Aptosimum spinescens*, *Aloe hereroensis*, *Parkinsonia africana* (nect to stream), *Acacia mellifera* (very small individual), *Eriochepalus cf. decussatus*, *Kleinia longifolia* and *Tylecodon* species.

6.7.2 Flora

Please note that this study never intended to be full botanical assessment. However, a scan of significant species was done during the site visit, and even though the author does not claim that all species encountered were identified, all efforts were made to do just that. The site showed low species diversity with succulent herbaceous plants dominating the landscape. Grasses were almost absent.

Table 4: List of species encountered on the sites (excluding grass species)

SPECIES NAME	COMMON NAME	FAMILY	STATUS
<i>Acacia mellifera</i>	Swarthaak	FABACEAE	
<i>Aloe hereroensis</i>	Sandaalwyn	ASPHODELACEAE	Protected in terms of NCNCA (schedule 2)
<i>Aptosimum spinescens</i>	Doringviooltjie	SCROPHULARIACEAE	
<i>Eriochepalus cf. decussatus</i>	Kapokbos	ASTERACEAE	
<i>Geigeria filifolia</i>	Verweerbos	ASTERACEAE	
<i>Hermannia species</i>		STERCULIACEAE	
<i>Kleinia longiflora</i>	Sjambokbos	ASTERACEAE	
<i>Lycium cinereum</i>	Kriedoring	SOLANACEAE	
<i>Parkinsonia africana</i>	Wildegroenhaar boom	CAESALPINIOIDEAE	
<i>Prosopis grandulosa</i>	Honey mesquite	FABACEAE	Category 2 invader
<i>Psilocaulon sp.</i>	Asbos	MESEMBRYANTHEMACEAE	Protected in terms of NCNCA (schedule 2)
<i>Rhigozum trichotomum</i>	Driedoring	BIGNONIACEAE	
<i>Tetragonia sp.</i>	Kinkelbos	AIZOACEAE	Protected in terms of NCNCA (schedule 2)
<i>Tylecodon sp</i>		CRUSSULACEAE	Protected in terms of NCNCA (schedule 2)
<i>Cf. Thesium lineatum</i>	Witstormbos	SANTALACEAE	
<i>Ziziphus mucronata</i>	Blinkblaar wag-'n-bietjie	RHAMNACEAE	

6.8 SIGNIFICANT AND/OR PROTECTED PLANT SPECIES

The National Forests Act (NFA) of 1998 (Act 84 of 1998) provides for the protection of forests as well as specific tree species (GN 71 6 of 7 September 2012). In addition to the NFA the Northern Cape Nature Conservation Act 9 of 2009 (NCNCA) came into effect on the 12th of December 2011, which also provides for the sustainable utilization of wild animals, aquatic biota and plants. Schedule 1 and 2 of the act give extensive lists of specially protected and protected fauna and flora species in accordance with this act.

Table 5: NFA protected tree species with a geographical distribution that may overlap the broader study area

SPECIES NAME	COMMON NAME	TREE NO.	DISTRIBUTION
<i>Acacia erioloba</i>	Camel Thorn Kameeldoring	168	In dry woodlands next to water courses, in arid areas with underground water and on deep Kalahari sand
<i>Boscia albitrunca</i>	Shepherds-tree Witgat/Matopie	130	Occurs in semi-desert and bushveld, often on termitaria, but is common on sandy to loamy soils and calcrete soils.
<i>Acacia haematoxylon</i>	Grey Camel Thorn Vaalkameeldoring	169	In bushveld, usually on deep Kalahari sand between dunes or along dry watercourses.

Four protected species in terms of the NCNCA was encountered namely:

- *Aloe hereroensis* (all *Aspodelaceae*, apart from *Aloe ferox* are protected)
- *Psilocaulon* sp. (all of the *Mesembryanthemaceae* is protected)
- *Tetragonia* sp. (all *Aizoaceae* are protected)
- *Tylecodon* sp. (all *Crussulaceae* are protected)

6.9 FINE-SCALE MAPPING (CBA'S)

Although a draft version of the Siyanda District Municipal, Environmental Management Framework (EMF) is available it has not been approved or published. No fine-scale mapping is as yet available for this area and as a result no critical biodiversity areas or biodiversity support areas has been promulgated for this area.

However, the proposed priorities for conservation in the Siyanda District is depicted on Maps 12a (Refer Figure 15) and 12b within this document, based on local occurrence, the national conservation target, the national ecosystem status and the national protection level of the vegetation types. A proposal is made for the prioritisation of vegetation types in the Siyanda District.

The landcover of the Siyanda district reflects the results of the 2000 national landcover determination and is depicted on Map 13 from which it is evident that most of the area is in a natural state and the most significant spatial impact on the environment has come from mining which occupies an area of almost 7% of the total area.

A sensitivity index is shown on Map 14 of the Draft EMP. The main factors that were used to compile the index include the following:

- The erosion potential of soil where soils with a high erosion potential were awarded a sensitivity of 1;
- The conservation priority of veld types for veld types with a medium conservation priority were awarded a sensitivity count of 1 those with a high conservation priority were awarded a count of 2 and those with a very high conservation priority were awarded a count of 3;
- Topographical areas with a high variance in shape and form were awarded a sensitivity count of 1;
- All watercourses, drainage lines and pans (including a 32m buffer on either side) were awarded a sensitivity count of 2; and

- All transformed areas were awarded a sensitivity count of -1.

Environmental control zones are depicted on Map 15 of the EMF. The purpose of environmental control zones is to indicate areas that require a specific type or regime of control due to unique environmental elements that occur in these areas. It may or may not be linked to the application of EIA legislation and should be dealt with at a more strategic level where it should serve as a guide for decision-making and planning.

6.9.1 Summary of findings according to the EMF

According to the Siyanda Environmental Management Framework the proposed site falls within the following categories according to the various maps.

Conservation priority areas: According to Map 12a the site falls within an area regarded as having a High (3) conservation priority (shrublands). According to Map 12b, site 2 may fall within a proposed conservation area.

Landcover: According to Map 13 of the Draft EMF, the proposed site falls within the area marked as Shrubland.

Sensitivity Index: According to Map 14 of the Draft EMF, the proposed site falls within an area identified as of relative medium-high environmental sensitivity (3-5) in an index which starts at Transformed and then are given values of 0-8 (8 being of high environmental sensitivity).

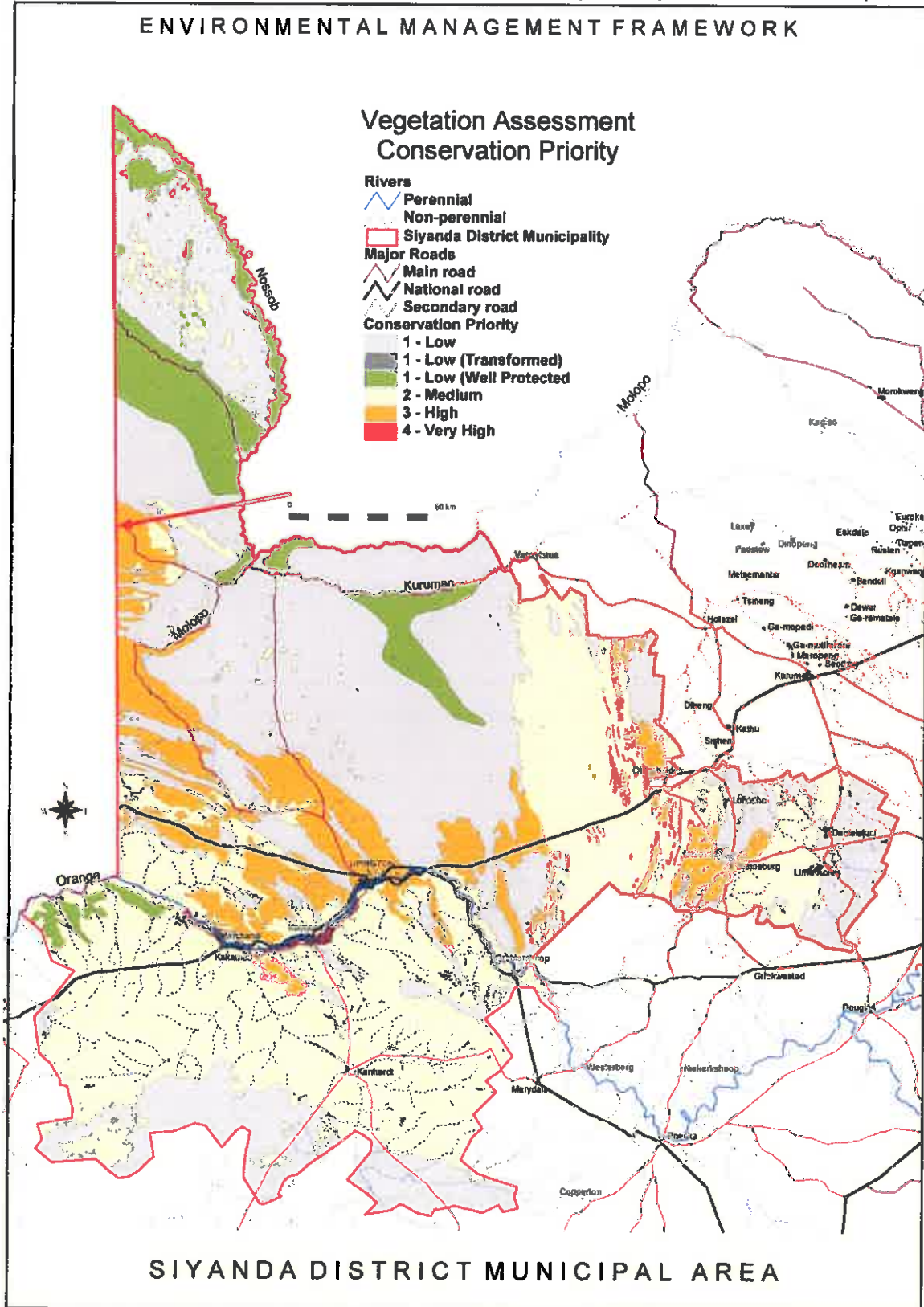
Control Zones: According to Map 15, the proposed site location falls within control zone 3 area, which is described as a potential high to very high vegetation conservation areas.

In summary, Shrubland in the Siyanda EMF was given a high conservation value and should be considered for conservation. In accordance with the Draft Siyanda EMF, Noenieput and its surrounding, falls within large proposed future conservation area.

Thus in the case of the Noenieput site, the relative high conservation status of the Karroid Shrubland must be evaluated against the degraded state of the propose development site. Ideally remaining Karroid Shrubland in good condition must be avoided and considered for conservation.

However, in the case of the Noenieput site, the proposed site cannot be described as in good condition. Evidence of disturbance is quite evident and is also displayed by the vegetation composition.

Figure 8: A copy of the Draft Vegetation Assessment Conservation Priorities In the Siyanda EMF (Location mark with red arrow)



6.10 FAUNA AND AVI-FAUNA

Although natural fauna and avi-fauna may still be present, it is expected that it would be limited to avi-fauna, insects and maybe some reptile's species. Because of the proximity to the town of Noenieput and the current land-use it is not expected that game will be encountered in the vicinity of the site (none has been observed). However, it is a known fact that many animal and bird species associate with large *Acacia erioloba* as well as *Boscia albitrunca* trees and the removal of mature trees of these species will have an impact on such wildlife (even though very localised).

Mammals: The site falls within the distribution range of approximately 50 mammal species indicating moderate diversity. Human activity in the area is medium-high and it is highly unlikely that a fair representation of these mammals will be found on the property. Even though the impact will be permanent, it is highly unlikely that it will pose a significant impact on mammal species and as a result the impact is deemed negligible.

Reptiles: The site falls within the distribution range of approximately 30 reptile species, indicating low diversity. As a result of the open planes on site the reptile composition is likely to be dominated by species which inhabit open areas, such as snakes, lizards and geckos. Human activity in the area is medium-high and it is highly unlikely that large numbers of these species will be present on site. As such, the impact on reptiles should be negligible.

Amphibians: The site falls within the distribution range of approximately 10 amphibian species. However, no suitable breeding places were observed on the proposed site and it is highly unlikely that the proposed development will have any significant impact on amphibian species. In addition, most amphibians require perennial water and will thus not be affected at all.

Avi-fauna: The site falls within the distribution range of approximately 200 bird species known from the broad area. But because of the medium-high human activity it is not expected that a fair representation of these species will be encountered on site or its immediate vicinity. Apart from the possible impact on mature trees (mentioned above) the proposed activity is not expected to have a significant impact on avi-fauna. However, it remains important that all larger indigenous trees must be protected wherever possible in order to minimise the possible impact (although localised) on bird species.

6.11 RIVERS AND WETLANDS

Rivers maintain unique biotic resources and provide critical water supplies to people. South Africa's limited supplies of fresh water and irreplaceable biodiversity are very vulnerable to human mismanagement. Multiple environmental stressors, such as agricultural runoff, pollution and invasive species, threaten rivers that serve the world's population. River corridors are important channels for plant and animal species movement,

because they link different valleys and mountain ranges. They are also important as a source of water for human use. Vegetation on riverbanks needs to be maintained in order for rivers themselves to remain healthy, thus the focus is not just on rivers themselves but on riverine corridors.

With the exception of the Orange River all the rivers in the Siyanda District Municipal area are non-perennial rivers and the last recordings of flows in the lower reaches of the Molopo and Kuruman Rivers were in 1933 and again in the 1974/5 and 1975/6 season. There are no formal rivers near the proposed site, but the Molopo River is located approximately 2 km east of the site. Intermitted streams are located just south of Noenieput (draining towards the Molopo). There are no formal streams or wetlands on the proposed property itself, but two very small drainage lines (furrows) traverse the property from northwest to south east (one of which seems to be a manmade drainage channel). Just north of the proposed property another slightly larger drainage line / small stream are to be found.

6.12 INVASIVE ALIEN INFESTATION

A number of *Prosopis grandulosa* (a category 2 invader) were encountered scattered on both sites. According to regulation 15 and 16 of CARA all category 2 plants has the proven potential of becoming invasive, but may have certain beneficial properties. The regulations makes provisions for category 2 plants to be retained in special areas demarcated for that purpose, but those occurring outside demarcated areas must be controlled.

In this case all *Prosopis* individuals should be removed on both sites and its immediate surroundings.

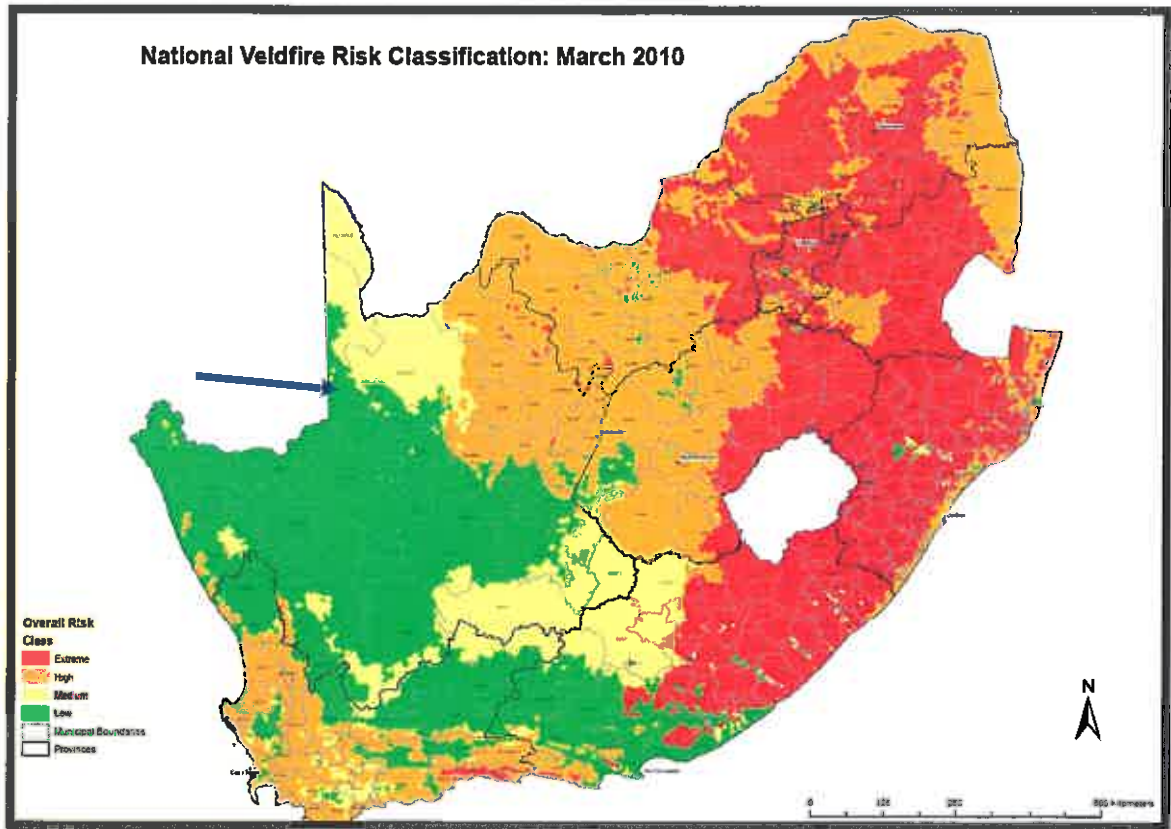
7. VELD FIRE RISK

Noenieput is situated on the border between South Africa and Namibia and supports Kalahari Karroid Shrubland. Kalahari Karroid Shrubland is part of the Nama Karoo Biome, which is not prone to fire (Mucina & Rutherford, 2006).

The revised veldfire risk classification (Forsyth, 2010) in terms of the National Veld and Forest Fire Act 101 of 1998, was promulgated in March 2010. The purpose of the revised fire risk classification is to serve as a national framework for implementing the National Veld and Forest Fire Act, and to provide a basis for setting priorities for veldfire management interventions such as the promotion of and support to Fire Protection Associations. In the fire-ecology types and municipalities with High to Extreme fire risk, comprehensive risk management strategies are needed.

Noenieput is situated in an area supporting Karroid shrubland, which has been classified with a **low fire risk classification**. Although, the fire risk is low it is still important that during construction and operation the site must adhere to all the requirements of the local Fire Protection Association (FPA) if applicable, or must adhere to responsible fire prevention and control measures.

Figure 9: South African National Veldfire Risk Classification (March 2010)



7.1 SIGNIFICANT BIODIVERSITY FEATURES ENCOUNTERED

The table underneath gives a summary of biodiversity features encountered during the site visit and a short discussion of their possible significance in terms of regional biodiversity targets.

Table 6: Summary of biodiversity features encountered and their possible significance

BIODIVERSITY ASPECT	SHORT DESCRIPTION	SIGNIFICANCE RATING
Geology & soils	Geology & soils vary only slightly in the larger study area.	No special features have been encountered (e.g. true quartz patches or broken veld) and the impact on geology and soils is expected to be very localised and low. Possible Impact = low
Land use and cover	Covered by natural veld in relative good condition. Utilized for grazing.	The area is been utilised for grazing and as sporting fields. Species diversity is low and represents a herbaceous drought resistant low shrubland very sparsely vegetated with a low percentage of grasses. The grazing potential is expected to be low. Possible Impact is considered to be <u>low and localised</u>.
Vegetation types	Kalahari Karroid Shrubland	Classified as "Least threatened", but according to the draft Siyanda EMF, shrubland in good condition is given a high conservation priority, and it falls within a proposed conservation area. In addition its environmental sensitivity classification was rated as medium. This is, however, offset by the general poor condition of the veld. Possible impact is considered as <u>low-medium</u> (very localised).
Conservation priority areas.	In terms of the draft Siyanda EMF	According to the EMF the site may fall within a proposed conservation area. But offset by the general poor condition of the site (and a relative small area). Possible impact is considered as <u>low-medium</u> (but localised).
Sensitivity Index	In terms of the draft Siyanda EMF	According to the EMF, the proposed site falls within an area identified as of medium environmental sensitivity (3-5), but offset by the general poor condition of the veld. Possible <u>Impact low-medium and localised</u>.
Protected plant species	Protected species observed. Three	Three protected plant species was observed. The number of species per broad geographical levels for these biomes is low and it is therefore very unlikely that any single species will be confined to the proposed site alone. However, these species will be impacted (especially the Aizoaceae). Both the <i>Aloe</i> and the Mesembryanthemaceae could be easily transplanted (single individuals), but the Aizoaceae are too numerous. Possible impact = medium.
Fauna & Avi-fauna	The site is used for live-stock grazing and is in close proximity to constant human activity.	Although natural fauna and avi-fauna may still be present, it is expected that it would be limited to avi-fauna, insects and maybe some reptile's species. The activity is thus not expected to have a significant impact on fauna or avi-fauna. Possible Impact <u>low</u>.
Rivers & wetlands	A number of smaller streams and drainage lines were observed on both sites.	There are no formal rivers on either of the proposed sites, but a number of drainage channels and small streams draining water from the area were encountered. Although most of these drainage lines are basically storm water channels with little riparian vegetation they should still be seen as significant biodiversity features, which should be protected by adequate river corridors or suitably incorporated within the storm water planning for these town additions. . Impact <u>low</u>.
Invasive alien infestation	<i>Prosopis</i> species was observed on both sites.	All invasive alien species must be removed during the construction. Possible Impact = positive.
Erosion	Karroid Shrubland is not considered prone to erosion.	Possible impact = low

8. BIODIVERSITY ASSESSMENT

Biological diversity, or biodiversity, refers to the variety of life on Earth. As defined by the United Nations Convention on Biological Diversity, it includes diversity of ecosystems, species and genes, and the ecological processes that support them. Natural diversity in ecosystems provides essential economic benefits and services to human society—such as food, clothing, shelter, fuel and medicines—as well as ecological, recreational, cultural and aesthetic values, and thus plays an important role in sustainable development. Biodiversity is under threat in many areas of the world. Concern about global biodiversity loss has emerged as a prominent and widespread public issue.

The objective of this study was to evaluate the biological diversity associated with the study area in order to identify significant environmental features which should be avoided during development activities and or to evaluate short and long term impact and possible mitigation actions in context of the proposed development.

As such the report aim to evaluate the biological diversity of the area using the Ecosystem Guidelines for Environmental Assessment (De Villiers *et. al.*, 2005), with emphasis on:

- Significant ecosystems
 - Threatened or protected ecosystems
 - Special habitats
 - Corridors and or conservancy networks
- Significant species
 - Threatened or endangered species
 - Protected species

8.1 NATURE OF THE IMPACT

The construction of the proposed low cost housing entails:

- the layout planning and location of the proposed housing within the larger site;
- clearing of the footprint (including topsoil);
- installation of Municipal works (water, sewerage and electricity) and associated infrastructure (e.g. roads);
- construction of housing; and
- rehabilitation of the construction footprint (outside the designated housing area) on completion of the project.

8.1.1 Parameters of the impact

Extent of the impact: Local.

Duration of the impact: Permanent

- Probability or likelihood:** The probability or likelihood that the impact will occur if the project is approved is very likely.
- Severity of the impact:** The severity of the impact is considered to be medium to low depending on the impact minimisation actions implemented.

8.1.2 Possible issues / impacts associated with construction

The following possible environmental impacts were identified while doing the site visit and discussing the project with the engineers and land-owners:

- The possible impact on natural vegetation with a high conservation value, which might also be located within a future conservation area (Draft Siyanda EMF).
- The likely impact on protected species.
- The possible impact on small drainage lines or furrows (one of which appears to be manmade).
- Establishment of a construction associated infrastructure during the construction phase.
- Temporary storage areas.
- Waste management and control.

8.2 EVALUATION OF SIGNIFICANT IMPACTS

The main drivers in this vegetation type would be grazing pressure (herbivore), and could determine plant community composition and occurrence of species. Grazing may be an important factor in regulating competitive interaction between plants. Certain species can act as important "nursery" plants for smaller species and are also important for successional development after disturbance. Tortoises and mammals can be important seed dispersal agents. Watercourses, wetlands, upland- down land gradients or vegetation boundaries are all significant ecological features.

8.2.1 Threatened or protected ecosystems

The site visit confirmed that the vegetation mostly conforms to Kalahari Karroid Shrubland, classified as "Least Threatened". Recently the *National list of ecosystems that are threatened and in need of protection* (GN 1002, December 2011), was promulgated in terms of the National Environmental Management Biodiversity Act (NEM: BA), Act 10 of 2004. According to this National list, the vegetation type remains classified as Least Threatened.

According to the Draft Siyanda Environmental Management Framework the proposed sites within the following categories according to the various maps.

Conservation priority areas: According to Map 12a the site falls within an area regarded as having a High (3) conservation priority (shrublands). According to Map 12b, site 2 may fall within a proposed conservation area.

Landcover: According to Map 13 of the Draft EMF, the proposed site falls within the area marked as Shrubland.

Sensitivity Index: According to Map 14 of the Draft EMF, the proposed site falls within an area identified as of relative medium-high environmental sensitivity (3-5) in an index which starts at Transformed and then are given values of 0-8 (8 being of high environmental sensitivity).

Control Zones: According to Map 15, the proposed site location falls within control zone 3 area, which is described as a potential high to very high vegetation conservation areas.

In summary, Shrubland in the Siyanda EMF was given a high conservation value and should be considered for conservation. In accordance with the Draft Siyanda EMF, Noenieput and its surrounding, falls within large proposed future conservation area. In the case of the Noenieput site, the relative high conservation status of the Karroid Shrubland must be evaluated against the degraded state of the proposed development site. Ideally remaining Karroid Shrubland in good condition must be avoided and considered for conservation. However, in the case of the Noenieput site, the proposed site cannot be described as in good condition. Evidence of disturbance is quite evident and is also displayed by the vegetation composition.

The proposed housing development is considered to have a permanent, but localised impact on wildlife and avi-fauna. Taking the above into account it is clear that the proposed project will have an impact on natural vegetation which is considered to be of high conservation value and might be located within a proposed future conservation area. In addition a number of small drainage lines/streams were also encountered on both sites.

On the other hand, because of the localised nature of the impact the impact on ecosystem function is regarded as very low, cumulative impact on ecology is regarded as very low and finally the impact on economic use of the vegetation is regarded as very low.

The impact on threatened or protected ecosystems is thus rated as low-medium.

8.2.2 Special habitats

The vegetation itself is not considered to belong to a threatened or protected ecosystem and is classified as "Least threatened", but according to the draft Siyanda EMF, shrubland in good condition is given a high conservation priority, and it falls within a proposed conservation area. In addition its environmental sensitivity classification was rated as medium. This is, however, offset by the general poor condition of the veld. No special habitats, were encountered on site (e.g. quartz patches or broken veld), which could sustain significant smaller ecosystems.

There are no formal rivers on any of the proposed site, but various drainage furrows were encountered on both proposed sites. Although most of these drainage lines are basically storm water channels with little riparian vegetation they should still be seen as significant biodiversity features, which should be protected by adequate river corridors or suitably incorporated within the storm water planning for these town additions.

It is considered unlikely that the proposed project will have a significant impact on special habitats if the impact mitigation recommendations are adhered to.

The impact is thus rated as low-medium.

8.2.3 Corridors and or conservancy networks

Looking at the larger site and its surroundings it shows excellent connectivity with remaining natural veld in almost all directions. Corridors and natural veld networks are still relative unscathed (apart from road networks).

Because of the localised impact of the housing project and because the site are already impacted by the Noenieput settlement it is highly unlikely that it will have any significant additional impacts on corridors or conservancy networks.

The impact is thus rated as very low.

8.2.4 Threatened or endangered species

No threatened or endangered species were recorded during the site visit, however, this does not rule out their presence as they may be subject to seasonable rainfall and may not have been observable during the time of the site visit, since the composition of the vegetation layers will fluctuates with seasonal rainfall (Van Rooyen *et. all*, 1984, *vide* Mucina & Rutherford, 2006). However, it must be noted that the vegetation type is considered "Least Threatened" and that this classification is based on plant species diversity and turnover as well as habitat transformation. The number of species per broad geographical levels for these biomes is low (Van Rooyen, 1988, *vide* Mucina & Rutherford, 2006). It is therefore very unlikely that any red data species will be confined to the proposed site alone.

Taking the above into account it is highly unlikely that the proposed project will have a significant or long term effect on threatened or endangered species.

The impact is thus rated as low.

8.2.5 Protected species

The National Forests Act (NFA) of 1998 (Act 84 of 1998) provides for the protection of forests as well as specific tree species (GN 716 of 7 September 2012). In addition to the NFA the Northern Cape Nature Conservation Act 9 of 2009 (NCNCA) came into effect on the 12th of December 2011, which also provides for the sustainable utilization of wild animals, aquatic biota and plants. Schedule 1 and 2 of the act give extensive lists of specially protected and protected fauna and flora species in accordance with this act.

Three protected plant species was observed. The number of species per broad geographical levels for these biomes is low and it is therefore very unlikely that any single species will be confined to the proposed site alone. However, these species will be impacted (especially the Aizoaceae). Both the *Aloe* and the Mesembryanthemaceae could be easily transplanted (single individuals), but the Aizoaceae are too numerous.

It is thus considered likely that the project will have an impact on protected species.

The impact is thus rated as medium.

Mitigation:

- As a pre-cautionary measure all viable herb-, bulb- and succulent plant species encountered within the footprint should be removed and replanted through a dedicated search and rescue operation.
- All protected species must preferably be conserved or transplanted.
- Permits must be obtained for the removal of any protected species which are encountered.

8.2.6 Direct impacts

As the name suggest, direct impacts refers to those impacts with a direct impact on biodiversity features and in this case were considered for the potentially most significant associated impacts (some of which have already been discussed above).

- Direct loss of vegetation type and associated habitat due to construction and operational activities.
- Loss of ecological processes (e.g. migration patterns, pollinators, river function etc.) due to construction and operational activities. (Refer to page 29).
- Loss of local biodiversity and threatened plant species (Refer to page 30)
- Loss of ecosystem connectivity (Refer to page 32)

The site still support natural vegetation (shrubland) which, according to the draft Siyanda EMF is considered to be of high conservation value. In addition the site may be located within a proposed future conservation area and a number of protected species were encountered. However, the impact will be localised, no special

habitats were encountered, it will not lead to significant loss of ecological processes, biodiversity or ecosystem connectivity and is not expected to have any significant impact on wildlife or avi-fauna.

Taking the above into account the direct impact on the environment is **rated as low-medium.**

Mitigation: The following is some mitigation which will minimise the impact of the proposed development.

- Although most of these drainage lines are basically storm water channels with little riparian vegetation they should still be seen as significant biodiversity features, which should be protected by adequate river corridors or suitably incorporated within the storm water planning for these town additions.
- Permits must be obtained for the removal of any protected species which might be encountered.
- As a pre-cautionary measure all viable herb-, bulbs- and succulent plant species encountered within the footprint should be removed and replanted through a dedicated search and rescue operation.
- Only existing access roads should be used for access to the terrain. Access roads must be clearly demarcated and access must be tightly controlled (deviations may not be allowed).
- Indiscriminate clearing of areas must be avoided (all remaining areas to remain as natural as possible).
- All topsoil (at all excavation sites) must be removed and stored separately for re-use for rehabilitation purposes. The topsoil and vegetation should be replaced over the disturbed soil to provide a source of seed and a seed bed to encourage re-growth of the species removed during construction.
- Once the construction is completed all further movement must be confined to the access tracks to allow the vegetation to re-establish over the excavated areas.
- Rehabilitation must be done after construction.

8.2.7 Indirect impacts

Indirect impacts are impacts that are not a direct result of the main activity, but are impacts still associated or resulting from the main activity. The following possible indirect impacts were associated with the proposed project:

- Establishment of a temporary construction associated infrastructure or facilities.
- Temporary storage areas (e.g. pipe's and fittings and concrete mixing material).
- Waste management.

It is very likely that the proposed project will have indirect impacts. It is considered that indirect impacts will have a similar impact as direct impacts, which will lead to a cumulative effect on the environment. However, indirect impacts can be much reduced through good environmental control during construction.

On its own the impact is considered to be low-medium.

Mitigation:

- Appoint a suitably experience ECO during the construction phase of the project.

8.2.8 *Cumulative impacts*

In order to comprehend the cumulative impact, one has to understand to what extent the proposed activity will contribute to the cumulative loss of ecological function and other biodiversity features on a regional basis.

Having discussed the various possible environmental impacts above, it is concluded that:

- The proposed site is located on degraded natural veld in relative poor condition.
- The number of species per broad geographical levels for this biome is low and it is therefore very unlikely that any single species will be confined to any of the proposed sites alone. However, a number of protected species were encountered. The impact on individual species is thus regarded as low-medium.
- The impact on sensitive habitats, however, is regarded as low-medium, because of the fact that shrubland has a high conservation value within the draft Siyanda EMF and the site may be located within a future conservation area as well as the presence of various small drainage lines/streams.
- On the other hand, because of the localised nature of the impact the impact on ecosystem function is regarded as very low, cumulative impact on ecology is regarded as very low and finally the impact on economic use of the vegetation is regarded as very low.

The proposed project will thus have a permanent, but localised impact, which can, through the implementation of impact minimisation actions, be controlled and further reduced.

On the whole the cumulative impact is considered to be low-medium.

8.3 THE NO-GO OPTION

The "No-Go alternative" does not signify significant biodiversity gain or loss especially on a regional basis. However, it will ensure that none of the potential impacts above occur. The current status quo will remain and there will be no immediate additional impact on the vegetation, protected species or river corridors. However, normal growth within the town and its associated urban activities will over time have a further impact, which might be better managed through controlled development.

On the other hand the local municipality and governments have a socio-economic responsibility to provide basic living. Over the long term the proposed project is likely to be one of the viable solutions with acceptable environmental impact.

9. RECOMMENDATIONS & IMPACT MINIMIZATION

Because of the identified need for low cost housing developments in the Mier Municipal area and the socio-economical responsibility of all Governments it is highly unlikely that the "No-Go" option will be an option. Other locations may be looked at, but ultimately the need for housing will remain (and most probably increase). It is also clear that the Municipality and Town Planners considered various options carefully before approaching the EAP with the most viable options. Even though the impact will be permanent, it will also be localised and is situated within a vegetation type not considered by National Spatial Biodiversity Indicators as sensitive. However, local environmental planning initiatives (Siyanda Draft EMF, 2008) regard shrubland as of high potential conservation value and as such the footprint must be carefully evaluated. In this case, however, this is offset by the fact that the natural vegetation on the proposed site has been degraded and is in poor condition.

Various impact minimisation recommendations are given in this report, which will reduce the cumulative impact of the proposed development to a very large degree. The major impact minimisation recommendation is associated with good environmental planning and control during construction.

Having evaluated and discussed the various biodiversity aspects associated with the proposed development, the most significant possible impacts identified are:

- In summary, Shrubland (in good condition) in the Siyanda EMF was given a high conservation value and should be considered for conservation.
- The site may fall within an area that is being proposed as a future conservation area.
- According to the Siyanda EMF, Sensitivity index map, the specific site is considered to be of medium environmental sensitivity.
- The impact on the small seasonal streams and drainage lines.

It is, however, considered highly unlikely that the proposed project will contribute significantly to any of the following:

- Significant loss of vegetation type and associated habitat.
- Loss of ecological processes (e.g. migration patterns, pollinators, river function etc.) due to construction and operational activities.
- Loss of local biodiversity and threatened plant species.
- Loss of ecosystem connectivity

With the available information to the author's disposal it is recommended that project be approved since it is not associated with significant environmental impact, provided that mitigation is adequately addresses.

9.1 IMPACT MINIMIZATION

9.1.1 General

- All construction must be done in accordance with an approved construction and operational phase Environmental Management Plan (EMP), which must be developed by a suitably experienced Environmental Assessment Practitioner.
- A suitably qualified Environmental Control Officer must be appointed to monitor the construction phase in terms of the EMP and the Biodiversity study recommendations as well as any other conditions which might be required by the Department of Environmental Affairs.
- An integrated waste management system must be implemented during the construction phase.
- All rubble and rubbish (if applicable) must be collected and removed from the site to a suitable registered waste disposal site.
- All alien vegetation should be removed from the larger property.
- All efforts must be made to protect all mature indigenous trees within the proposed final footprint (and any other protected species that might be encountered on site).
- Permits must be obtained for the removal of any protected species which might be encountered.
- As a pre-cautionary measure all viable herb-, bulbs- and succulent plant species encountered within the footprint should be removed and replanted through a dedicated search and rescue operation.
- Indiscriminate clearing of areas must be avoided (all remaining areas to remain as natural as possible).
- All topsoil (the top 15-20 cm at all excavation sites), must be removed and stored separately for re-use for rehabilitation purposes. The topsoil and vegetation should be replaced over the disturbed soil to provide a source of seed and a seed bed to encourage re-growth of the species removed during construction.
- Once the construction is completed rehabilitation must be implemented.

9.1.2 Site specific

- Although most of the drainage lines are basically storm water channels with little associated riparian vegetation they should still be seen as significant biodiversity features and should be protected by adequate river corridors or suitably incorporated within the storm water planning for these town additions.

Appendix D (2)

Heritage Impact Assessment

Heritage Impact Assessment Report

*Proposed Low Income Housing Project Noenieput, Groot Mier Municipality,
Northern Cape.*

October 2013

Compiled for:

EnviroAfrica

Bernard De Witt

bernard@enviroafrica.co.za

Tel. 021 851 1616

SAHRA Case ID:



Pro-Active Archaeological Consultants

www.paac.co.za

Dr Liezl van Pletzen-Vos
083 2785 125
liezl@paac.co.za

PostNet Suite 168
Private Bag X15
Somerset West
7129

Dr Reneé Rust
021 844 0949
renee@paac.co.za

Executive Summary

Heritage Resources

The stone tools form a strong background signature across the property. Acheulian, MSA and LSA tools were located. Please refer to the map in Figure for a more detailed overview of distribution.

Four graves or burials were located on the property. Mostly situated near the Police station, they are informal.

Grave 1: 27°30'45.82"S; 20°8'36.54"E

Grave 2: 27°30'35.02"S; 20°8'28.08"E

Grave 3: 27°30'43.47"S; 20°8'37.73"E

Grave 4: 27°30'43.01"S; 20°8'87.87"E

Grading and Significance of Noenieput

Lithics

The lithics found on the property rate as Generally Protected B. This site needs further recording before destruction. The range and number of stone tools found on the property suggest that the site has a generally Medium significance

Burials

The burials may have a high local significance and are awarded a field rating of Generally Protected A. The site should be mitigated before destruction.

ALTERNATIVES, MITIGATION & CONCLUSIONS

Lithics

The stone tools or lithics found on the property need to be recorded and sampled in detail, prior to development. The recording of the lithics should assess the raw material, typology and dimensions of a sample of the property. It is recommendation that the site be mapped, documented, minimally sampled, and then destroyed (with a permit). Mitigation usually involves a requirement to collect sample through a controlled surface pick-up (CSP) of the cultural and other remains that will adequately allow characterization and relative dating of the site.

Controlled surface pick-up (CSP)

Controlled surface pick-up (or collection) consists of further detailed survey of the ground surface of the archaeological site to locate, map and collect artefacts on the surface. This method is used in open ploughed fields where archaeological sites were documented through a pedestrian survey. The goal of a CSP is to gather information that will assist in documenting the characteristics and extent of the archaeological site.

1. The location of all artefacts on the ground surface will be accurately mapped using a total station, transit and tape, stadia rod, or GPS unit. Artefacts will be recorded and catalogued by their mapped location, relevant information (e.g., spatial relationship of diagnostics, artefact concentration areas) will also be recorded.
2. For very large and dense surface scatters, as is the case at Rietfontein, the full CSP will be conducted by grid units (maximum 5 m by 5 m units) over the archaeological site. Artefacts will be recorded and catalogued with their grid unit designation.
3. All formal artefact types and diagnostic categories, including will be collected.
4. A representative sample of non-diagnostic artefacts will be collected, taking into consideration the archaeological site type, type and frequency of non-diagnostic artefacts.

Prior to the CSP a permit needs to be acquired from SAHRA for the sampling process. After the CSP the sampled will be analysed and a report sent to the developers and SAHRA. SAHRA should then issue a permit allowing the destruction of the site. The sample will be stored for future reference at the designated repository.

Burials

The burials need further investigation. Firstly, it needs to be determined if they are burials. Should they prove to be human burials, further mitigation is necessary. Three alternatives are suggested:

1. Protection of the graves from the impact of the development including possibly mitigation through fencing and avoidance of the area by the development. A mini-management plan for maintenance of the graves must also be developed.
2. Relocation of the graves involving public participation and possibly further archival research,
3. or both.

Contents

Executive Summary.....	2
Heritage Resources.....	2
Grading and Significance of Noenieput.....	2
Lithics.....	2
Burials.....	2
ALTERNATIVES, MITIGATION & CONCLUSIONS.....	2
Lithics.....	2
Controlled surface pick-up (CSP).....	3
Burials.....	3
1 . INTRODUCTION.....	1
1.1 Project Description.....	1
1.2 Stakeholders.....	2
1.3 Relevant Legislation NHRA 1999 S38(3).....	2
2 . IDENTIFICATION AND MAPPING OF HERITAGE RESOURCES.....	2
2.1 Desktop Study.....	3
2.1.1 Earlier Stone Age.....	3
2.1.1.1 Oldowan.....	3
2.1.1.2 Acheulian.....	4
2.1.2 Middle Stone Age.....	5
2.1.3 Later Stone Age.....	6
2.1.4 Historical.....	9
2.1.5 Previous research and AIAs.....	10
2.1.5.1 Noenieput and environs.....	10
2.1.5.2 Rooipan.....	10
2.1.5.3 Twee Rivieren.....	10
2.2 Summary of heritage resources.....	11
2.2.1 Lithics.....	11
2.2.2 Burials.....	12
3 . SIGNIFICANCE & GRADING.....	14
3.1 Legislation – NHRA 1999 7(1).....	15
3.2 Legislation – S 3 (3) – Cultural Significance.....	15
3.3 NHRA 1999, Section 36: Burial grounds and graves	16
3.4 Grading and Significance of Noenieput.....	17
3.4.1 Lithics.....	17
3.4.2 Burials.....	17
4 . DEVELOPMENT IMPACT ON HERITAGE RESOURCES.....	18
5 . DEVELOPMENT IMPACT ON SUSTAINABLE SOCIO-ECONOMIC BENEFITS.....	18
6 . COMMUNITY CONSULTATION.....	18
7 . ALTERNATIVES, MITIGATION & CONCLUSIONS.....	18
7.1 Lithics.....	18
7.2 Burials.....	19
8 . REFERENCES.....	19

APPENDIX A: ARCHAEOLOGICAL SPECIALIST REPORTS.....	21
9 . ARCHAEOLOGICAL STUDY.....	21
9.1 DESCRIPTION OF THE PROPERTY & METHODOLOGY.....	22
9.2 DESCRIPTION OF SITES IDENTIFIED.....	22
9.3 DESCRIPTION OF THE ARTEFACTS.....	22
9.4 DESCRIPTION OF BURIALS AND GRAVES	23
9.4.1 Grave 1.....	23
9.4.2 Grave 2.....	23
9.4.3 Grave 3.....	23
9.4.4 Grave 4.....	23
9.4.5 NHRA, No 25, 1999: s 36 Burial grounds and graves	23
9.5 FIELD RATING	25
9.5.1 Lithics.....	26
9.5.2 Burials.....	26
9.6 STATEMENT OF SIGNIFICANCE.....	26
9.7 RECOMMENDATIONS & CONCLUSIONS.....	27
9.7.1 Lithics.....	27
9.7.1.1 Controlled surface pick-up (CSP).....	27
9.7.2 Burials.....	28
9.8 FIGURES.....	29

Tables

Table 1: Project Co-ordinates.....	1
Table 2: Stakeholders.....	2
Table 3: MSA Finds.....	11
Table 4: Acheulian finds.....	11
Table 5: MSA Finds.....	22
Table 6: Acheulian finds.....	23
Table 7: Significance Criteria.....	26

Figures

Figure 1: Dimensions of the development.....	1
Figure 2: MSA and Acheulian tools.....	11
Figure 3: Locations of graves.....	12
Figure 4: Grave 1.....	13
Figure 5: Grave 2.....	14
Figure 6: Grave 3.....	14
Figure 7: Grave 4.....	14
Figure 8: GPS tracking.....	29
Figure 9: 1:50 000 topographic map.....	30
Figure 10: General view, towards Police Station, showing sparse vegetation and rocky surface.....	31
Figure 11: Spring.....	31

Glossary

'archaeological' means-

- (a) material remains resulting from human activity which are in a state of disuse and are in or on land and which are older than 100 years, including artefacts, human and hominid remains and artificial features and structures;
- (b) rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and which is older than 100 years, including any area within 10m of such representation;
- (c) wrecks, being any vessel or aircraft, or any part thereof, which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the maritime culture zone of the Republic, as defined respectively in sections 3, 4 and 6 of the Maritime Zones Act, 1994 (Act 15 of 1994), and any cargo, debris or artefacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation; and features, structures and artefacts associated with military history which are older than 75 years and the sites on which they are found;

'cultural significance' means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance;

'palaeontological' means any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site which contains such fossilised remains or trace [sic];

'structure' means any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith. Protected structures are those which are over 60 years old.

Acronyms

ASA: Archaeological Specialist Assessment

APM: Archaeology, Palaeontology and Meteorites

EIA: Environmental Impact Assessment

ESA: Earlier Stone Age (>200 000-2.5 Million years ago)

HIA: Heritage Impact Assessment

HWC: Heritage Western Cape

IAP: Interested and Affected Parties

LSA: Later Stone Age (<35 000 years)

MSA: Middle Stone Age (>30 000 years - <300 000 years ago)

NHRA: National Heritage Resources Act 25 of 1999

SAHRA: South African Heritage Resources Agency

1. INTRODUCTION

This report forms part of a Environmental Impact Assessment of an area of Noenieput, Groot Mier Municipality, Northern Cape.

1.1 Project Description

The Mier Municipality intends to rezone the property to residential. The property is 11 ha in extent. 100 individual land units are planned, including associated infrastructure, public open spaces and a place of worship.

Table 1: Project Co-ordinates

	S	E
A	27°30'35.38"S	20° 8'25.02"E
B	27°30'31.66"S	20° 8'32.77"E
C	27°30'44.80"S	20° 8'41.72"E
D	27°30'47.09"S	20° 8'37.06"E
E	27°30'44.96"S	20° 8'35.53"E
F	27°30'46.56"S	20° 8'32.11"E



Figure 1: Dimensions of the development.

1.2 Stakeholders

Table 2: Stakeholders

	Developer & Landowner	Macroplan	Environmental Consultant	Heritage/ Archaeologists	Heritage/ Archaeologists
Name	Mier Municipality	Macroplan	EnviroAfrica	PAAC	Ubique Heritage Consultants
Contact Person	J Mienies	Len J Fourie	Bernard de Witt	Liezl van Pletzen-Vos	Jan Engelbrecht
Telephone	0545310928	0543323642	021 851 1616		054 5110074
Cell		0828211025	0824489991	083 2785 125	082 845 6276
Address	PO Box 178 Mier 8811	PO Box 987 Upington 8800	PO Box 5367 Helderberg 7135	PostNet Suite 168 Private Bag X15 Somerset West 7129	PO Box 51 Askham 8814
email	jmienies@gmail.com	macroplan@mweb.co.za	bernard@enviroafrica.co.za	liezl@paac.co.za	jangrensman@gmail.com

1.3 Relevant Legislation NHRA 1999 S38(3)

(3) The responsible heritage resources authority must specify the information to be provided in a report required in terms of subsection (2) (a) : Provided that the following must be included:

- (a) The identification and mapping of all heritage resources in the area affected;
 - (b) an assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 6 (2) or prescribed under section 7;
 - (c) an assessment of the impact of the development on such heritage resources;
 - (d) an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development;
 - (e) the results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;
 - (f) if heritage resources will be adversely affected by the proposed development, the consideration of alternatives; and
- (a) plans for mitigation of any adverse effects during and after the completion of the proposed development.

2 . IDENTIFICATION AND MAPPING OF HERITAGE RESOURCES

Section 2 concentrates on the identification and mapping of all heritage resources in the area

affected. Loosely defined, heritage is that which is inherited. The NHRA of 1999 has defined certain kinds of heritage as being worthy of protection, by either specific or general protection mechanisms. In South Africa, the law is directed towards the protection of human made heritage, although places and objects of scientific importance are covered. The NHRA (1999) also protects intangible heritage such as traditional activities, oral histories and places where significant events happened. Generally protected heritage includes:

- Cultural landscapes
- Buildings and structures (greater than 60 years of age)
- Archaeological sites (greater than 100 years of age)
- Palaeontological sites and specimens
- Shipwrecks and aircraft wrecks
- Graves and grave yards.

2.1 Desktop Study

A desk top study helps to identify what type of archaeological resources are likely to be found in the survey area. The scientific literature and previous archaeological and heritage survey conducted in the Mier area and the Northern Cape were consulted.

2.1.1 Earlier Stone Age

The ESA has been divided into two distinct stone tool cultures: the Oldowan Tradition and the Acheulian Tradition.

2.1.1.1 Oldowan

The Oldowan is represented by the earliest stone tools (from about 2 million years ago), simple core forms and unmodified flakes (Klien 2000). Geographically, the Oldowan is found in East Africa, and within South Africa, generally limited to the Sterkfontein region, though they are sometimes found with the Vaal-Orange River areas. ESA sites at Sterkfontein and Swartkrans, in the northeast of South Africa, across the Blaauwbank Valley, provide the largest Plio-Pleistocene (earliest Pleistocene) archaeological assemblage and probably the oldest cultural material yet found in southern Africa (Mitchell 2002; Tattersall 2006). Almost all the artefacts from these sites are made in quartz, with small amounts of chert and quartzite. Oldowan artefacts are associated with habilines at Sterkfontein and Swartkrans.

The stone technology of Oldowan assemblages is highly informal. Oldowan show the simplest

forms of stone tool manufacture. The earliest manufactured implements consist principally of tiny stone flakes, some only 10 mm in size, chipped from small river cobbles which might also have been used as pounding tools once a few flakes had been removed. It took skill even so far back in human evolution as the original stone core had to be struck at exactly the right angle to detach usable flakes. Nonetheless the industry is simple and although resourceful, shows little retouch and no flaking to predetermined patterns resulting in little control over design (Mitchell 2002). In addition to hammerstones and manuports the assemblage comprises flakes and the cores from which these were struck. The flakes were mainly the end-product, and core tools often just by-products in the manufacturing. They may have been used for heavy butchery, wood-cutting or even projectiles. Both plant and animal residues are found on Oldowan tools.

2.1.1.2 Acheulian

The Acheulian has a more formal, standardised component, illustrated by hand axes and cleavers. This tradition is found across Africa, Western Asia and southern Europe (Deacon & Deacon 1999) and dates from between ± 1.4 million years ago to roughly 250 000 years ago. Mitchell (2002), describes hand axes as elongated, pear-shaped or triangular forms, terminating in a point. Cleavers are broader, with an axe-like cutting edge. Some informal flakes show evidence of retouch, similar to the MSA scraper. Formal tools may represent less than ten percent of artefacts found in the field (Deacon & Deacon 1999). Such finds generally occur in valley bottoms or wetlands.

Acheulian indicates a new level of complexity within the Early Stone Age (ESA). *Homo erectus* is the collective term used for some of the hominid fossils associated with the earliest stone tools. From as early as 1.4 million years ago in Africa, Acheulian (from the site of St Acheul in France) artefact assemblages showed cores and flakes and included shaped stone tools, bifaces, made to a pattern and style; large tools ranging from 100 to 200 mm or more (Deacon and Deacon 1999). This stone industry persisted over a period for more than a million years to 250 000 years ago in Africa.

Most bifaces, almond-shaped, are pointed and classified as handaxes and others have wide cutting ends and termed cleavers. Direct percussion and bipolar flaking (shaped on both sides to a regular shape), radial flaking that is, were understood; a precise template. This formal biface component of the Acheulian module make up for less than 10 per cent of the assemblages. The rest are less standardised flakes and cores which may include edge damage showing that they were also utilized. Most bifaces show a lateral S-twist which indicate the technique of secondary flaking and probably the use of a wooden or bone hammer to remove the finishing flakes. A butchering function for these formal tools is preferred. The biface-makers appear to have favoured riverine camping sites. The

valley of the Vaal River, branch of the Orange River, is rich in Acheulian sites (Butzer 1984). In Acheulian times there was a strong presence of people in the Vaal-Orange drainage basin and sites are associated with pans and springs, and some examples have been found at Wonderwerk Cave (Deacon & Deacon 1999, Beaumont & Vogel 2006) and Kathu Pan (Poert et al 2010). Most of the Acheulian sites in the Vaal basin date between 1 million and 500 000 years (Smith 1995).

The artefacts include a range of sizes of large bifaces including classic handaxes and cleavers and a number of very large flakes and the specially prepared cores [Victoria West Cores because they were first described from the Karoo town of that name] from which these large flakes were struck. Such cores were designed to produce flake blanks large enough to make bifaces. The technique of preparing the core for the removal of blanks of predetermined size and shape is generally known as the Levallois technique. The prepared core technique was an integral part of the African Acheulian (Deacon and Deacon 1999).

2.1.2 Middle Stone Age

The Middle Stone Age (MSA) is sandwiched between the ESA and Later Stone Age (LSA) and dates from between 250 000 B.P. To about 20 000 years ago (Deacon & Deacon 1999, Mitchell 2002, Lombard et al 2012). The technology is characterised by the absence of hand axes and cleavers, the presence of prepared core techniques (e.g. Levallois technique). The stone flakes are generally triangular in shape with faceted striking platforms. Elongated blades and blade flakes are also common.

It is also common for these stone artefacts to be found between the surface and approximately 50 - 80cm below ground. Fossil bone may be associated with Middle Stone Age occurrences. These stone artefacts are usually observed in secondary context with no other associated archaeological material. Sampson on the other hand reported many open-air MSA sites which he assigned to the Orangian Industry (dating between 128 000 - 75 000 years old), Florisbad and Zeekoegat Industries dating between 64 000 and 32 000 years old. Relevant archaeological impact assessments conducted by the Albany Museum have recorded surface scatters of Middle Stone Age stone artefacts in the Cradock vicinity, (Binneman & Booth 2008) as well as Middelburg (Booth 2012) and Noupoot (Booth 2011).Figure

The prepared-core technique, in which a stone nucleus was carefully worked until a single blow would detach an effectively finished implement, replaces the Acheulian Industry. The use of specific natural materials in the making of tools as the potential of the stone chosen or sought is recognised and utilized effectively. This fundamental change and shift in stone working are known

as belonging to the Middle Stone Age (MSA) with regional variation (Deacon and Deacon 1999). The middle Stone Age (MSA) spans a period from 300 000 – 20 000 years and focuses on the emergence of modern humans by the change in technology, behaviour, physical appearance, art and symbolism (Beaumont and Morris 1990; Lombard et al. 2012). Surface scatters of these flake and blade industries occur widespread across southern Africa although rarely with any associated botanical and faunal remains. Typical MSA tool types were intended to be hafted, either as spear points or as components of compound tools. This development is marked in the Kalahari region by the evidence in this period for active hunting in Africa of medium and large-sized mammals, mainly Bovidae, the family of antelopes, buffaloes and related species. The technology of MSA stone work implies cognitive and behavioural advancements as the MSA began to predominate in Africa.

The emergence of *Homo Sapiens* which is the associated hominid of the MSA is clouded and complex in the period leading up to the 200 000 year period of the African hominid record and the ambiguous beginnings of the MSA. Near the southern tip of Africa, Klasies River Mouth cave hominids show a stronger picture; most of the Klasies hominids have MSA associations and date to around 100 000 years ago. In this period between 200 000 and 100 000 there existed in Africa a variety of hominids. It appears from material, from various site including Blombos on the south coast, middle stone age points, engraved ochre, pierced shell beads that MSA people were of modern cognition and abilities. In Africa then we have the earliest evidence of the modern human cognition in MSA context at 70 000 to 80 000 years ago.

2.1.3 Later Stone Age

These sites date from the last 20 000 years, but for the most part, to the last four thousand years or so. They will often be found close to water sources and may be out in the open, although by far the most common are to be found in caves and rock shelters (Deacon & Deacon 1999). San hunter/foragers inhabited the area up to 2000 years ago, when pastoralism was introduced to the Cape by the Khoenkhoen (Deacon & Deacon 1999). Evidence of ceramics and domesticated stock is often used as a marker for the arrival of pastoralists in a region. The 17th and 18th centuries saw the European colonial expansion. As colonial influence expanded and more land was settled, indigenous people were forced into economically less viable areas. The effects of diseases and organised extermination led to the eventual dissolution of indigenous society as it had existed, and the survivors were reduced to servitude on European farms (Mitchell 2002, Parkington 1977, Sealy et al 2000).

The flake implements of the MSA were supplanted by the long slender blades of the Later Stone

Age (LSA) from 20 000 years onwards. The Later Stone Age (LSA) spans a period from 40 000 years ago to the historical period (the last 500 years) to the last 100 years and is associated with the archaeology of San hunter-gatherers (Mitchell 2002). The majority of archaeological sites date from the past 10 000 years where San hunter-gatherers inhabited the landscape living in rock shelters and caves as well as on the open landscape, inland and along the coast. The open sites are difficult to locate because they are in the open veld. Caves and rock shelters, however, in most cases, provide a more substantial preservation record of pre-colonial human occupation (Deacon and Deacon 1999).

The Later Stone Age archaeology of the Northern Karoo is rich and varied (Beaumont et al. 1995). Various studies have shown that the general area has been relatively marginal regarding pre-colonial human settlement, but is in fact exceptionally rich in archaeological sites and rock art (Beaumont and Morris 1990). [Bifacial and tanged barbed arrow heads made on very fine-grained dark or black chalcedony are distributed over the southern two-thirds of the Free State, the Kimberly area in the west, Lesotho in the east and along the southern boundary of this area as far south as Britstown and Steynsburg (Humphreys 1969)]

Some 2 000 years ago Khoekhoen pastoralists entered into the Northern region of southern Africa and lived mainly in small settlements (Penn 1995; Beaumont et al. 1995). They were the first food producers in South Africa and introduced domesticated animals (sheep, goats and cattle) and ceramic vessels to southern Africa. Often, these archaeological sites are found close to the banks of large streams and rivers and along the coast (Dunn 1931). Large piles of freshwater mussel shell (called freshwater middens) usually mark the large stream and river sites and large piles of marine shellfish middens mark the coastal sites.

A complete archaeological research survey was conducted in the Agter Sneeuberg region (northern side of the Sneeuberg) in the central and upper Seacow River Area that covered an area of 734 square kilometres between Hanover, Richmond and Noupoot in the Northern Cape (Sampson 1985). Later Stone Age Lithics and rare Khoekhoe pottery sherds were uncovered during systematic surveys of the area (Sadr & Sampson 1999).

Several dense clusters of Smithfield settlement sites (division of the LSA) are concentrated among the lower dolerite hills and ridges in preference to planes. The Smithfield occurs in the Northern Cape as late as the 14th century AD. Today the term Smithfield is only used for stone tool assemblages with backed bladelets and long end scrapers dating within the last 1000 years. Typical Smithfield assemblages, predominantly open sites, contain flaked lithics (most commonly of unpatinated blue-black hornfels), grinding and pounding equipment, bored stones, and sherds of a

highly characteristic bowl form decorated with stamp-impressed motifs and date within the last 1000 years (Dunn 1931). Endscrapers dominate the flaked stone artefact, the only other formal tools being reamers, single platform cores recycled as trimming hammers, and rare convex scrapers commonly called thumbnail scrapers. [Almost 5000 Smithfield sites were recorded during the 1980s]. These sites may also be attributed to rock shelters that have been occupied. Waterholes or natural springs were attractive areas for settlement. Discarded stone artefacts, lithic manufacturing debris, bone refuse and hearths scattered throughout the stratified rock shelter's deposits, as well as the occasional potsherd in the later components, represent the enduring record of hunter-gatherer settlement occupation.

The Northern Cape is characterized by a general scarcity of cave sites and an abundance of inherently short-term open-air sites (Parson 2003). These assemblages, all of which are associated with ceramics, are described as belonging to either the Swartkop or the Doornfontein Industry, with the former thought to have been manufactured by hunters and the latter by herders (Beaumont & Morris 1990; Beaumont et al. 1995). Most are open-air surface sites. Most of these sites consist of little more than a collection of stone artefacts and the question arises whether one can discriminate between hunters and herders on the basis of these lithic assemblages alone. Beaumont et al. (1995) state that the Swartkop Industry is characterized by a formal component almost identical to that of the preceding local Wilton Complex, namely the Springbokoog. All Swartkop sites occur close to pans, streambeds or other potential water sources, on low koppies or in deflation hollows (Beaumont et al. 1995). In contrast the contemporaneous Doornfontein Industry consists of mainly amorphous (shapeless) lithic artefacts, often manufactured on quartz and almost no formal tools (Beaumont et al. 1995). The implication is that the Wilton Complex gave direct rise to the Swartkop Industry at approximately 2000 years ago. Swartkop assemblages are described as having the following elements in common: they are characterized by cryptocrystalline silicates, contain high frequencies of blade flakes and backed blades and also associated with undecorated, grass-tempered ceramics (Beaumont & Vogel 1989).

The raw material used for artefact production of the LSA industries constitute four basic types: chert, quartz, quartzite and banded shale (Humphreys AJB and Thackeray AI 1983). The chert includes siliceous types such as chert, agate, chalcedony and jasper, which are essentially fine-grained raw materials. Quartz is equally fine-grained but tends to be very brittle. The flake implements of the MSA were supplanted by the long slender blades of the Later Stone Age (LSA) from 20 000 years onwards. The traditional ways of life have not changed that much in a very long time (Deacon and Deacon 1999). Assemblages provisionally assigned to the Doornfontein Industry,

are associated with groups of people practising some form of herding during most of the last 2000 years (Beaumont et al. 1995: 247–8). Doornfontein assemblages are generally described as including predominantly amorphous lithic flakes, with a formal lithic component.

2.1.4 Historical

The Middle Orange River—that part of the river between the Vaal confluence and the Augrabies Falls—contains numerous islands that were favoured by herding communities for the natural protection they provided against wild animals and stock thieves. This stretch of the river was, therefore, densely inhabited in pre- and proto-colonial times (Penn 1995; Smith and Metelerkamp 1995). Additionally, the resources of the river were shared by hunter-gatherers, while the area west of the Langeberg, (located to the east of Upington near the Orange River), was also occupied by Iron Age groups particularly the BaTlhaping, whose influence reached as far down the river as Upington (Morris 1992). By the early eighteenth century, the Khoekhoe and the San hunter-gatherers had reached a form of stability in the region.

As the colonial frontier moved relentlessly northwards during the eighteenth century, ‘Bastaards’ (persons of white/Khoe or white/slave parentage) and ‘Bastaard-Hottentots’ (persons of slave/Khoe parentage) gradually moved away towards Namaqualand and eventually also focussed on the Orange River as a sanctuary from colonial rule (Penn 1995: 48). The first loan farm next to the river was officially registered in 1751 (Penn 1995: 51). The relatively stable circumstances described along the Orange River became increasingly complicated in the second half of the eighteenth by an influx of newcomers wishing to avoid the colonial powers at the Cape. Trekboers (migrant farmers of colonial origin) had reached the Kalahari basin by 1780 (Penn 1995). This marked a period of northward colonial advance and accompanying social disruption in the Orange River area during the 18th century. Further disrupting factor in the area was the extremely violent behaviour of European big-game hunters and individuals searching for cattle (Penn 1995: 51–8). Such a state of contact and interaction would inevitably lead to sociocultural stress and transformation.

Radiocarbon dates indicate that specularite and red ochre mining at Blinkklipkop and Doornfontein near Postmansburg in the Northern Cape (Humphreys and Thackeray 1983) began some time before 1200 BP. The evidence from Blinkklipkop indicates that pottery appeared in the Postmasburg area by this date (1200 BP). This is older than the previously suggested date of only 400 BP. The importance of Blinkklipkop in the context of the history of the Northern Cape is thus to provide evidence that domestic animals and pottery were present in the region by 1200 BP. It also serves to remind that historically in the last few hundred years in the Northern Cape involves a complex

interaction of at least three different peoples in the region at the time of the arrival of Europeans in the eighteenth century

2.1.5 Previous research and AIAs

The survey area in the Kalaharian Ecozone, broadly known as the Kalahari Desert (Klein 1984) and riverine basin of the Molopo, is covered by a low density of lithic scatter (mainly quartzite and hornfel flakes, banded ironstone, with a dominance of irregular flakes). The surface survey indicates limited occupation; lithic surface finds with prepared cores, blades and points (marked retouch on scrapers) ascribable to the Middle Stone Age and moderately to heavily weathered Early Stone Age (handaxes, choppers and cleavers with a distinctive Acheulian phase (Beaumont and Morris 1990, Morris 2006; 2011).

2.1.5.1 Noenieput and environs

North of the Orange River, south-west of the Kalahari Gemsbok National Park, is the Mier Settlement where the descendants of indigenous groups from de Tuin near Kenhardt who were denied land in Bushmanland by the government in mid-19th century crossed the Orange River and settled others of the same remnant groups settled further north at Rehoboth in Namibia (Smith 1995).

During the 1980s archaeological surveys were done in the region of Rietfontein (Smith 1995). The survey revealed a number of surface sites, most of them on dune surfaces. A concentration was noted on a dune above the town 8 km on the north-east road. All the flattened hollows on this dune had cultural material. One square metre sample was collected. Pottery sherds were present; 24 quartz flakes, 10 quartzite, 5 silcrete and 11 shale; cores 3 miscellaneous segments and chunks; and 1 lithic manuport. Around the dry pans in the area similar stone assemblages were located.

2.1.5.2 Rooipan

The dune on the northeast of Rooipan was one continuous low density occupation area with stone flakes, ostrich egg-shell and large grinding equipment. Other sites were located on the southeast side of Rooipan and the southeast side of Witpan.

2.1.5.3 Twee Rivieren

At Twee Rivieren, just south of the confluence of the Nossob and Auob Rivers and at the entrance to the Kalahari Gemsbok National Park, on a red dune north of the settlement a low density scatter of stone material of varied raw materials: quartz, quartzite (red), chalcedony, chert, as well as

pottery and ostrich egg-shell fragments. On the dunes flanking the road south of Twee Rivieren, at 24 km from the gate, a limited surface scatter was found: quartz, hornfels, agate and quartzite flakes, pottery and ostrich egg-shell fragments. 25 km from the gate, a flattened zone with a limited scatter of similar artefacts occurs. 31 km from the gate, a large deflation zone with similar material can be found. Smith (1995) concludes that the clean sand dunes around the Gemsbok Park and the Mier settlements were obviously an attraction for hunters. They provided good sleeping places, well-drained during the infrequent rains, as well as high points for spotting game. The herders would have stayed mostly along the river. The riparian pastures provided year-round occupation.

2.2 Summary of heritage resources

2.2.1 Lithics

Table 3: MSA Finds

	Silcrete	Quartz	Quartzite	Jasper	Sandstone	Chert	Shale	Total
Flakes	68	12	154	1	25	1	16	277
Cores	17	2	40	0	15	1	2	77
Total	85	14	194	1	40	2	18	354



Figure 2: MSA and Acheulian tools.

Table 4: Acheulian finds

	Silcrete	Quartzite	Sandstone	Total
Handaxe			4	4
Cleaver	1	1	3	5

Please refer to the appendix for additional photographs of the lithics.

2.2.2 Burials

Four graves or burials were located on the property. Mostly situated near the Police station, they are informal (Figure 3).






Figure 3: Locations of graves



Figure 4: Grave 1

Grave 1: 27°30'45.82"S; 20°8'36.54"E

This grave is placed immediately adjacent to the Police Station fence. It dates to 2002.

 <p><i>Figure 5: Grave 2</i></p>	<p>Grave 2: 27°30'35.02"S; 20°8'28.08"E</p> <p>Grave 2 is isolated to the North of the property and consists of loosely packed stone, forming a elongated heap to the side of the playing field.</p>
 <p><i>Figure 6: Grave 3</i></p>	<p>Grave 3: 27°30'43.47"S; 20°8'37.73"E</p> <p>Graves 3 and 4 are almost perpendicular to each other. Grave 3 is covered with broken pieces of grey slate.</p>
 <p><i>Figure 7: Grave 4.</i></p>	<p>Grave 4: 27°30'43.01"S; 20°8'87.87"E</p> <p>Grave 4, similar to Grave 3, is also covered with broken creamy slate.</p>

3 . SIGNIFICANCE & GRADING

This section describes the significance of the heritage resources located on the property on terms of of the heritage assessment criteria set out in section 6(2) or prescribed under section 7 (grading);

3.1 Legislation – NHRA 1999 7(1)

7(1) SAHRA, in consultation with the Minister and the MEC of every province, must by regulation establish a system of grading of places and objects which form part of the national estate, and which distinguishes between at least the categories-

- a) Grade I: Heritage resources with qualities so exceptional that they are of special national significance;
- b) Grade II: Heritage resources which, although forming part of the national estate, can be considered to have special qualities which make them significant within the context of a province or a region; and
- c) Grade III: Other heritage resources worthy of conservation, and which prescribes heritage resources assessment criteria, consistent with the criteria set out in section 3(3), which must be used by a heritage resources authority or a local authority to assess the intrinsic, comparative and contextual significance of a heritage resource and the relative benefits and costs of its protection, so that the appropriate level of grading of the resource and the consequent responsibility for its management may be allocated in terms of section 8.

3.2 Legislation – S 3 (3) – Cultural Significance

A heritage resources authority may prescribe detailed heritage assessment criteria, consistent with the criteria set out in section 3 (3), for the assessment of Grade II and Grade III heritage resources in a province. (3) Without limiting the generality of subsections (1) and (2), a place or object is to be considered part of the national estate if it has cultural significance or other special value because of-

- (a) its importance in the community, or pattern of South Africa's history;
- (b) its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
- (c) its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- (d) its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- (e) its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- (f) its importance in demonstrating a high degree of creative or technical achievement at a particular period;
- (g) its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
- (h) its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa; and
- (i) sites of significance relating to the history of slavery in South Africa.

3.3 NHRA 1999, Section 36: Burial grounds and graves

- (1) Where it is not the responsibility of any other authority, SAHRA must conserve and generally care for burial grounds and graves protected in terms of this section, and it may make such arrangements for their conservation as it sees fit.
- (2) SAHRA must identify and record the graves of victims of conflict and any other graves which it deems to be of cultural significance and may erect memorials associated with the grave referred to in subsection (1), and must maintain such memorials.
- (3) No person may, without a permit issued by SAHRA or a provincial heritage resources authority—
 - (a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
 - (b) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
 - (c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.
- (4) SAHRA or a provincial heritage resources authority may not issue a permit for the destruction or damage of any burial ground or grave referred to in subsection (3)(a) unless it is satisfied that the applicant has made satisfactory arrangements for the exhumation and re-interment of the contents of such graves, at the cost of the applicant and in accordance with any regulations made by the responsible heritage resources authority.
- (5) SAHRA or a provincial heritage resources authority may not issue a permit for any activity under subsection (3)(b) unless it is satisfied that the applicant has, in accordance with regulations made by the responsible heritage resources authority—
 - (a) made a concerted effort to contact and consult communities and individuals who by tradition have an interest in such grave or burial ground; and
 - (b) reached agreements with such communities and individuals regarding the future of such grave or burial ground.
- (6) Subject to the provision of any other law, any person who in the course of development or any

other activity discovers the location of a grave, the existence of which was previously unknown, must immediately cease such activity and report the discovery to the responsible heritage resources authority which must, in co-operation with the South African Police Service and in accordance with regulations of the responsible heritage resources authority—

(a) carry out an investigation for the purpose of obtaining information on whether or not such grave is protected in terms of this Act or is of significance to any community; and

(b) if such grave is protected or is of significance, assist any person who or community which is a direct descendant to make arrangements for the exhumation and re-interment of the contents of such grave or, in the absence of such person or community, make any such arrangements as it deems fit.

(7) (a) SAHRA must, over a period of five years from the commencement of this Act, submit to the Minister for his or her approval lists of graves and burial grounds of persons connected with the liberation struggle and who died in exile or as a result of the action of State security forces or agents provocateur and which, after a process of public consultation, it believes should be included among those protected under this section.

(b) The Minister must publish such lists as he or she approves in the Gazette.

(8) Subject to section 56(2), SAHRA has the power, with respect to the graves of victims of conflict outside the Republic, to perform any function of a provincial heritage resources authority in terms of this section.

(9) SAHRA must assist other State Departments in identifying graves in a foreign country of victims of conflict connected with the liberation struggle and, following negotiations with the next of kin, or relevant authorities, it may re-inter the remains of that person in a prominent place in the capital of the Republic.

3.4 Grading and Significance of Noenieput

3.4.1 Lithics

The lithics found on the property rate as Generally Protected B. This site needs further recording before destruction. The range and number of stone tools found on the property suggest that the site has a generally Medium significance.

3.4.2 Burials

The burials may have a high local significance and are awarded a field rating of Generally Protected

A. The site should be mitigated before destruction.

4 . DEVELOPMENT IMPACT ON HERITAGE RESOURCES

The development will have a highly destructive impact on the lithics and the burials. Mitigation is necessary.

5 . DEVELOPMENT IMPACT ON SUSTAINABLE SOCIO-ECONOMIC BENEFITS

Unlike other areas of the Northern Cape, the Mier Municipal area, including Welkom, has not received the benefits of mining growth. The slow steady growth of the region is largely due to the tourism sector. Whether due to natural increases or immigration to the area, the Mier Municipality has identified a need to establish more housing for the local population (Macroplan 2012).

6 . COMMUNITY CONSULTATION

Several I&AP's have been consulted. No responses have been obtained to date. The I&AP's include:

- Northern Cape Department of Agriculture and Land Reform
- Mier Local Municipality
- Siyanda District Municipality
- Department of Roads and Public Works
- Department of Water Affair Northern Cape
- Department of Cooperative Governance, Human Settlements and Traditional Affairs (NC).
- Die Gemsbok

7 . ALTERNATIVES, MITIGATION & CONCLUSIONS

7.1 *Lithics*

The stone tools or lithics found on the property need to be recorded and sampled in detail, prior to development. The recording of the lithics should assess the raw material, typology and dimensions of a sample of the property. It is recommendation that the site be mapped, documented, minimally sampled, and then destroyed (with a permit). Mitigation usually involves a requirement to collect sample of the cultural and other remains that will adequately allow characterization and relative dating of the site.

7.2 Burials

The burials need further investigation. Firstly, it needs to be determined if they are burials. Should they prove to be human burials, further mitigation is necessary. Three alternatives are suggested:

4. Protection of the graves from the impact of the development including possibly mitigation through fencing and avoidance of the area by the development. A mini-management plan for maintenance of the graves must also be developed.
5. Relocation of the graves involving public participation and possibly further archival research,
6. or both.

8 . REFERENCES

- Alexander, J. E. 1838. An expedition of discovery into the interior of Africa, through the hitherto undescribed countries of the Great Namaquas, Boschmans, and Hill Damaras. Vol II. London: Henry Colburn.
- Beaumont PB & Morris D (eds.) 1990. Guide to Archaeological Sites in the Northern Cape. Kimberley: McGregor Museum.
- Beaumont PB, Smith AB & Vogel JC 1995. Before the Einiqua: The Archaeology of the Frontier Zone. In: Smith AB (ed). Eniqualand: Studies of the Orange River Frontier Rondebosch: UCT Press. Pp 236-264.
- Beaumont PB & Vogel JC. 2006. On a timescale for the past million years of human history in central South Africa. *South African Journal of Science* 102, May/June 2006:217-228.
- Butzer KW 1984. Archeogeology and Quaternary environment in the interior of southern Africa. In: Klein RG (ed). *Southern African Prehistory and Paleoenvironments* pp 1-64. Rotterdam: Balkema.
- Deacon J 1996. Archaeology of the Flat and Grass Bushmen. In: Deacon J and Dowson T A, eds, *Voices from the past: /Xam Bushmen and the Bleek and Lloyd collection*. Johannesburg: Witwatersrand University Press, pp. 245–70.
- Deacon, HJ. & Deacon, J. 1999. *Human beginnings in South Africa*. Cape Town: David Philip Publishers.
- Dunn EJ 1931. *The Bushman*. London: Griffin.
- Engelbrecht, J. 2013. Phase 1 Heriatge Impact Assessment Report: Proposed development for Low Cost Housing, Mier Local Municipality, Siyanda District Municipality, Northern Cape Province, South Africa.
- Goodwin, AJH. 1930. Chronology of the Mossel Bay Industry. *South African Journal of Science* 27:562-72.
- Humphreys AJB & Thackeray AI 1983. Ghaap and Gariep: Later Stone Age studies in the Northern Cape. *The South African Archeological Society Monograph Series No.2*. Cape Town.
- Klein RG 1984. The large mammals of southern Africa: Late Pliocene to Recent. In: Klein RG (ed). *Southern African Prehistory and Paleoenvironments* Rotterdam: Balkema pp 107-146.
- Lombard M, Wadley J, Deacon J, Wurz S, Parsons M, Mohapi M, Swart J and Mitchell P 2012. South African and Lesotho Stone Age sequence updated (1). *The South African Archaeological Bulletin* 67 (195): 123-144.
- Macroplan. 2012. Remainder of Farm 585, Rietfontein, Gordonia Rd, Mier Municipality, Northern Cape Province.
- McCarthy T and Rubidge B 2005. *The Story of Earth & Life: A southern African perspective on a 4.6 billion-year journey*. Cape Town: Struik Publishers.

- Mitchell, P. 2002. *The archaeology of Southern Africa*. Cambridge World Archaeology. Cape Town: Cambridge University Press.
- Morris AG 1992. *The Skeletons of Contact: A study of Protohistoric Burials from the Lower Orange River Valley, South Africa*. Johannesburg: Witwatersrand University Press.
- Morris, D. 2006 Unpublished Archaeological Specialist Input to the EIA Phase for the proposed Aries-Garona Eskom Transmission Power Line, Northern Cape# and comment on Garona Substation Extension.
- Morris, D. 2011. Unpublished Heritage Impact Assessment: SATO Energy Holdings Zuurwater Photovoltaic Energy Generation Facility development near Aggeneys, Northern Cape.
- Parkington, J. 1977. Soaqua: Hunter-Fisher-Gatherers of the Olifants River Valley Western Cape. *The South African Archaeological Bulletin*, 32(126), 150-157.
- Parsons I 2003. Lithic Expressions of Later Stone Age Lifeways in the Northern Cape. *The South African Archaeological Bulletin*, Vol. 58, No. 177 pp. 33-37.
- Parsons I 2004. Stone circles in the Bloubos landscape, Northern Cape. *Southern African Humanities* Vol. 16 pp 59–69.
- Penn N 1995. The Orange River Frontier Zone, C.1700 – 1805. In: Smith AB (ed). *Eniqualand: Studies of the Orange River Frontier* pp. 21-109. Rondebosch: UCT Press.
- Porat, N; Chazan, M; Grün, R; Aubert, M; Eisenmann, V & Kolska Horwitz, L. 2012. New radiometric ages for the Fauresmith industry from Kathu Pan, southern Africa: Implications for the Earlier to Middle Stone Age transition. *Journal of Archaeological Science* 37 (2010) 269–283
- Raper ER and Boucher M 1988. *Robert Jacob Gordon: Cape travels, 1777 to 1789*. Vol 1. Johannesburg: Brenthurst Press.
- Sealy, J., Pfeiffer, S., Yates, R., Willmore, K., Manhire, A., Maggs, T. & Lanham, J. 2000. Hunter-Gatherer Child Burials from the Pakhuis Mountains, Western Cape: Growth, Diet and Burial Practices in the Late Holocene. *The South African Archaeological Bulletin*. 55(171):32-43
- Smith AB 1995. Archaeological Observations along the Orange River and its Hinterland. In: Smith AB (ed). *Eniqualand: Studies of the Orange River Frontier* pp. 265-300. Rondebosch: UCT Press.
- Smith AB and Metelerkamp W 1995. Ecology and Resources of the Middle and Lower Orange River and Hinterland. In: Smith AB (ed). *Eniqualand: Studies of the Orange River Frontier* pp. 265-300. Rondebosch: UCT Press.
- Tattersall I 2006. Human evolution in Africa. In: Blundell G (ed). *Origins: The story of the emergence of humans and humanity in Africa Part 1*: pp 16-45. Cape Town: Double Story.
- Thackeray AI, Thackeray JF and Beaumont B 1983. Excavations at the Blinkklipkop Specularite Mine near Postmasburg, Northern Cape. *The South African Archaeological Bulletin*, Vol. 38, *Secrets of the Stone Age*. Cape Town: David Philip Publishers.

APPENDIX A: ARCHAEOLOGICAL SPECIALIST REPORTS

9 . ARCHAEOLOGICAL STUDY

*Proposed Low Income Housing Project Noenieput, Groot Mier Municipality,
Northern Cape.*

April 2013

Compiled for:

EnviroAfrica

Bernard De Witt

bernard@enviroafrica.co.za

Tel. 021 851 1616

SAHRA Case ID: 1494



9.1 DESCRIPTION OF THE PROPERTY & METHODOLOGY

The Mier Municipality intends to rezone the property to residential. The property is 11 ha in extent. 100 individual land units are planned, including associated infrastructure, public open spaces and a place of worship. A three-person team from PAAC surveyed the terrain on 29 November 2012. The GPS track is illustrated in Figure 8. The area is also located on the 1:50 000 topographic map 2720 CA Noenieput (Figure 9). The terrain was sparsely vegetated (Figure 10), but was characterised by a rocky, stony surface (Figure 10). This made identifying stone tools challenging. Particular attention was given to water erosion channels as likely place to find lithics. A spring (Figure 11) is also located on the property, and may have been the primary attraction to the area in the prehistoric past.

Three GPS handsets were used to record the track and mark points of interest and the location of archaeological resources. Digital cameras were used to take photographs of a representative sample of the lithics and other potential archaeological resources.

9.2 DESCRIPTION OF SITES IDENTIFIED

The stone tools form a strong background signature across the property. Acheulian, MSA and LSA tools were located. Please refer to the map in Figure 8 for a more detailed overview of distribution.

Four graves or burials were located on the property. Mostly situated near the Police station, they are informal (Figure 4-7).

Grave 1: 27°30'45.82"S; 20°8'36.54"E

Grave 2: 27°30'35.02"S; 20°8'28.08"E

Grave 3: 27°30'43.47"S; 20°8'37.73"E

Grave 4: 27°30'43.01"S; 20°8'87.87"E

9.3 DESCRIPTION OF THE ARTEFACTS

The site of the proposed Noenieput residential development has archaeological remains spanning the Earlier Stone Age (ESA), Middle Stone Age (MSA) and the Later Stone Age (LSA). It is very rare to find all three stone tool technologies on one site.

Description of finds

Table 5: MSA Finds

	Silcrete	Quartz	Quartzite	Jasper	Sandstone	Chert	Shale	Total

Flakes	68	12	154	1	25	1	16	277
Cores	17	2	40	0	15	1	2	77
Total	85	14	194	1	40	2	18	354

Table 6: Acheulian finds

	Silcrete	Quartzite	Sandstone	Total
Handaxe			4	4
Cleaver	1	1	3	5

9.4 DESCRIPTION OF BURIALS AND GRAVES

Four possible burials were also located on the property. Only one has a headstone with a date and all need further investigation.

9.4.1 Grave 1

This grave is placed immediately adjacent to the Police Station fence. It dates to 2002 (Figure 4).

9.4.2 Grave 2

Grave 2 is isolated to the North of the property and consists of loosely packed stone, forming a elongated heap to the side of the playing field (Figure 5)

9.4.3 Grave 3

Graves 3 and 4 are almost perpendicular to each other. Grave 3 is covered with broken pieces of grey slate (Figure 6).

9.4.4 Grave 4

Grave 4, similar to Grave 3, is also covered with broken creamy slate (Figure 7).

9.4.5 NHRA, No 25, 1999: s 36 Burial grounds and graves

- (1) Where it is not the responsibility of any other authority, SAHRA must conserve and generally care for burial grounds and graves protected in terms of this section, and it may make such arrangements for their conservation as it sees fit.
- (2) SAHRA must identify and record the graves of victims of conflict and any other graves which it deems to be of cultural significance and may erect memorials associated with the grave referred to in subsection (1), and must maintain such memorials.
- (3) No person may, without a permit issued by SAHRA or a provincial heritage resources authority—

(a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;

(b) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or

(c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.

(4) SAHRA or a provincial heritage resources authority may not issue a permit for the destruction or damage of any burial ground or grave referred to in subsection (3)(a) unless it is satisfied that the applicant has made satisfactory arrangements for the exhumation and re-interment of the contents of such graves, at the cost of the applicant and in accordance with any regulations made by the responsible heritage resources authority.

(5) SAHRA or a provincial heritage resources authority may not issue a permit for any activity under subsection (3)(b) unless it is satisfied that the applicant has, in accordance with regulations made by the responsible heritage resources authority—

(a) made a concerted effort to contact and consult communities and individuals who by tradition have an interest in such grave or burial ground; and

(b) reached agreements with such communities and individuals regarding the future of such grave or burial ground.

(6) Subject to the provision of any other law, any person who in the course of development or any other activity discovers the location of a grave, the existence of which was previously unknown, must immediately cease such activity and report the discovery to the responsible heritage resources authority which must, in co-operation with the South African Police Service and in accordance with regulations of the responsible heritage resources authority—

(a) carry out an investigation for the purpose of obtaining information on whether or not such grave is protected in terms of this Act or is of significance to any community; and

(b) if such grave is protected or is of significance, assist any person who or community which is a direct descendant to make arrangements for the exhumation and re-interment of the contents of such grave or, in the absence of such person or community, make any such arrangements as it deems fit.

(7) (a) SAHRA must, over a period of five years from the commencement of this Act, submit to the Minister for his or her approval lists of graves and burial grounds of persons connected with the liberation struggle and who died in exile or as a result of the action of State security forces or agents provocateur and which, after a process of public consultation, it believes should be included among those protected under this section.

(b) The Minister must publish such lists as he or she approves in the Gazette.

(8) Subject to section 56(2), SAHRA has the power, with respect to the graves of victims of conflict outside the Republic, to perform any function of a provincial heritage resources authority in terms of this section.

(9) SAHRA must assist other State Departments in identifying graves in a foreign country of victims of conflict connected with the liberation struggle and, following negotiations with the next of kin, or relevant authorities, it may re-inter the remains of that person in a prominent place in the capital of the Republic.

9.5 FIELD RATING

While grading is ultimately the responsibility of the heritage resources authorities field rating is suggested below.

- a. National: This site is considered to be of Grade I significance and should be nominated as such.
- b. Provincial: This site is considered to be of Grade II significance and should be nominated as such.
- c. Local: this site is of Grade IIIA significance. Mitigation as part of the development process is not advised. The site should be retained as a heritage site (High significance).
- d. Local: this site is of Grade IIIB significance. It should be mitigated and (part) should be retained as a heritage site (High significance).
- e. Generally Protected A: this site should be mitigated before destruction (generally High/Medium significance).
- f. Generally Protected B: this site should be recorded before destruction (generally Medium significance).
- g. Generally Protected C: this site has been sufficiently recorded. It requires no further

recording before destruction (generally Low significance).

9.5.1 Lithics

The lithics found on the property rate as Generally Protected B. This site needs further recording before destruction. The range and number of stone tools found on the property suggest that the site has a generally Medium significance

9.5.2 Burials

The burials may have a high local significance and are awarded a field rating of Generally Protected A. The site should be mitigated before destruction.

9.6 STATEMENT OF SIGNIFICANCE

NHRA 1999, 3(3)

Table 7: Significance Criteria

Significance Criteria	Lithics	Burials
a. its importance in the community, or pattern of South Africa's history;	Medium.	High, possibly within the local community
b. its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;	High: It is rare to find all three Stone Ages represented at once site in the Northern Cape.	N/A
c. its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;	High: The site can contribute to the understanding of our prehistoric cultural heritage.	Unknown
d. its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;	Low: The Acheulian, Middle and Later Stone Age lithics demonstrate the characteristics of 2 Ma of cultural objects. Other sites, particularly closed, in situ ones will offer better examples	Unknown
e. its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;	N/A	Unknown
f. its importance in demonstrating a high degree	Low: The Acheulian, Middle and Later Stone Age lithics	N/A

of creative or technical achievement at a particular period;	demonstrate the characteristics of 2 Ma of cultural objects. Other sites, particularly closed, in situ ones will offer better examples	
g. its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;	N/A	Unknown
h. Strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa;	N/A	Unknown
i. Sites of Significance relating to the history of slavery in South Africa.	N/A	Unknown

9.7 RECOMMENDATIONS & CONCLUSIONS

9.7.1 Lithics

The stone tools or lithics found on the property need to be recorded and sampled in detail, prior to development. The recording of the lithics should assess the raw material, typology and dimensions of a sample of the property. It is recommendation that the site be mapped, documented, minimally sampled, and then destroyed (with a permit). Mitigation usually involves a requirement to collect sample through a controlled surface pick-up (CSP) of the cultural and other remains that will adequately allow characterization and relative dating of the site.

9.7.1.1 Controlled surface pick-up (CSP)

Controlled surface pick-up (or collection) consists of further detailed survey of the ground surface of the archaeological site to locate, map and collect artefacts on the surface. This method is used in open ploughed fields where archaeological sites were documented through a pedestrian survey. The goal of a CSP is to gather information that will assist in documenting the characteristics and extent of the archaeological site.

5. The location of all artefacts on the ground surface will be accurately mapped using a total station, transit and tape, stadia rod, or GPS unit. Artefacts will be recorded and catalogued by their mapped location, relevant information (e.g., spatial relationship of diagnostics, artefact concentration areas) will also be recorded.

6. For very large and dense surface scatters, as is the case at Rietfontein, the full CSP will be conducted by grid units (maximum 5 m by 5 m units) over the archaeological site. Artefacts will be recorded and catalogued with their grid unit designation.
7. All formal artefact types and diagnostic categories, including will be collected.
8. A representative sample of non-diagnostic artefacts will be collected, taking into consideration the archaeological site type, type and frequency of non-diagnostic artefacts.

Prior to the CSP a permit needs to be acquired from SAHRA for the sampling process. After the CSP the sampled will be analysed and a report sent to the developers and SAHRA. SAHRA should then issue a permit allowing the destruction of the site. The sample will be stored for future reference at the designated repository.

9.7.2 Burials

The burials need further investigation. Firstly, it needs to be determined if they are burials. Should they prove to be human burials, further mitigation is necessary. Three alternatives are suggested:

1. Protection of the graves from the impact of the development including possibly mitigation through fencing and avoidance of the area by the development. A mini-management plan for maintenance of the graves must also be developed.
2. Relocation of the graves involving public participation and possibly further archival research,
3. or both.

9.8 FIGURES

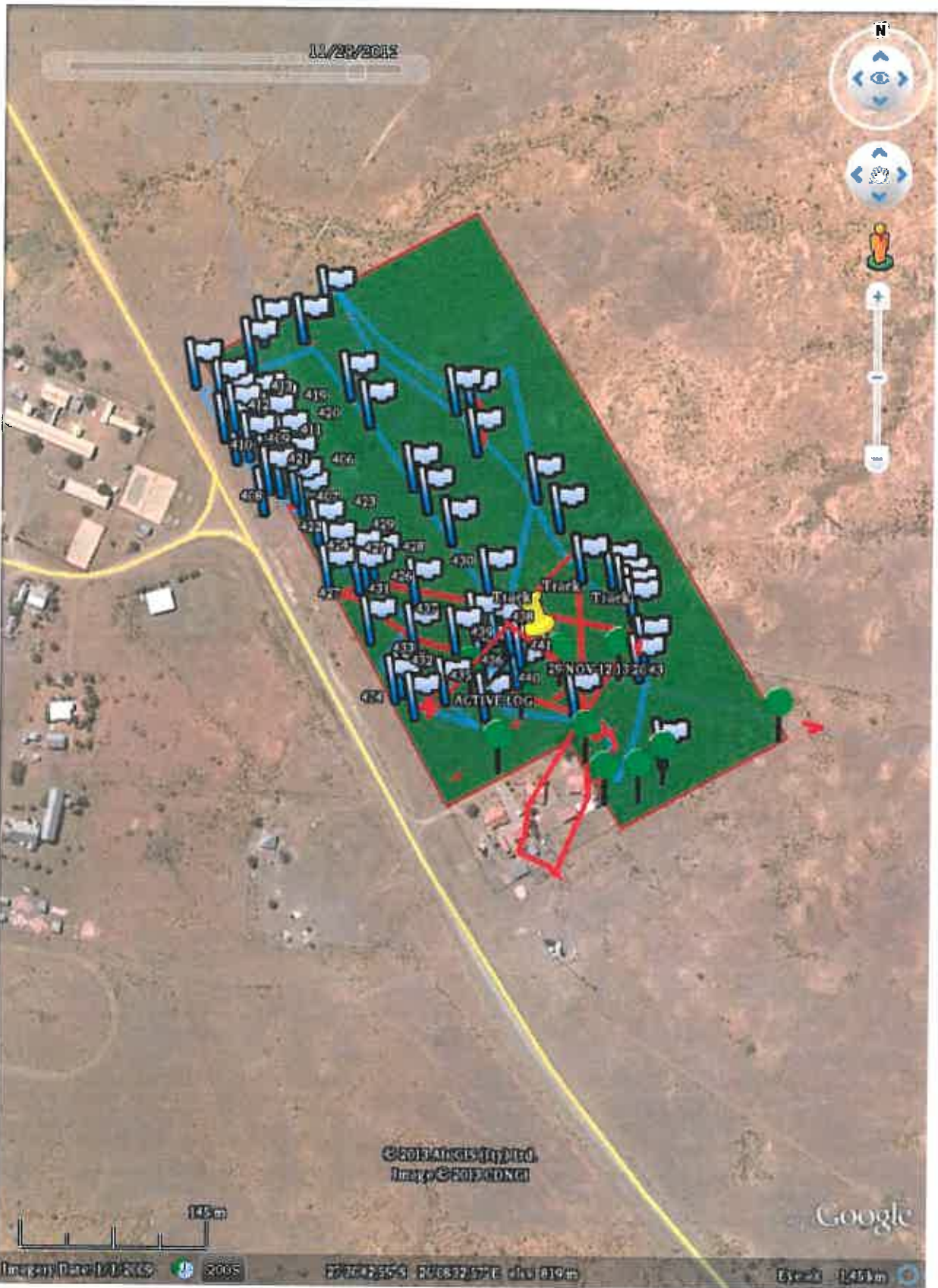


Figure 8: GPS tracking.

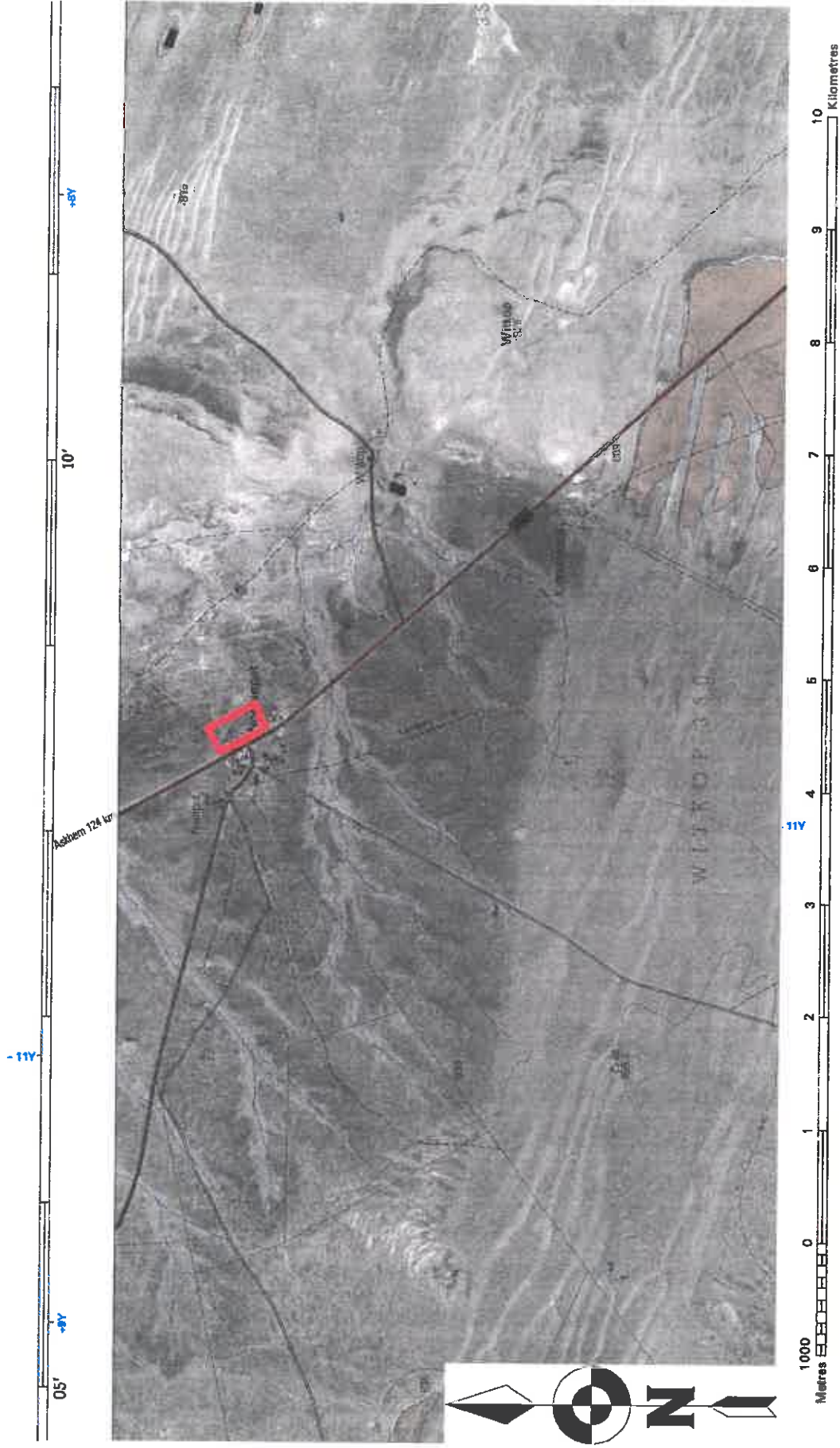


Figure 9: 1:50 000 topographic map.



Figure 10: General view, towards Police Station, showing sparse vegetation and rocky surface.



Figure 11: Spring.

Heritage Impact Assessment Report

Noenieput Illustrative Material

SAHRA Case #:



Pro-Active Archaeological Consultants

www.paac.co.za

Dr Liezl van Pletzen-Vos
083 2785 125
liezl@paac.co.za

PostNet Suite 168
Private Bag X15
Somerset West
7129

Dr Reneé Rust
021 844 0949
renee@paac.co.za

Figures

Figure 1: Location of finds.....	4
Figure 2: Mark 407.....	5
Figure 3: Mark 406.....	5
Figure 4: Mark 408.....	5
Figure 5: Mark 409.....	5
Figure 6: Mark 411.....	6
Figure 7: Mark 412.....	6
Figure 8: Mark 413.....	6
Figure 9: Mark 414.....	6
Figure 10: Mark 415.....	7
Figure 11: Mark 416.....	7
Figure 12: Mark 417.....	7
Figure 13: Mark 418.....	7
Figure 14: Mark 419.....	8
Figure 15: Mark 420.....	8
Figure 16: Mark 421.....	8
Figure 17: Mark 422.....	8
Figure 18: Mark 423.....	9
Figure 19: Mark 424.....	9
Figure 20: Mark 425.....	9
Figure 21: Mark 426.....	9
Figure 22: Mark 427.....	10
Figure 23: Mark 428.....	10
Figure 24: Mark 429.....	10
Figure 25: Mark 430.....	10
Figure 26: Mark 431.....	11
Figure 27: Mark 432.....	11
Figure 28: Mark 433.....	11
Figure 29: Mark 434.....	11
Figure 30: Mark 435.....	12
Figure 31: Mark 436.....	12
Figure 32: Mark 437.....	12
Figure 33: Mark 438.....	12
Figure 34: Mark 439.....	13
Figure 35: Mark 440.....	13
Figure 36: Mark 441.....	13
Figure 37: IMG_3529.png.....	13
Figure 38: IMG_3531.png.....	14
Figure 39: IMG_3536.png.....	14
Figure 40: IMG_3544.png.....	14
Figure 41: IMG_3552.png.....	14
Figure 42: IMG_3555.png.....	15
Figure 43: IMG_3564.png.....	15
Figure 44: Mark 098.....	15
Figure 45: Mark 099.....	15

Figure 46: Mark 100.....16
 Figure 47: Mark 101.....16
 Figure 48: Mark 102.....16
 Figure 49: Mark 103.....16
 Figure 50: Mark 104.....17
 Figure 51: Mark 106.....17
 Figure 52: Mark 107.....17
 Figure 53: Mark 108.....17
 Figure 54: Mark 109.....18
 Figure 55: Mark 110.....18
 Figure 56: Mark 111.....18
 Figure 57: Mark 112.....18
 Figure 58: Mark 113.....19
 Figure 59: Mark 114.....19
 Figure 60: Mark 115.....19
 Figure 61: Mark 118.....19
 Figure 62: Mark 121.....20
 Figure 63: Mark 121b.....20
 Figure 64: Mark 122.....20
 Figure 65: Mark 123.....20
 Figure 66: Mark 124.....21
 Figure 67: Mark 125.....21
 Figure 68: Mark 126.....21
 Figure 69: Mark 127.....21
 Figure 70: Mark 128.....22
 Figure 71: Mark 129.....22
 Figure 72: Mark 130.....22
 Figure 73: Mark 131.....22

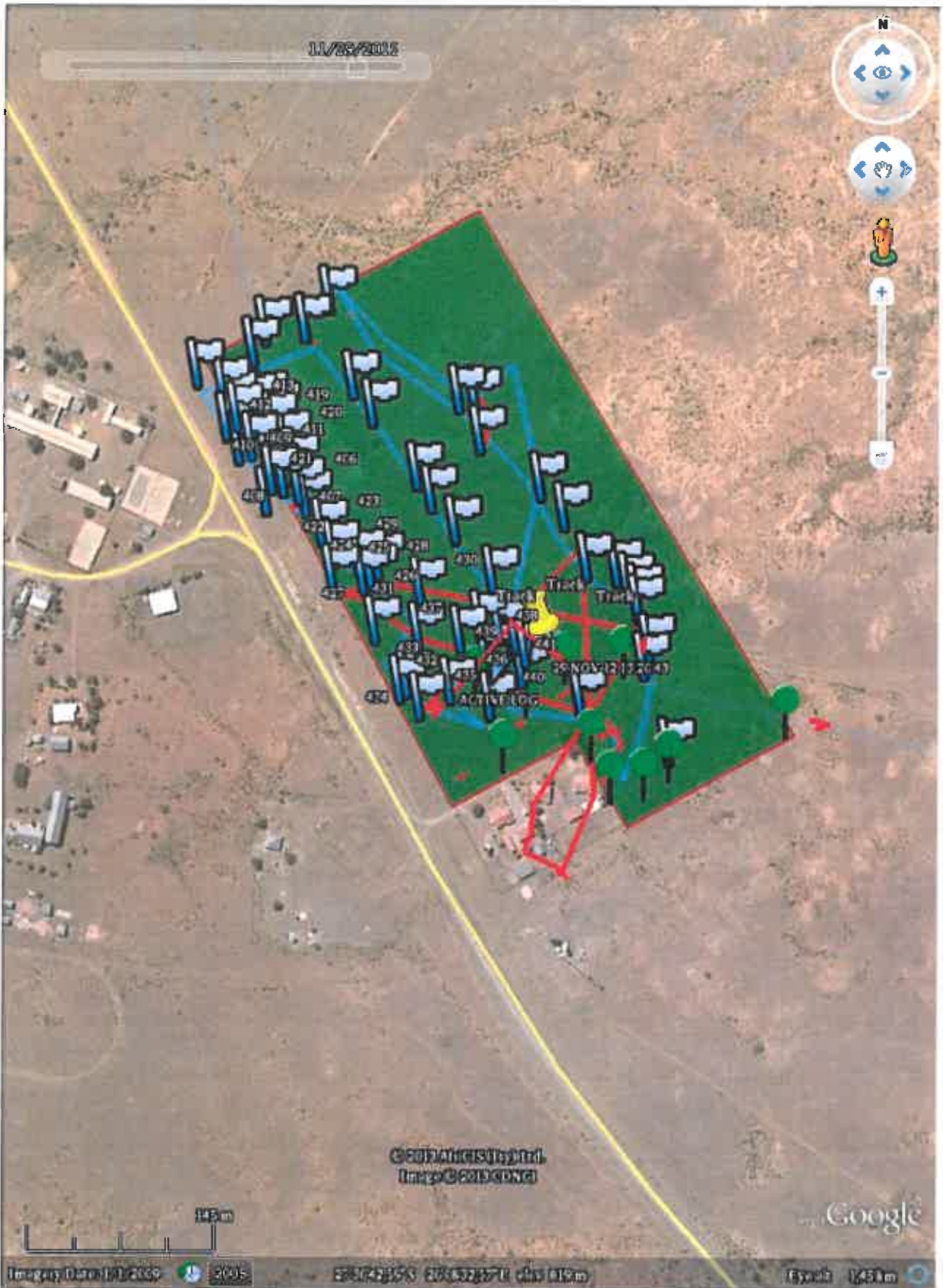


Figure 1: Location of finds



Figure 2: Mark 407



Figure 3: Mark 406



Figure 4: Mark 408



Figure 5: Mark 409



Figure 6: Mark 411



Figure 7: Mark 412

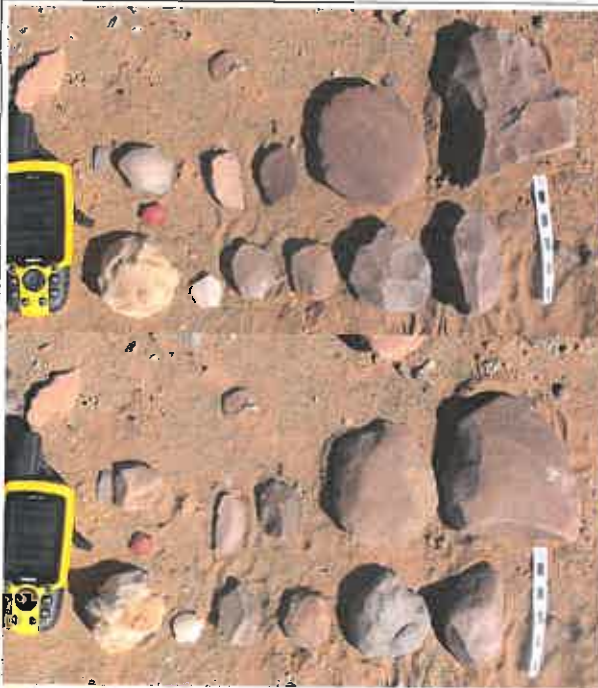


Figure 8: Mark 413



Figure 9: Mark 414



Figure 10: Mark 415



Figure 11: Mark 416



Figure 12: Mark 417



Figure 13: Mark 418

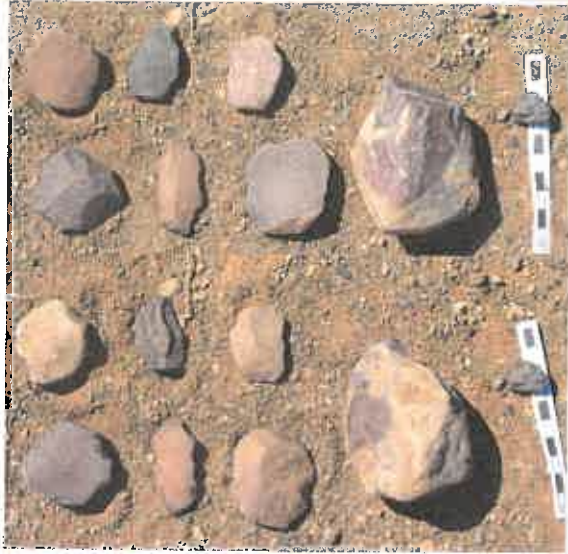


Figure 14: Mark 419



Figure 15: Mark 420



Figure 16: Mark 421



Figure 17: Mark 422



Figure 18: Mark 423



Figure 19: Mark 424



Figure 20: Mark 425



Figure 21: Mark 426



Figure 22: Mark 427



Figure 23: Mark 428



Figure 24: Mark 429



Figure 25: Mark 430



Figure 26: Mark 431



Figure 27: Mark 432



Figure 28: Mark 433



Figure 29: Mark 434



Figure 30: Mark 435



Figure 31: Mark 436



Figure 32: Mark 437



Figure 33: Mark 438



Figure 34: Mark 439



Figure 35: Mark 440



Figure 36: Mark 441



Figure 37: IMG_3529.png



Figure 38: IMG_3531.png



Figure 39: IMG_3536.png



Figure 40: IMG_3544.png

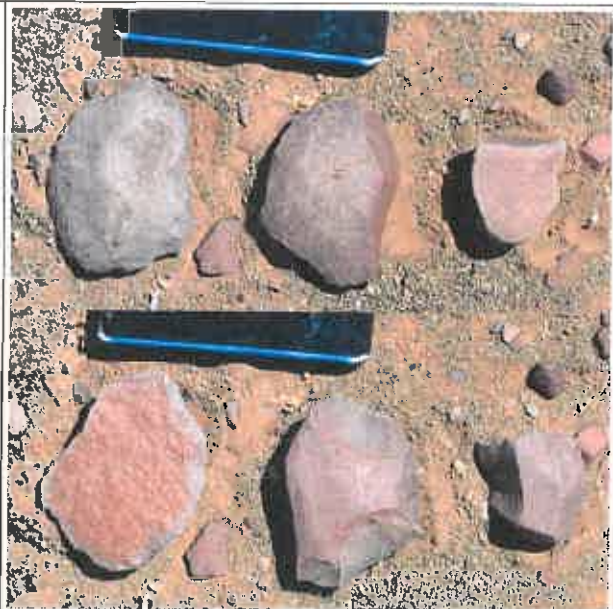


Figure 41: IMG_3552.png



Figure 42: IMG_3555.png

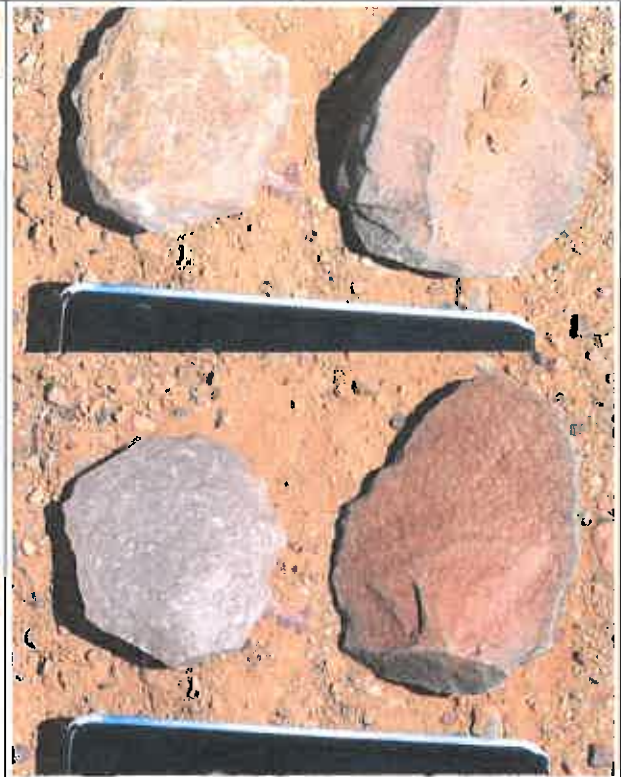


Figure 43: IMG_3564.png



Figure 44: Mark 098



Figure 45: Mark 099



Figure 46: Mark 100



Figure 47: Mark 101



Figure 48: Mark 102



Figure 49: Mark 103



Figure 50: Mark 104



Figure 51: Mark 106



Figure 52: Mark 107



Figure 53: Mark 108

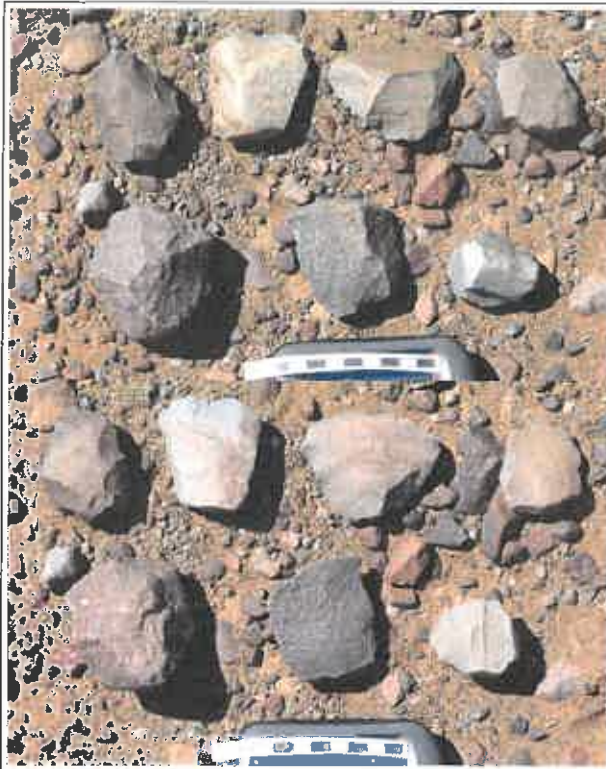


Figure 54: Mark 109



Figure 55: Mark 110



Figure 56: Mark 111



Figure 57: Mark 112



Figure 58: Mark 113



Figure 59: Mark 114



Figure 60: Mark 115



Figure 61: Mark 118



Figure 62: Mark 121



Figure 63: Mark 121b



Figure 64: Mark 122



Figure 65: Mark 123



Figure 66: Mark 124



Figure 67: Mark 125



Figure 68: Mark 126



Figure 69: Mark 127



Figure 70: Mark 128



Figure 71: Mark 129



Figure 72: Mark 130



Figure 73: Mark 131

APPENDIX E

PUBLIC PARTICIPATION PROCESS

Appendix E (1)

Interested and Affected Parties

Appendix E (2)

Example of Initial Notification Letter

EnviroAfrica

Environmental Planning and Impact Assessment Consultants
Omgewingsbeplanning en Impakbeoordeling Konsultante

05 November 2012

Dear Interested and Affected Party

NEMAA BASIC ASSESSMENT PUBLIC PARTICIPATION PROCESS

PROPOSED LOW COST HOUSING, NOENIEPUT, MIER MUNICIPALITY, NORTHERN CAPE

DEPARTMENT OF ENVIRONMENTAL AFFAIRS (DEA) REF NO: NC/BA/SIY/MIE/NOE/2012

Notice is hereby given of the public participation process in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended ("NEMA"), Environmental Impact Assessment Regulations 2010.

The proposed low cost housing development and associated infrastructure includes the below activities listed in terms of the NEMA EIA Regulations 2010. EnviroAfrica cc has been appointed by Mier Municipality, to undertake the **Basic Assessment** for the proposed project.

Application for environmental authorization to undertake the following activities:

Government Notice R544 (Listing Notice 1): Activity No. **11, 18, 22 and 23**

Government Notice R546 (Listing Notice 3): Activity No. **13**

Project Description & Location: The site is located on Portion 18 of Farm Witkop 350, Noenieput, Northern Cape. It is proposed that the property be rezoned and subdivided for the development of serviced low cost housing, including associated infrastructure.

Application for exemption: The applicant is intending to apply for exemption from Regulation 10(2)(d) of Government Notice No. R543, which states that the applicant must within 12 days of the date of the decision, place a notice in the same newspaper(s) used for the placing of advertisements as part of the public participation process, informing Interested and Affected Parties of the decision, where the decision can be accessed and the right to appeal. Registered I&AP's will be notified of the decision by post and/or preferred method of communication.

Public Participation: Interested and Affected Parties (I&APs) are hereby notified of the application and invited to register (in writing) and/or provide initial comments and identify any issues, concerns or opportunities relating to this project to the contact details provided below, on or before 14 December 2012. In order to register or submit comment, I&APs should refer to the project name and DEA reference number above, and provide their name, address & contact details (*indicating your preferred method of notification*) and an indication of any direct business, financial, personal, or other interest which they have in the application. Please note that future correspondence will only be sent to registered Interested and Affected Parties. You are also requested to pass this information to any person you feel should be notified.

Consultant: EnviroAfrica (P.O. Box 5367, Helderberg, 7135, Fax: 086 512 0154 / Tel: 021 8511616 / E-mail: admin@enviroafrica.co.za)

Yours sincerely



Clinton Geyser
EnviroAfrica cc

PROPOSED LOW COST HOUSING, NOENIEPUT, MIER MUNICIPALITY, NORTHERN CAPE



SITE CO-ORDINATES

27° 30'40.02" S
20° 08'33.62" E



PROPOSED SITE



DEA REF:

NC/BA/SIY/MIE/NOE/2012

ENVIRO AFRICA REF:

0366

NOVEMBER 2012

EnviroAfrica cc

Appendix E (3)

Example of Posters Placed

NEMA PUBLIC PARTICIPATION PROCESS
PROPOSED LOW COST HOUSING, NOENIEPUT, MIER MUNICIPALITY, NORTHERN CAPE
DEPARTMENT OF ENVIRONMENTAL AFFAIRS (DEA) REF NO: NC/BA/SIY/MIE/NOE/2012

Notice is hereby given of the public participation process in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended ("NEMA"), Environmental Impact Assessment Regulations 2010.

The proposed low cost housing development and associated infrastructure includes the below activities listed in terms of the NEMA EIA Regulations 2010. EnviroAfrica cc has been appointed by Mier Municipality, to undertake the **Basic Assessment** for the proposed project.

Application for environmental authorization to undertake the following activities:
Government Notice R544 (Listing Notice 1): Activity No. 11, 18, 22 and 23
Government Notice R546 (Listing Notice 3): Activity No. 13

Project Description & Location: The site is located on Portion 18 of Farm Witkop 350, Noenieput, Northern Cape. It is proposed that the property be rezoned and subdivided for the development of serviced low cost housing, including associated infrastructure.

Application for exemption: The applicant is intending to apply for exemption from Regulation 10(2)(d) of Government Notice No. R543, which states that the applicant must within 12 days of the date of the decision, place a notice in the same newspaper(s) used for the placing of advertisements as part of the public participation process, informing Interested and Affected Parties of the decision, where the decision can be accessed and the right to appeal. Registered I&AP's will be notified of the decision by post and/or preferred method of communication.

Public Participation: Interested and Affected Parties (I&APs) are hereby notified of the application and invited to register (in writing) and/or provide initial comments and identify any issues, concerns or opportunities relating to this project to the contact details provided below, on or before 14 December 2012. In order to register or submit comment, I&APs should refer to the project name and DEA reference number above, and provide their name, address & contact details (*indicating your preferred method of notification*) and an indication of any direct business, financial, personal, or other interest which they have in the application. Please note that future correspondence will only be sent to registered Interested and Affected Parties. You are also requested to pass this information to any person you feel should be notified.

Consultant: EnviroAfrica CC. P.O. Box 5367, Helderberg, 7135 / Fax: 086 512 0154 / Tel: 021 8511616 / E-mail: admin@enviroafrica.co.za

N

Proposed Site

Noenieput

Google

Eye alt 1.82 km

© 2012 Google
© 2012 AirGIS (Pty) Ltd.
Image © 2012 CDNGI

27°30'39.89" S 20°08'27.25" E elev. 820 m

Imagery Date 1/1/2009 2005



Appendix E (4)

**Proof of Application Submitted and Received by Department of
Environmental Affairs, Northern Cape**

EnviroAfrica

Environmental Planning and Impact Assessment Consultants
Omgewingsbeplanning en Impakbeoordeling Konsultante

02 October 2012

Department of Environmental Affairs and Nature Conservation
Directorate: Environmental Affairs
Private Bag X6102
KIMBERLEY
8300

Dear Sir / Madam

**RE: THE PROPOSED LOW COST HOUSING DEVELOPMENTS, MIER MUNICIPALITY,
NORTHERN CAPE – APPLICATION FORM.**

Please find enclosed 1 x hard copy as well as an electronic copy of the NEMA Application Form for Authorisation, in terms of the National Environmental Management Act, 1998 (Act 107 of 1998), as amended, and the Environmental Impact Regulations, 2010, for each of the following proposed low cost housing projects:

- Askam
- Groet Mier
- Loubos
- Noenieput
- Rietfontein
- Welkom

Should you have any queries, please do not hesitate to contact us.

Yours faithfully

Clinton Geyser
EnviroAfrica cc

RECEIPT COPY





DEPARTMENT OF
ENVIRONMENT AND NATURE CONSERVATION

ISEBE LEZENDALO
NOLONDOLOZO

LEFAPHA LA ,TIKOLOGO
LE TSHOMARELO YA TLHAGO

DÉPARTEMENT VAN
OMGEWING EN NATUUR BEWARING

90 Long Street
Sedco Building
Private Bag X6102
KIMBERLEY
8300

90 Long Street
Sedco Building
Private Bag X6102
KIMBERLEY
8300

90 Long Street
Sedco Building
Private Bag X6102
KIMBERLEY
8300

Long Street 90
Private Bag X6102
KIMBERLEY
8300

Tel: (053) 807 7430

Fax: (053) 831 3530

Enquiries :
Dipatlisiso :
Navvuo :
Imibuzo :

A. Yaphi

17th October 2012

Reference :
Tshupelo :
Yanyanyo :
Jesethiso :

NC/BA/SIY/MIE/NOE/2012

Bernard de Wit
EnviroAfrica cc
P.O. Box 5367
Helderberg
7135

Fax: 086 512 0154

Dear Sir/Madam

APPLICATION FOR ENVIRONMENTAL BASIC ASSESSMENT : LISTED ACTIVITIES GNR 544: 11, 18, 22, 23, GNR 548: ACTIVITY: 13: PROPOSED LOW COST HOUSING DEVELOPMENT AND ASSOCIATED INFRASTRUCTURE ON PORTION 18 OF THE FARM WITKOP 350, NOENIEPUT, SIYANDA DISTRICT MUNICIPALITY, NORTHERN CAPE PROVINCE.

The Department confirms having received the application form for environmental Basic Assessment of the abovementioned project on the 17th October 2012. As required in terms of the Environmental Impact Assessment Regulations, 2010.

The application has been assigned the reference number **NC/BA/SIY/MIE/NOE/2012**. Kindly quote this reference number in any future correspondence in respect of the application.

Kindly note the responsible officer for this project is **Ms. A. Yaphi** and can be contacted at this number **(054) 332 2885**.

Yours faithfully


L. Pienaar
Administration: EIA

Cc: Ivan Van Wyk – Mier Municipality
Fax: 054 531 0931

Appendix E (5)

Proof of postage of Initial Notification to State Departments

Nonieput

INVITATION TO COMMENT

Registered IB/APs 2012

Mier Municipality

LCH

DEADLINE

DATE

EnviroAfrica

Environmental Planning and Impact Assessment Consultants
Umengwenyeni on Impingwenyeni KwaZulu

IB/AP List for
Advertis Placets

No.	Title	Identity Name	Surname	Affiliation	Postal Address	Town/City	Code	Telephone	Fax	Email
1.	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr
1.1	Mr	FD	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr
2.	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr
2.1	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr
3.	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr
3.1	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr
4.	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr
4.1	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr
4.2	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr
5.	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr
5.1	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr
5.2	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr
5.3	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr
5.4	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr
5.5	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr
5.6	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr
5.7	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr
6.	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr
6.1	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr
7.	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr
7.1	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr
7.2	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr
7.3	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr
7.4	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr
7.5	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr
8.	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr
8.1	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr
8.2	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr
8.3	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr
9.	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr
9.1	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr
9.2	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr	Mr

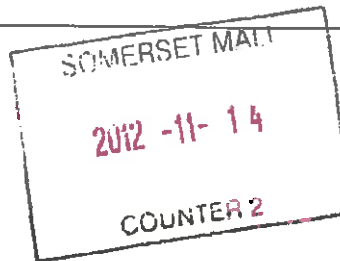
SOMERSETT MALL
2012 -11- 14
COUNTER 2

EnviroAfrica

Environmental Planning and Impact Assessment Consultants
Omgewingsbeplanning en Impakbeoordeling Konsultante

05 November 2012

Mier Local Municipality
PO Box 178
Mier
8811



Att: Niklaas Joseph

NEMAA BASIC ASSESSMENT PUBLIC PARTICIPATION PROCESS

PROPOSED LOW COST HOUSING, NOENIEPUT, MIER MUNICIPALITY, NORTHERN CAPE DEPARTMENT OF ENVIRONMENTAL AFFAIRS (DEA) REF NO: NC/BA/SIY/MIE/NOE/2012

Notice is hereby given of the public participation process in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended ("NEMA"), Environmental Impact Assessment Regulations 2010.

The proposed low cost housing development and associated infrastructure includes the below activities listed in terms of the NEMA EIA Regulations 2010. EnviroAfrica cc has been appointed by Mier Municipality, to undertake the **Basic Assessment** for the proposed project.

Application for environmental authorization to undertake the following activities:

Government Notice R544 (Listing Notice 1): Activity No. 11, 18, 22 and 23

Government Notice R546 (Listing Notice 3): Activity No. 13

Project Description & Location: The site is located on Portion 18 of Farm Witkop 350, Noenieput, Northern Cape. It is proposed that the property be rezoned and subdivided for the development of serviced low cost housing, including associated infrastructure.

Application for exemption: The applicant is intending to apply for exemption from Regulation 10(2)(d) of Government Notice No. R543, which states that the applicant must within 12 days of the date of the decision, place a notice in the same newspaper(s) used for the placing of advertisements as part of the public participation process, informing Interested and Affected Parties of the decision, where the decision can be accessed and the right to appeal. Registered I&AP's will be notified of the decision by post and/or preferred method of communication.

Public Participation: Interested and Affected Parties (I&APs) are hereby notified of the application and invited to register (in writing) and/or provide initial comments and identify any issues, concerns or opportunities relating to this project to the contact details provided below, on or before 14 December 2012. In order to register or submit comment, I&APs should refer to the project name and DEA reference number above, and provide their name, address & contact details (*indicating your preferred method of notification*) and an indication of any direct business, financial, personal, or other interest which they have in the application. Please note that future correspondence will only be sent to registered Interested and Affected Parties. You are also requested to pass this information to any person you feel should be notified.

Consultant: EnviroAfrica (P.O. Box 5367, Helderberg, 7135, Fax: 086 512 0154 / Tel: 021 8511616 / E-mail: admin@enviroafrica.co.za)

Yours sincerely

Clinton Geyser
EnviroAfrica cc

P.O.Box 5367
HELDERBERG 7135
Fax: (086) 512 0154
Tel: (021)851 1616

e-mail: admin@enviroafrica.co.za

29 St James Street
Somerset West
VAT 4870170513
CK 97 46008/23

PROPOSED LOW COST HOUSING, NOENIEPUT, MIER MUNICIPALITY, NORTHERN CAPE



SITE CO-ORDINATES

27° 30' 40.02" S
20° 08' 33.62" E



PROPOSED SITE

N



DEA REF:

NC/BA/SIY/MI/NOE/2012

ENVIRO AFRICA REF:

0366

NOVEMBER 2012

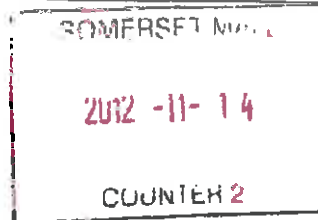
EnviroAfrica cc

EnviroAfrica

Environmental Planning and Impact Assessment Consultants
Omgewingsbeplanning en Impakbeoordeling Konsultante

05 November 2012

Mier Local Municipality
PO Box 178
Mier
8811



Att: Plet Smit

NEMAA BASIC ASSESSMENT PUBLIC PARTICIPATION PROCESS

PROPOSED LOW COST HOUSING, NOENIEPUT, MIER MUNICIPALITY, NORTHERN CAPE DEPARTMENT OF ENVIRONMENTAL AFFAIRS (DEA) REF NO: NC/BA/SIY/MIE/NOE/2012

Notice is hereby given of the public participation process in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended ("NEMA"), Environmental Impact Assessment Regulations 2010.

The proposed low cost housing development and associated infrastructure includes the below activities listed in terms of the NEMA EIA Regulations 2010. EnviroAfrica cc has been appointed by Mier Municipality, to undertake the **Basic Assessment** for the proposed project.

Application for environmental authorization to undertake the following activities:

Government Notice R544 (Listing Notice 1): Activity No. 11, 18, 22 and 23
Government Notice R546 (Listing Notice 3): Activity No. 13

Project Description & Location: The site is located on Portion 18 of Farm Witkop 350, Noenieput, Northern Cape. It is proposed that the property be rezoned and subdivided for the development of serviced low cost housing, including associated infrastructure.

Application for exemption: The applicant is intending to apply for exemption from Regulation 10(2)(d) of Government Notice No. R543, which states that the applicant must within 12 days of the date of the decision, place a notice in the same newspaper(s) used for the placing of advertisements as part of the public participation process, Informing Interested and Affected Parties of the decision, where the decision can be accessed and the right to appeal. Registered I&AP's will be notified of the decision by post and/or preferred method of communication.

Public Participation: Interested and Affected Parties (I&APs) are hereby notified of the application and invited to register (in writing) and/or provide initial comments and identify any issues, concerns or opportunities relating to this project to the contact details provided below, on or before 14 December 2012. In order to register or submit comment, I&APs should refer to the project name and DEA reference number above, and provide their name, address & contact details (*indicating your preferred method of notification*) and an indication of any direct business, financial, personal, or other interest which they have in the application. Please note that future correspondence will only be sent to registered Interested and Affected Parties. You are also requested to pass this information to any person you feel should be notified.

Consultant: EnviroAfrica (P.O. Box 5367, Helderberg, 7135, Fax: 086 512 0154 / Tel: 021 8511616 /
E-mail: admin@enviroafrica.co.za)

Yours sincerely

Clinton Geyser
EnviroAfrica cc

P.O.Box 5367
HELDERBERG 7135
Fax: (086) 512 0154
Tel: (021)851 1616

e-mail: admin@enviroafrica.co.za

29 St James Street
Somerset West
VAT 4870170513
CK 97 46008/23

PROPOSED LOW COST HOUSING, NOENIEPUT, MIER MUNICIPALITY, NORTHERN CAPE

SITE CO-ORDINATES

27° 30' 40.02" S
20° 08' 33.62" E



PROPOSED SITE

N



DEA REF:

NC/BA/SIY/MI/NOE/2012

ENVIRO AFRICA REF:

0366

NOVEMBER 2012

EnviroAfrica cc



EnviroAfrica

Environmental Planning and Impact Assessment Consultants
Omgewingsbeplanning en Impakbeoordeling Konsultante

05 November 2012

Mier Local Municipality
PO Box 178
Mier
8811

Att: Patrick Faroo



NEMAA BASIC ASSESSMENT PUBLIC PARTICIPATION PROCESS

PROPOSED LOW COST HOUSING, NOENIEPUT, MIER MUNICIPALITY, NORTHERN CAPE DEPARTMENT OF ENVIRONMENTAL AFFAIRS (DEA) REF NO: NC/BA/SIY/MIE/NOE/2012

Notice is hereby given of the public participation process in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended ("NEMA"), Environmental Impact Assessment Regulations 2010.

The proposed low cost housing development and associated infrastructure includes the below activities listed in terms of the NEMA EIA Regulations 2010. EnviroAfrica cc has been appointed by Mier Municipality, to undertake the **Basic Assessment** for the proposed project.

Application for environmental authorization to undertake the following activities:

Government Notice R544 (Listing Notice 1): Activity No. 11, 18, 22 and 23

Government Notice R546 (Listing Notice 3): Activity No. 13

Project Description & Location: The site is located on Portion 18 of Farm Witkop 350, Noenieput, Northern Cape. It is proposed that the property be rezoned and subdivided for the development of serviced low cost housing, including associated infrastructure.

Application for exemption: The applicant is intending to apply for exemption from Regulation 10(2)(d) of Government Notice No. R543, which states that the applicant must within 12 days of the date of the decision, place a notice in the same newspaper(s) used for the placing of advertisements as part of the public participation process, informing Interested and Affected Parties of the decision, where the decision can be accessed and the right to appeal. Registered I&AP's will be notified of the decision by post and/or preferred method of communication.

Public Participation: Interested and Affected Parties (I&APs) are hereby notified of the application and invited to register (in writing) and/or provide initial comments and identify any issues, concerns or opportunities relating to this project to the contact details provided below, on or before 14 December 2012. In order to register or submit comment, I&APs should refer to the project name and DEA reference number above, and provide their name, address & contact details (*indicating your preferred method of notification*) and an indication of any direct business, financial, personal, or other interest which they have in the application. Please note that future correspondence will only be sent to registered Interested and Affected Parties. You are also requested to pass this information to any person you feel should be notified.

Consultant: EnviroAfrica (P.O. Box 5367, Helderberg, 7135, Fax: 086 512 0154 / Tel: 021 8511616 /
E-mail: admin@enviroafrica.co.za)

Yours sincerely

Clinton Geyser
EnviroAfrica cc

P.O.Box 5367
HELDERBERG 7135
Fax: (086) 512 0154
Tel: (021)851 1616

e-mail: admin@enviroafrica.co.za

29 St James Street
Somerset West
VAT 4870170513
CK 97 46008/23

PROPOSED LOW COST HOUSING, NOENIEPUT, MIER MUNICIPALITY, NORTHERN CAPE



SITE CO-ORDINATES

27° 30'40.02" S
20° 08'33.62" E



PROPOSED SITE

N



DEA REF:
NC/BA/SIY/MI/NOE/2012

ENVIRO AFRICA REF:
0366

NOVEMBER 2012

EnviroAfrica cc

EnviroAfrica

Environmental Planning and Impact Assessment Consultants
Omgewingsbeplanning en Impakbeoordeling Konsultante



05 November 2012

Mier Local Municipality
PO Box 178
Mier
8811

Att: Sabina Masakhane

NEMAA BASIC ASSESSMENT PUBLIC PARTICIPATION PROCESS

PROPOSED LOW COST HOUSING, NOENIEPUT, MIER MUNICIPALITY, NORTHERN CAPE DEPARTMENT OF ENVIRONMENTAL AFFAIRS (DEA) REF NO: NC/BA/SIY/MIE/NOE/2012

Notice is hereby given of the public participation process in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended ("NEMA"), Environmental Impact Assessment Regulations 2010.

The proposed low cost housing development and associated infrastructure includes the below activities listed in terms of the NEMA EIA Regulations 2010. EnviroAfrica cc has been appointed by Mier Municipality, to undertake the **Basic Assessment** for the proposed project.

Application for environmental authorization to undertake the following activities:

Government Notice R544 (Listing Notice 1): Activity No. 11, 18, 22 and 23
Government Notice R546 (Listing Notice 3): Activity No. 13

Project Description & Location: The site is located on Portion 18 of Farm Witkop 350, Noenieput, Northern Cape. It is proposed that the property be rezoned and subdivided for the development of serviced low cost housing, including associated infrastructure.

Application for exemption: The applicant is intending to apply for exemption from Regulation 10(2)(d) of Government Notice No. R543, which states that the applicant must within 12 days of the date of the decision, place a notice in the same newspaper(s) used for the placing of advertisements as part of the public participation process, informing Interested and Affected Parties of the decision, where the decision can be accessed and the right to appeal. Registered I&AP's will be notified of the decision by post and/or preferred method of communication.

Public Participation: Interested and Affected Parties (I&APs) are hereby notified of the application and invited to register (in writing) and/or provide initial comments and identify any issues, concerns or opportunities relating to this project to the contact details provided below, on or before 14 December 2012. In order to register or submit comment, I&APs should refer to the project name and DEA reference number above, and provide their name, address & contact details (*indicating your preferred method of notification*) and an indication of any direct business, financial, personal, or other interest which they have in the application. Please note that future correspondence will only be sent to registered Interested and Affected Parties. You are also requested to pass this information to any person you feel should be notified.

Consultant: EnviroAfrica (P.O. Box 5367, Helderberg, 7135, Fax: 086 512 0154 / Tel: 021 8511616 /
E-mail: admin@enviroafrica.co.za)

Yours sincerely

Clinton Geyser
EnviroAfrica cc

P.O.Box 5367
HELDERBERG 7135
Fax: (086) 512 0154
Tel: (021)851 1616

e-mail: admin@enviroafrica.co.za

29 St James Street
Somerset West
VAT 4870170513
CK 97 46008/23

PROPOSED LOW COST HOUSING, NOENIEPUT, MIER MUNICIPALITY, NORTHERN CAPE



SITE CO-ORDINATES

27° 30'40.02" S
20° 08'33.62" E



PROPOSED SITE

N



DEA REF:

NC/BA/SIY/MI/NOE/2012

ENVIRO AFRICA REF:

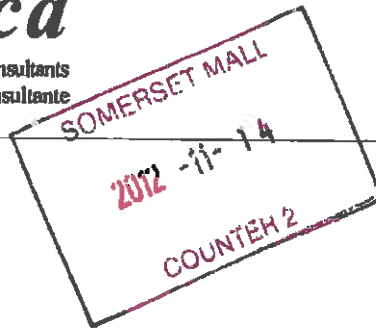
0366

NOVEMBER 2012

EnviroAfrica cc

EnviroAfrica

Environmental Planning and Impact Assessment Consultants
Omgewingsbeplanning en Impakbeoordeling Konsultante



05 November 2012

Mier Local Municipality
PO Box 178
Mier
8811

Att: Katrina Dodds

NEMAA BASIC ASSESSMENT PUBLIC PARTICIPATION PROCESS

PROPOSED LOW COST HOUSING, NOENIEPUT, MIER MUNICIPALITY, NORTHERN CAPE DEPARTMENT OF ENVIRONMENTAL AFFAIRS (DEA) REF NO: NC/BA/SIY/MIE/NOE/2012

Notice is hereby given of the public participation process in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended ("NEMA"), Environmental Impact Assessment Regulations 2010.

The proposed low cost housing development and associated infrastructure includes the below activities listed in terms of the NEMA EIA Regulations 2010. EnviroAfrica cc has been appointed by Mier Municipality, to undertake the **Basic Assessment** for the proposed project.

Application for environmental authorization to undertake the following activities:

Government Notice R544 (Listing Notice 1): Activity No. 11, 18, 22 and 23

Government Notice R546 (Listing Notice 3): Activity No. 13

Project Description & Location: The site is located on Portion 18 of Farm Witkop 350, Noenieput, Northern Cape. It is proposed that the property be rezoned and subdivided for the development of serviced low cost housing, including associated infrastructure.

Application for exemption: The applicant is intending to apply for exemption from Regulation 10(2)(d) of Government Notice No. R543, which states that the applicant must within 12 days of the date of the decision, place a notice in the same newspaper(s) used for the placing of advertisements as part of the public participation process, informing Interested and Affected Parties of the decision, where the decision can be accessed and the right to appeal. Registered I&AP's will be notified of the decision by post and/or preferred method of communication.

Public Participation: Interested and Affected Parties (I&APs) are hereby notified of the application and invited to register (In writing) and/or provide initial comments and identify any issues, concerns or opportunities relating to this project to the contact details provided below, on or before 14 December 2012. In order to register or submit comment, I&APs should refer to the project name and DEA reference number above, and provide their name, address & contact details (*indicating your preferred method of notification*) and an indication of any direct business, financial, personal, or other interest which they have in the application. Please note that future correspondence will only be sent to registered Interested and Affected Parties. You are also requested to pass this information to any person you feel should be notified.

Consultant: EnviroAfrica (P.O. Box 5367, Helderberg, 7135, Fax: 086 512 0154 / Tel: 021 8511616 /
E-mail: admin@enviroafrica.co.za)

Yours sincerely

Clinton Geysers
EnviroAfrica cc

P.O.Box 5367
HELDERBERG 7135
Fax: (086) 512 0154
Tel: (021)851 1616

e-mail: admin@enviroafrica.co.za

29 St James Street
Somerset West
VAT 4870170513
CK 97 46008/23

PROPOSED LOW COST HOUSING, NOENIEPUT, MIER MUNICIPALITY, NORTHERN CAPE

SITE CO-ORDINATES

27° 30' 40.02" S
20° 08' 33.62" E



PROPOSED SITE



DEA REF:

NC/BA/SIY/MIE/NOE/2012

ENVIRO AFRICA REF:

0366

NOVEMBER 2012

EnviroAfrica cc



EnviroAfrica

Environmental Planning and Impact Assessment Consultants
Omgewingsbeplanning en Impakbeoordeling Konsultante

05 November 2012

Mier Local Municipality
PO Box 178
Mier
8811

Att: Anna-Marie Titus

NEMAA BASIC ASSESSMENT PUBLIC PARTICIPATION PROCESS

PROPOSED LOW COST HOUSING, NOENIEPUT, MIER MUNICIPALITY, NORTHERN CAPE DEPARTMENT OF ENVIRONMENTAL AFFAIRS (DEA) REF NO: NC/BA/SIY/MIE/NOE/2012

Notice is hereby given of the public participation process in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended ("NEMA"), Environmental Impact Assessment Regulations 2010.

The proposed low cost housing development and associated infrastructure includes the below activities listed in terms of the NEMA EIA Regulations 2010. EnviroAfrica cc has been appointed by Mier Municipality, to undertake the **Basic Assessment** for the proposed project.

Application for environmental authorization to undertake the following activities:

Government Notice R544 (Listing Notice 1): Activity No. 11, 18, 22 and 23

Government Notice R546 (Listing Notice 3): Activity No. 13

Project Description & Location: The site is located on Portion 18 of Farm Witkop 350, Noenieput, Northern Cape. It is proposed that the property be rezoned and subdivided for the development of serviced low cost housing, including associated infrastructure.

Application for exemption: The applicant is intending to apply for exemption from Regulation 10(2)(d) of Government Notice No. R543, which states that the applicant must within 12 days of the date of the decision, place a notice in the same newspaper(s) used for the placing of advertisements as part of the public participation process, informing interested and affected parties of the decision, where the decision can be accessed and the right to appeal. Registered I&AP's will be notified of the decision by post and/or preferred method of communication.

Public Participation: Interested and Affected Parties (I&APs) are hereby notified of the application and invited to register (in writing) and/or provide initial comments and identify any issues, concerns or opportunities relating to this project to the contact details provided below, on or before 14 December 2012. In order to register or submit comment, I&APs should refer to the project name and DEA reference number above, and provide their name, address & contact details (*indicating your preferred method of notification*) and an indication of any direct business, financial, personal, or other interest which they have in the application. Please note that future correspondence will only be sent to registered interested and affected parties. You are also requested to pass this information to any person you feel should be notified.

Consultant: EnviroAfrica (P.O. Box 5367, Helderberg, 7135, Fax: 086 512 0154 / Tel: 021 8511616 / E-mail: admin@enviroafrica.co.za)

Yours sincerely



Clinton Geysers
EnviroAfrica cc

P.O.Box 5367
HELDERBERG 7135
Fax: (086) 512 0154
Tel: (021)851 1616

e-mail: admin@enviroafrica.co.za

29 St James Street
Somerset West
VAT 4870170513
CK 97 46008/23

PROPOSED LOW COST HOUSING, NOENIEPUT, MIER MUNICIPALITY, NORTHERN CAPE



SITE CO-ORDINATES

27° 30' 40.02" S
20° 08' 33.62" E



PROPOSED SITE



DEA REF:
NC/BA/SIY/MIE/NOE/2012

ENVIRO AFRICA REF:
0366

NOVEMBER 2012

EnviroAfrica cc

EnviroAfrica

Environmental Planning and Impact Assessment Consultants
Omgewingsbeplanning en Impakbeoordeling Konsultante



05 November 2012

Mier Local Municipality
PO Box 178
Mier
8811

Att: Magrieta Eiman

NEMAA BASIC ASSESSMENT PUBLIC PARTICIPATION PROCESS

PROPOSED LOW COST HOUSING, NOENIEPUT, MIER MUNICIPALITY, NORTHERN CAPE DEPARTMENT OF ENVIRONMENTAL AFFAIRS (DEA) REF NO: NC/BA/SIY/MIE/NOE/2012

Notice is hereby given of the public participation process in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended ("NEMA"), Environmental Impact Assessment Regulations 2010.

The proposed low cost housing development and associated infrastructure includes the below activities listed in terms of the NEMA EIA Regulations 2010. EnviroAfrica cc has been appointed by Mier Municipality, to undertake the **Basic Assessment** for the proposed project.

Application for environmental authorization to undertake the following activities:

Government Notice R544 (Listing Notice 1): Activity No. 11, 18, 22 and 23

Government Notice R546 (Listing Notice 3): Activity No. 13

Project Description & Location: The site is located on Portion 18 of Farm Witkop 350, Noenieput, Northern Cape. It is proposed that the property be rezoned and subdivided for the development of serviced low cost housing, including associated infrastructure.

Application for exemption: The applicant is intending to apply for exemption from Regulation 10(2)(d) of Government Notice No. R543, which states that the applicant must within 12 days of the date of the decision, place a notice in the same newspaper(s) used for the placing of advertisements as part of the public participation process, informing Interested and Affected Parties of the decision, where the decision can be accessed and the right to appeal. Registered I&AP's will be notified of the decision by post and/or preferred method of communication.

Public Participation: Interested and Affected Parties (I&APs) are hereby notified of the application and invited to register (in writing) and/or provide initial comments and identify any issues, concerns or opportunities relating to this project to the contact details provided below, on or before 14 December 2012. In order to register or submit comment, I&APs should refer to the project name and DEA reference number above, and provide their name, address & contact details (*indicating your preferred method of notification*) and an indication of any direct business, financial, personal, or other interest which they have in the application. Please note that future correspondence will only be sent to registered Interested and Affected Parties. You are also requested to pass this information to any person you feel should be notified.

Consultant: EnviroAfrica (P.O. Box 5367, Helderberg, 7135, Fax: 086 512 0154 / Tel: 021 8511616 / E-mail: admin@enviroafrica.co.za)

Yours sincerely

Clinton Geyser
EnviroAfrica cc

P.O.Box 5367
HELDERBERG 7135
Fax: (086) 512 0154
Tel: (021)851 1616

e-mail: admin@enviroafrica.co.za

29 St James Street
Somerset West
VAT 4870170513
CK 97 46008/23

PROPOSED LOW COST HOUSING, NOENIEPUT, MIER MUNICIPALITY, NORTHERN CAPE



SITE CO-ORDINATES

27° 30'40.02" S
20° 08'33.62" E



PROPOSED SITE



DEA REF:

NC/BA/SIY/MIE/NOE/2012

ENVIRO AFRICA REF:

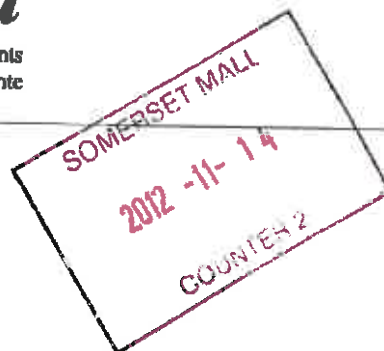
0366

NOVEMBER 2012

EnviroAfrica cc

EnviroAfrica

Environmental Planning and Impact Assessment Consultants
Omgewingsbeplanning en Impakbeoordeling Konsultante



05 November 2012

Siyanda District Municipality
Private Bag X 6039
Upington
8800

Att: Mr D Ngxanga

NEMAA BASIC ASSESSMENT PUBLIC PARTICIPATION PROCESS

PROPOSED LOW COST HOUSING, NOENIEPUT, MIER MUNICIPALITY, NORTHERN CAPE DEPARTMENT OF ENVIRONMENTAL AFFAIRS (DEA) REF NO: NC/BA/SIY/MIE/NOE/2012

Notice is hereby given of the public participation process in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended ("NEMA"), Environmental Impact Assessment Regulations 2010.

The proposed low cost housing development and associated infrastructure includes the below activities listed in terms of the NEMA EIA Regulations 2010. EnviroAfrica cc has been appointed by Mier Municipality, to undertake the **Basic Assessment** for the proposed project.

Application for environmental authorization to undertake the following activities:

Government Notice R544 (Listing Notice 1): Activity No. 11, 18, 22 and 23
Government Notice R546 (Listing Notice 3): Activity No. 13

Project Description & Location: The site is located on Portion 18 of Farm Witkop 350, Noenieput, Northern Cape. It is proposed that the property be rezoned and subdivided for the development of serviced low cost housing, including associated infrastructure.

Application for exemption: The applicant is intending to apply for exemption from Regulation 10(2)(d) of Government Notice No. R543, which states that the applicant must within 12 days of the date of the decision, place a notice in the same newspaper(s) used for the placing of advertisements as part of the public participation process, informing Interested and Affected Parties of the decision, where the decision can be accessed and the right to appeal. Registered I&AP's will be notified of the decision by post and/or preferred method of communication.

Public Participation: Interested and Affected Parties (I&APs) are hereby notified of the application and invited to register (in writing) and/or provide initial comments and identify any issues, concerns or opportunities relating to this project to the contact details provided below, on or before 14 December 2012. In order to register or submit comment, I&APs should refer to the project name and DEA reference number above, and provide their name, address & contact details (*indicating your preferred method of notification*) and an indication of any direct business, financial, personal, or other interest which they have in the application. Please note that future correspondence will only be sent to registered Interested and Affected Parties. You are also requested to pass this information to any person you feel should be notified.

Consultant: EnviroAfrica (P.O. Box 5367, Helderberg, 7135, Fax: 086 512 0154 / Tel: 021 8511616 /
E-mail: admin@enviroafrica.co.za)

Yours sincerely

Clinton Geysers
EnviroAfrica cc

P.O.Box 5367
HELDERBERG 7135
Fax: (086) 512 0154
Tel: (021)851 1616

e-mail: admin@enviroafrica.co.za

29 St James Street
Somerset West
VAT 4870170513
CK 97 46008/23

PROPOSED LOW COST HOUSING, NOENIEPUT, MIER MUNICIPALITY, NORTHERN CAPE



SITE CO-ORDINATES

**27° 30'40.02" S
20° 08'33.62" E**



PROPOSED SITE

N



DEA REF:

NC/BA/SIY/MIE/NOE/2012

ENVIRO AFRICA REF:

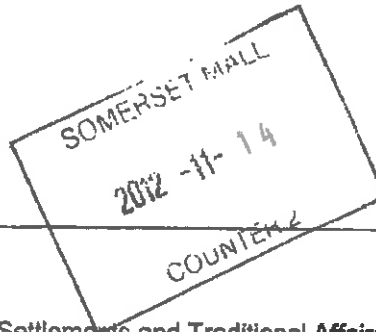
0366

NOVEMBER 2012

EnviroAfrica cc

EnviroAfrica

Environmental Planning and Impact Assessment Consultants
Omgewingsbeplanning en Impakbeoordeling Konsultante



05 November 2012

Department of Cooperative Governance, Human Settlements and Traditional Affairs (NC)
Private bag X 5005
Kimberly
8300

Att: Greta Apelgren-Narkdien

NEMAA BASIC ASSESSMENT PUBLIC PARTICIPATION PROCESS

PROPOSED LOW COST HOUSING, NOENIEPUT, MIER MUNICIPALITY, NORTHERN CAPE DEPARTMENT OF ENVIRONMENTAL AFFAIRS (DEA) REF NO: NC/BA/SIY/MIE/NOE/2012

Notice is hereby given of the public participation process in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended ("NEMA"), Environmental Impact Assessment Regulations 2010.

The proposed low cost housing development and associated infrastructure includes the below activities listed in terms of the NEMA EIA Regulations 2010. EnviroAfrica cc has been appointed by Mier Municipality, to undertake the **Basic Assessment** for the proposed project.

Application for environmental authorization to undertake the following activities:

Government Notice R544 (Listing Notice 1): Activity No. 11, 18, 22 and 23

Government Notice R546 (Listing Notice 3): Activity No. 13

Project Description & Location: The site is located on Portion 18 of Farm Witkop 350, Noenieput, Northern Cape. It is proposed that the property be rezoned and subdivided for the development of serviced low cost housing, including associated infrastructure.

Application for exemption: The applicant is intending to apply for exemption from Regulation 10(2)(d) of Government Notice No. R543, which states that the applicant must within 12 days of the date of the decision, place a notice in the same newspaper(s) used for the placing of advertisements as part of the public participation process, informing Interested and Affected Parties of the decision, where the decision can be accessed and the right to appeal. Registered I&AP's will be notified of the decision by post and/or preferred method of communication.

Public Participation: Interested and Affected Parties (I&APs) are hereby notified of the application and invited to register (in writing) and/or provide initial comments and identify any issues, concerns or opportunities relating to this project to the contact details provided below, on or before 14 December 2012. In order to register or submit comment, I&APs should refer to the project name and DEA reference number above, and provide their name, address & contact details (*indicating your preferred method of notification*) and an indication of any direct business, financial, personal, or other interest which they have in the application. Please note that future correspondence will only be sent to registered Interested and Affected Parties. You are also requested to pass this information to any person you feel should be notified.

Consultant: EnviroAfrica (P.O. Box 5367, Helderberg, 7135, Fax: 086 512 0154 / Tel: 021 8511616 / E-mail: admin@enviroafrica.co.za)

Yours sincerely

Clinton Geyser
EnviroAfrica cc

P.O.Box 5367
HELDERBERG 7135
Fax: (086) 512 0154
Tel: (021)851 1616

e-mail: admin@enviroafrica.co.za

29 St James Street
Somerset West
VAT 4870170513
CK 97 46008/23

PROPOSED LOW COST HOUSING, NOENIEPUT, NORTHERN CAPE



SITE CO-ORDINATES

27° 30' 40.02" S
20° 08' 33.62" E



PROPOSED SITE



DEA REF:

NC/BASIY/MI/NOE/2012

ENVIRO AFRICA REF:

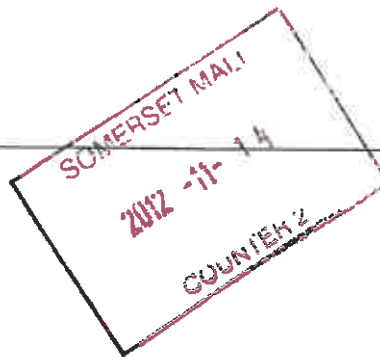
0366

NOVEMBER 2012

EnviroAfrica cc

EnviroAfrica

Environmental Planning and Impact Assessment Consultants
Omgewingsbeplanning en Impakbeoordeling Konsultante



05 November 2012

Mier Local Municipality
PO Box 178
Mier
8811

Att: Hendrik Matthys

NEMAA BASIC ASSESSMENT PUBLIC PARTICIPATION PROCESS

PROPOSED LOW COST HOUSING, NOENIEPUT, MIER MUNICIPALITY, NORTHERN CAPE DEPARTMENT OF ENVIRONMENTAL AFFAIRS (DEA) REF NO: NC/BA/SIY/MIE/NOE/2012

Notice is hereby given of the public participation process in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended ("NEMA"), Environmental Impact Assessment Regulations 2010.

The proposed low cost housing development and associated infrastructure includes the below activities listed in terms of the NEMA EIA Regulations 2010. EnviroAfrica cc has been appointed by Mier Municipality, to undertake the **Basic Assessment** for the proposed project.

Application for environmental authorization to undertake the following activities:

Government Notice R544 (Listing Notice 1): Activity No. 11, 18, 22 and 23

Government Notice R546 (Listing Notice 3): Activity No. 13

Project Description & Location: The site is located on Portion 18 of Farm Witkop 350, Noenieput, Northern Cape. It is proposed that the property be rezoned and subdivided for the development of serviced low cost housing, including associated infrastructure.

Application for exemption: The applicant is intending to apply for exemption from Regulation 10(2)(d) of Government Notice No. R543, which states that the applicant must within 12 days of the date of the decision, place a notice in the same newspaper(s) used for the placing of advertisements as part of the public participation process, informing Interested and Affected Parties of the decision, where the decision can be accessed and the right to appeal. Registered I&AP's will be notified of the decision by post and/or preferred method of communication.

Public Participation: Interested and Affected Parties (I&APs) are hereby notified of the application and invited to register (in writing) and/or provide initial comments and identify any issues, concerns or opportunities relating to this project to the contact details provided below, on or before 14 December 2012. In order to register or submit comment, I&APs should refer to the project name and DEA reference number above, and provide their name, address & contact details (*indicating your preferred method of notification*) and an indication of any direct business, financial, personal, or other interest which they have in the application. Please note that future correspondence will only be sent to registered Interested and Affected Parties. You are also requested to pass this information to any person you feel should be notified.

Consultant: EnviroAfrica (P.O. Box 5367, Helderberg, 7135, Fax: 086 512 0154 / Tel: 021 8511616 / E-mail: admin@enviroafrica.co.za)

Yours sincerely

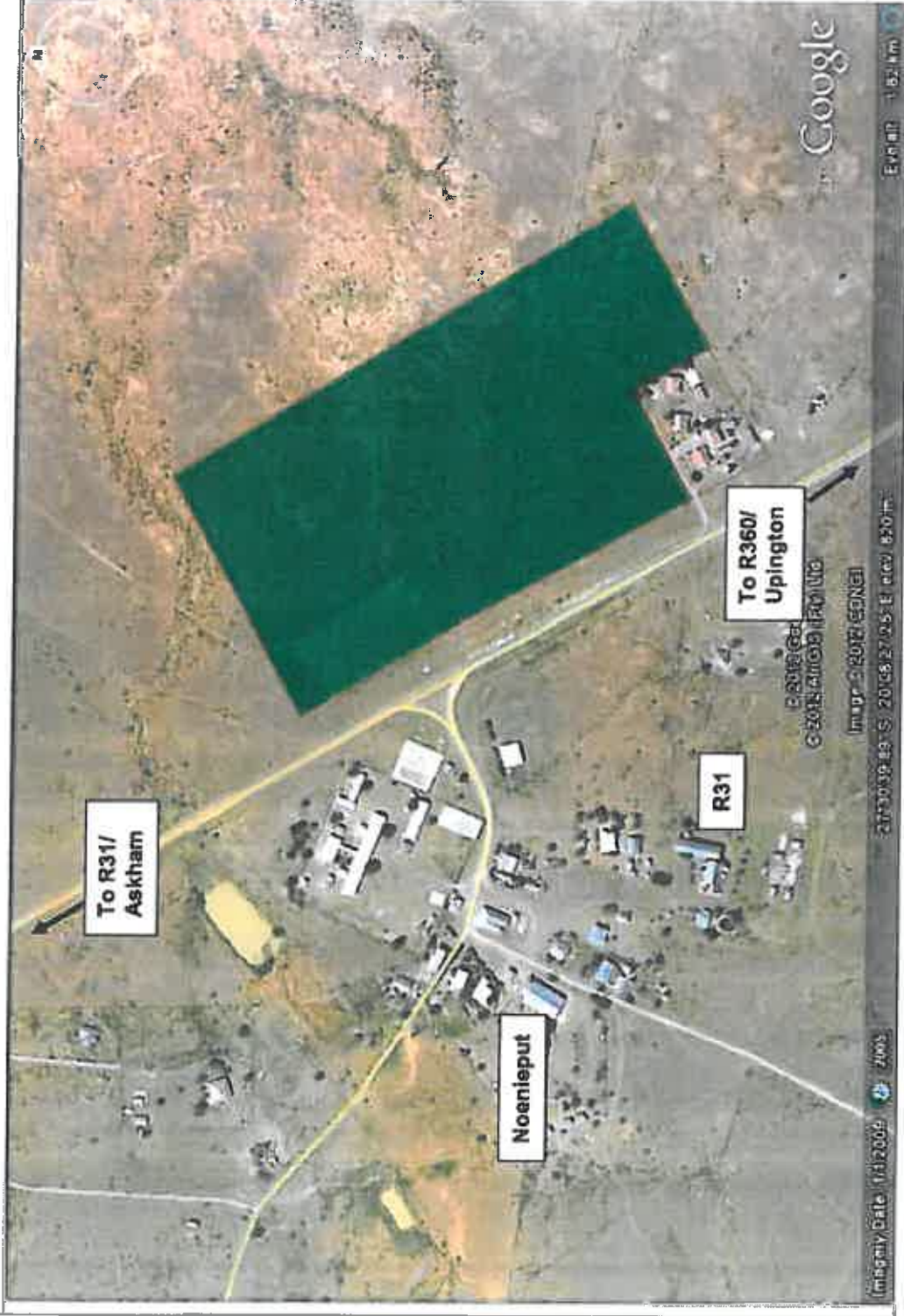
Clinton Geyser
EnviroAfrica cc

P.O.Box 5367
HELDERBERG 7135
Fax: (086) 512 0154
Tel: (021)851 1616

e-mail: admin@enviroafrica.co.za

29 St James Street
Somerset West
VAT 4870170513
CK 97 46008/23

PROPOSED LOW COST HOUSING, NOENIEPUT, MIER MUNICIPALITY, NORTHERN CAPE



SITE CO-ORDINATES

27° 30' 40.02" S
20° 08' 33.62" E



PROPOSED SITE

N



DEA REF:

NC/BA/SIY/MIE/NOE/2012

ENVIRO AFRICA REF:

0366

NOVEMBER 2012

EnviroAfrica cc

EnviroAfrica

Environmental Planning and Impact Assessment Consultants
Omgewingsbeplanning en Impakbeoordeling Konsultante



05 November 2012

Department of Water Affairs Northern Cape
Private Bag X 6101
Kimberly
8300

Att: LJ Saunders

NEMAA BASIC ASSESSMENT PUBLIC PARTICIPATION PROCESS

PROPOSED LOW COST HOUSING, NOENIEPUT, MIER MUNICIPALITY, NORTHERN CAPE DEPARTMENT OF ENVIRONMENTAL AFFAIRS (DEA) REF NO: NC/BA/SIY/MIE/NOE/2012

Notice is hereby given of the public participation process in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended ("NEMA"), Environmental Impact Assessment Regulations 2010.

The proposed low cost housing development and associated infrastructure includes the below activities listed in terms of the NEMA EIA Regulations 2010. EnviroAfrica cc has been appointed by Mier Municipality, to undertake the **Basic Assessment** for the proposed project.

Application for environmental authorization to undertake the following activities:

Government Notice R544 (Listing Notice 1): Activity No. 11, 18, 22 and 23

Government Notice R546 (Listing Notice 3): Activity No. 13

Project Description & Location: The site is located on Portion 18 of Farm Witkop 350, Noenieput, Northern Cape. It is proposed that the property be rezoned and subdivided for the development of serviced low cost housing, including associated infrastructure.

Application for exemption: The applicant is intending to apply for exemption from Regulation 10(2)(d) of Government Notice No. R543, which states that the applicant must within 12 days of the date of the decision, place a notice in the same newspaper(s) used for the placing of advertisements as part of the public participation process, informing Interested and Affected Parties of the decision, where the decision can be accessed and the right to appeal. Registered I&AP's will be notified of the decision by post and/or preferred method of communication.

Public Participation: Interested and Affected Parties (I&APs) are hereby notified of the application and invited to register (in writing) and/or provide initial comments and identify any issues, concerns or opportunities relating to this project to the contact details provided below, on or before 14 December 2012. In order to register or submit comment, I&APs should refer to the project name and DEA reference number above, and provide their name, address & contact details (*indicating your preferred method of notification*) and an indication of any direct business, financial, personal, or other interest which they have in the application. Please note that future correspondence will only be sent to registered Interested and Affected Parties. You are also requested to pass this information to any person you feel should be notified.

Consultant: EnviroAfrica (P.O. Box 5367, Helderberg, 7135, Fax: 086 512 0154 / Tel: 021 8511616 / E-mail: admin@enviroafrica.co.za)

Yours sincerely

Clinton Geysler
EnviroAfrica cc

P.O.Box 5367
HELDERBERG 7135
Fax: (086) 512 0154
Tel: (021)851 1616

e-mail: admin@enviroafrica.co.za

29 St James Street
Somerset West
VAT 4870170513
CK 97 46006/23

PROPOSED LOW COST HOUSING, NOENIEPUT, MIER MUNICIPALITY, NORTHERN CAPE



SITE CO-ORDINATES

27° 30'40.02" S
20° 08'33.62" E



PROPOSED SITE

N



DEA REF:

NC/BA/SIY/MIE/NOE/2012

ENVIRO AFRICA REF:

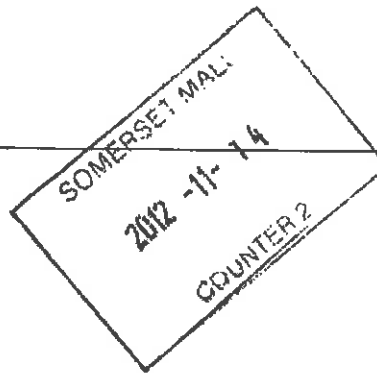
0366

NOVEMBER 2012

EnviroAfrica cc

EnviroAfrica

Environmental Planning and Impact Assessment Consultants
Omgewingsbeplanning en Impakbeoordeling Konsultante



05 November 2012

Department of Agriculture and Land Reform
Private Bag X 5018
Kimberly
8300

Att: Wonders Mothibi

NEMAA BASIC ASSESSMENT PUBLIC PARTICIPATION PROCESS

PROPOSED LOW COST HOUSING, NOENIEPUT, MIER MUNICIPALITY, NORTHERN CAPE DEPARTMENT OF ENVIRONMENTAL AFFAIRS (DEA) REF NO: NC/BA/SIY/MIE/NOE/2012

Notice is hereby given of the public participation process in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended ("NEMA"), Environmental Impact Assessment Regulations 2010.

The proposed low cost housing development and associated infrastructure includes the below activities listed in terms of the NEMA EIA Regulations 2010. EnviroAfrica cc has been appointed by Mier Municipality, to undertake the **Basic Assessment** for the proposed project.

Application for environmental authorization to undertake the following activities:

Government Notice R544 (Listing Notice 1): Activity No. 11, 18, 22 and 23

Government Notice R546 (Listing Notice 3): Activity No. 13

Project Description & Location: The site is located on Portion 18 of Farm Witkop 350, Noenieput, Northern Cape. It is proposed that the property be rezoned and subdivided for the development of serviced low cost housing, including associated infrastructure.

Application for exemption: The applicant is intending to apply for exemption from Regulation 10(2)(d) of Government Notice No. R543, which states that the applicant must within 12 days of the date of the decision, place a notice in the same newspaper(s) used for the placing of advertisements as part of the public participation process, informing Interested and Affected Parties of the decision, where the decision can be accessed and the right to appeal. Registered I&AP's will be notified of the decision by post and/or preferred method of communication.

Public Participation: Interested and Affected Parties (I&APs) are hereby notified of the application and invited to register (in writing) and/or provide initial comments and identify any issues, concerns or opportunities relating to this project to the contact details provided below, on or before 14 December 2012. In order to register or submit comment, I&APs should refer to the project name and DEA reference number above, and provide their name, address & contact details (*indicating your preferred method of notification*) and an indication of any direct business, financial, personal, or other interest which they have in the application. Please note that future correspondence will only be sent to registered Interested and Affected Parties. You are also requested to pass this information to any person you feel should be notified.

Consultant: EnviroAfrica (P.O. Box 5367, Helderberg, 7135, Fax: 086 512 0154 / Tel: 021 8511616 / E-mail: admin@enviroafrica.co.za)

Yours sincerely

Clinton Geyser
EnviroAfrica cc

P.O.Box 5367
HELDERBERG 7135
Fax: (086) 512 0154
Tel: (021)851 1616

e-mail: admin@enviroafrica.co.za

29 St James Street
Somerset West
VAT 4870170513
CK 97 46008/23

PROPOSED LOW COST HOUSING, NOENIEPUT, MIER MUNICIPALITY, NORTHERN CAPE



SITE CO-ORDINATES

27° 30' 40.02" S
20° 08' 33.62" E



PROPOSED SITE

N



DEA REF:

NC/BA/SIY/MI/NOE/2012

ENVIRO AFRICA REF:

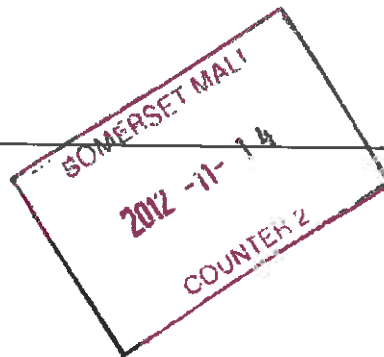
0366

NOVEMBER 2012

EnviroAfrica cc

EnviroAfrica

Environmental Planning and Impact Assessment Consultants
Omgewingsbeplanning en Impakbeoordeling Konsultante



05 November 2012

Department of Roads and Public Works
PO Box 3132
Kimberly
8301

Att: K Nogwilli

NEMAA BASIC ASSESSMENT PUBLIC PARTICIPATION PROCESS

PROPOSED LOW COST HOUSING, NOENIEPUT, MIER MUNICIPALITY, NORTHERN CAPE DEPARTMENT OF ENVIRONMENTAL AFFAIRS (DEA) REF NO: NC/BA/SIY/MIE/NOE/2012

Notice is hereby given of the public participation process in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended ("NEMA"), Environmental Impact Assessment Regulations 2010.

The proposed low cost housing development and associated infrastructure includes the below activities listed in terms of the NEMA EIA Regulations 2010. EnviroAfrica cc has been appointed by Mier Municipality, to undertake the **Basic Assessment** for the proposed project.

Application for environmental authorization to undertake the following activities:

Government Notice R544 (Listing Notice 1): Activity No. 11, 18, 22 and 23

Government Notice R546 (Listing Notice 3): Activity No. 13

Project Description & Location: The site is located on Portion 18 of Farm Witkop 350, Noenieput, Northern Cape. It is proposed that the property be rezoned and subdivided for the development of serviced low cost housing, including associated infrastructure.

Application for exemption: The applicant is intending to apply for exemption from Regulation 10(2)(d) of Government Notice No. R543, which states that the applicant must within 12 days of the date of the decision, place a notice in the same newspaper(s) used for the placing of advertisements as part of the public participation process, informing Interested and Affected Parties of the decision, where the decision can be accessed and the right to appeal. Registered I&AP's will be notified of the decision by post and/or preferred method of communication.

Public Participation: Interested and Affected Parties (I&APs) are hereby notified of the application and invited to register (in writing) and/or provide initial comments and identify any issues, concerns or opportunities relating to this project to the contact details provided below, on or before 14 December 2012. In order to register or submit comment, I&APs should refer to the project name and DEA reference number above, and provide their name, address & contact details (*indicating your preferred method of notification*) and an indication of any direct business, financial, personal, or other interest which they have in the application. Please note that future correspondence will only be sent to registered Interested and Affected Parties. You are also requested to pass this information to any person you feel should be notified.

Consultant: EnviroAfrica (P.O. Box 5367, Helderberg, 7135, Fax: 086 512 0154 / Tel: 021 8511616 /
E-mail: admin@enviroafrica.co.za)

Yours sincerely

Handwritten signature of Clinton Geyser.

Clinton Geyser
EnviroAfrica cc

P.O.Box 5367
HELDERBERG 7135
Fax: (086) 512 0154
Tel: (021)851 1616

e-mail: admin@enviroafrica.co.za

29 St James Street
Somerset West
VAT 4870170513
CK 97 48008/23

PROPOSED LOW COST HOUSING, NOENIEPUT, MIER MUNICIPALITY, NORTHERN CAPE



SITE CO-ORDINATES

27° 30' 40.02" S
20° 08' 33.62" E



PROPOSED SITE



DEA REF:

NC/BA/SIY/MIE/NOE/2012

ENVIRO AFRICA REF:

0366

NOVEMBER 2012

EnviroAfrica cc

Appendix E (6)

Proof of Newspaper Add

Duineveld se top akademiese leiers



**Tinus Steyn; WP Smith
Baker – Goeie Gedrag;
Ereklere: Akademie.**

**Stefan Mans; Beste prestasie --
Besigheidstudies; Half-erklere;
Akademie.**



MIER MUNICIPALITY

ENVIROAFRICA CC

NEMA PUBLIC PARTICIPATION PROCESS

PROPOSED LOW COST HOUSING DEVELOPMENTS MIER MUNICIPALITY, NORTHERN CAPE

Notice is hereby given of the public participation process in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended ("NEMA"), Environmental Impact Assessment Regulations 2010.

Mier Municipality is proposing low cost housing developments and associated infrastructure in the following towns: Askham, Groot Mier, Loubos, Noentepuit, Rietfontein and Welkom. EnviroAfrica cc has been appointed by Mier Municipality, to undertake the **Basic Assessment** for the proposed projects.

Project Description and Location: It is proposed that the following properties be rezoned and subdivided for the development of serviced low cost housing, including associated infrastructure.
Askham: Portion 1 of Farm 139, Kameelduin, Askham, Northern Cape. Approximately 102 residential properties are proposed.
Groot Mier: Erf 112, Groot Mier, Northern Cape. Approximately 192 residential properties are proposed.
Loubos: Farm Mier 585, Loubos, Northern Cape. Approximately 146 residential properties are proposed.
Noentepuit: Portion 18 of Farm Writop 350, Noentepuit, Northern Cape.
Rietfontein: Farm Mier 585, Rietfontein, Northern Cape. Approximately 110 residential properties are proposed.
Welkom: Portion 31 of Farm Mier 585, Welkom, Northern Cape. Approximately 137 residential properties are proposed.

Application for environmental authorization to undertake the following activities:

Askham: Government Notice (GN) R544 Activity No. 22 and 23 (DEA Reference number: NC/BAS/ENV/KHA/ASK12012)
Groot Mier: GN R544 Activity No. 11, 18, 22 and 23 GN R546 Activity No. 13. (DEA Ref number: NC/BAS/ENV/MIER/MIER2012)
Loubos: GN R544 Activity No. 11, 18, 22 and 23 GN R546 Activity No. 13. (DEA Ref number: NC/BAS/ENV/LOU/LOU2012)
Noentepuit: GN R544 Activity No. 11, 18, 22 and 23 GN R546 Activity No. 13. (DEA Ref number: NC/BAS/ENV/NOEN/NOEN2012)
Rietfontein: GN R544 Activity No. 11, 18, 22 and 23 GN R546 Activity No. 13. (DEA Ref number: NC/BAS/ENV/RIET/RIET2012)
Welkom: GN R544 Activity No. 11, 18, 22 and 23 GN R546 Activity No. 4, 13 & 16. (DEA Ref number: NC/BAS/ENV/WE/WE2012)

Application for exemption: The applicant is intending to apply for exemption from Regulation 10(2)(d) of Government Notice No R543, which states that the applicant must within 12 days of the date of the decision, place a notice in the same newspaper(s) used for the placing of advertisements as part of the public participation process, informing interested and Affected Parties of the decision, where the decision can be accessed and the right to appeal. Registered I&AP's will be notified of the decision by post and/or preferred method of communication.

Public Participation: Interested and Affected Parties (I&APs) are hereby notified of the application and invited to register (in writing) and/or provide initial comments and identify any issues, concerns or opportunities relating to this project to the contact details provided below, on or before 14 December 2012. In order to register or submit comment, I&APs should refer to the project name and DEA reference number above, and provide their name, address & contact details (*indicating your preferred method of notification*) and an indication of any direct business financial personal, or other interest which they have in the application. Please note that future

Appendix E (7)

Maildrop & Poster Placement Proofsheets

PPP: MAILDROP LIST & PLACEMENT OF POSTERS

PROJECT: <i>Mier LCH</i>	AREA: <i>Noenepout</i>
ADDRESS	
CONTACT PERSON	
DATE:	DONE BY:

POSTERS

*1 x large
2 x small*

	ADDRESS	DESCRIPTIVE NOTES
<i>A3</i>	1 <i>Mier Municipality at Koffortuin.</i>	
<i>A3</i>	2 <i>Koppoend</i>	
<i>A2</i>	3 <i>Hek by site</i>	

<i>A4</i>	MAILDROP	
-----------	-----------------	--

	ADDRESS:	DESCRIPTIVE NOTES
	Street no. & name	(Owner details, property description ect.)
1	<i>Maildrop at Municipality</i>	
2		
3	<i>Postagentskap - Angalien Eymann</i>	
4		<i>OSL - 5510002</i>
5	<i>Plaas in postbusse van die inwoners:</i>	
	<i>- 2 postman</i>	
6	<i>- 3 deurges</i>	
	<i>- 4 du Plessis</i>	
7	<i>- 5 KNY</i>	
	<i>- 7 pastoor Cronje</i>	
8	<i>- 8 Rina Brink</i>	
	<i>- 10 Egbert Brink</i>	
9	<i>- 22 pastoor Burger</i>	
10	<i>- 31 Gemeenskap</i>	
11	<i>Post by Skool (Swartkopdam)</i>	
12	<i>Res in ander Postbusse van plaas eieners</i>	
13		
14		

Appendix E (8)

Photographic Proof of Posters Placed

Photographic Evidence of Poster Placements:



Photo 1: Harware Store/Co-op, Noenieput



Photo 2: Harware Store/Co-op, Noenieput – Notice board



Photo 3: Site Entrance



Photo 4: Gate at Site Entrance

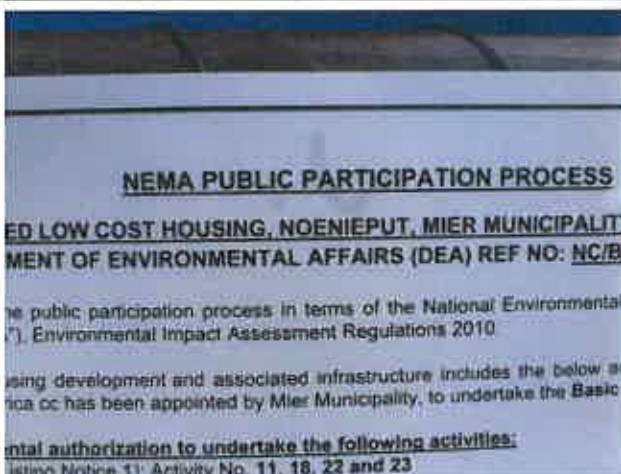


Photo 5: Closeup of Poster on Gate/Entrance to site



Photo 6: Mier Municipality Notice Board



Photo 7: Mier Municipality Notice Board, Close-up



Photo 8: Noenieput Post Office



Photo 9: Noenieput Post Office, Interested Parties Reading Poster Placed



Photo 10: Noenieput Post Office, Close-up

Appendix E (9)

Initial Comments and Response Report

EnviroAfrica

Environmental Planning and Impact Assessment Consultants
Omgewingsbeplanning en Impakbeoordeling Konsultante

Comments & Response Report: **Noenieput Low Cost Housing Development**

No comments were received from interested and affected parties or state departments during the initial round of public participation.

PROPOSED LOW COST HOUSING, NOENIEPUT, MIER MUNICIPALITY, NORTHERN CAPE



SITE CO-ORDINATES

27° 30' 40.02" S
20° 08' 33.62" E



PROPOSED SITE



DEA REF:
NC/BA/SIY/MIE/NOE/2012

ENVIRO AFRICA REF:
0366

NOVEMBER 2012

EnviroAfrica cc

APPENDIX F

ENVIRONMENTAL MANAGEMENT PROGRAMME

DRAFT

CONSTRUCTION PHASE ENVIRONMENTAL MANAGEMENT PLAN

for the

**CONSTRUCTION AND MANAGEMENT OF
ACTIVITIES RELATING TO THE PROTECTION
OF THE NATURAL ENVIRONMENT DURING
THE CONSTRUCTION OF THE**

MIER MUNICIPALITY

LOW COST HOUSING PROJECT & ASSOCIATED INFRASTRUCTURE

This EMP is a condition as set out in the Environmental Authorization (EA)

And is to be presented to contractors at the On Site Start-Up Meeting

compiled by
EnviroAfrica cc

25 January 2013

TABLE OF CONTENTS

1. INTRODUCTION	3
2. COMMENCEMENT OF WORKS.....	3
3. ENVIRONMENTAL CONDITIONS OF APPROVAL:	4
4. ISSUES OF CONCERN:.....	4
5. SITE SPECIFIC ARRANGEMENTS & CONSTRUCTION PROCEDURES:.....	5
6. STARTUP MEETING:.....	5
7. METHOD STATEMENT:.....	6
8. PENALTIES	7
9. RESPONSIBILITY OF OWNER/DEVELOPER/APPLICANT	8
10. THE SITE ENGINEER	8
11. THE CONTRACTOR.....	8
12. SITE PERSONNEL: ENVIRONMENTAL AWARENESS TRAINING	9
13. ECO/ESO.....	10
14. CHANGES TO THE MANAGEMENT PLAN	11
15. RECORD KEEPING	12
16. ENVIRONMENTAL COMPLETION STATEMENT.....	12
17. ENVIRONMENTAL AUDIT REPORT	12
18. MANAGEMENT SPECIFICATIONS for the CONSTRUCTION of THE MIER MUNICIPALITY LOW COST HOUSING PROJECT BOREHOLES & ASSOCIATED INFRASTRUCTURE	13
18.1. Fauna and Flora	13
18.2. Protection And Rescue Of Fauna And Flora	13
18.3. Clearing of Vegetation, Stripping & Conservation of Topsoil	13
18.4. Protection of Archaeological & paleontological remains	14
18.5. Appropriate use of Machinery	14
18.6. Demarcating and fencing	15
18.7. "NO-GO" Areas	16
18.8. Storm water, Erosion & Sedimentation Control.....	16
18.9. Fuel, Tar Compounds and Oil	16
18.10. Hazardous Substances	17
18.11. Concrete works	17
18.12. Blasting / drilling.....	18
18.13. Fires and smoking.....	18
18.14. Emergency Procedures	19
18.15. Dust	19
18.16. Solid Waste Management.....	19
18.17. Toilets & Ablution Facilities	20
18.18. Stockpiling	20
18.19. Preparation of Building Material	20
18.20. Discharge of construction water	21
18.21. Treating of Pipelines	21
18.22. Contractors Temporary Camping site & Eating Areas.....	21
18.23. Traffic, Access Routes & Haul Roads	22
18.24. Site Clean Up and Rehabilitation	22
18.25. Land Management	22
18.26. Socio-Cultural Issues	22
18.27. Additional Associated Installations	23
19. TERMS AND ABBREVIATIONS:	24
20. APPENDICES:.....	28
APPENDIX 1: START-UP REPORT	29
APPENDIX 2: PENALTIES FOR NON-COMPLIANCE	30
APPENDIX 3: DECLARATION OF UNDERSTANDING.....	33
APPENDIX 4: INFORMATION ON METHOD STATEMENTS	35
APPENDIX 5: EXAMPLE OF METHOD STATEMENT	36
APPENDIX 6: CONTACTOR/S REPRESENTATIVE: ENVIRONMENTAL WEEKLY CHECKLIST.....	39
APPENDIX 7: BASIC RULES OF CONDUCT	41
APPENDIX 8: ECO/ESO SITE REPORT/CHECKLIST	45
APPENDIX 9: ENVIRONMENTAL AUTHORIZATION.	52
APPENDIX 10: DRAWING/S.....	53
APPENDIX 11: RECOMMENDATIONS AS PER BASIC ASSESSMENT REPORT.....	54
APPENDIX 12: ANY OTHER RELEVANT DOCUMENTS	55

ENVIRONMENTAL MANAGEMENT PLAN OF CONSTRUCTION AND MANAGEMENT OF ACTIVITIES RELATING TO THE PROTECTION OF THE NATURAL ENVIRONMENT DURING THE CONSTRUCTION PHASE OF THE MIER MUNICIPALITY LOW COST HOUSING PROJECT & ASSOCIATED INFRASTRUCTURE

1. INTRODUCTION

This CEMP forms part of the conditions as set out in the **MIER MUNICIPALITY LOW COST HOUSING PROJECT & ASSOCIATED INFRASTRUCTURE** Environmental Authorization (EA) and Recommendations detailed in the original Basic Assessment Report.

The **MIER MUNICIPALITY LOW COST HOUSING PROJECT & ASSOCIATED INFRASTRUCTURE** CEMP binds all contractors, sub-contractors and other persons working on the site to adhere to the terms and conditions of the CEMP throughout the construction of the **MIER MUNICIPALITY LOW COST HOUSING PROJECT & ASSOCIATED INFRASTRUCTURE**.

Any other Site Specific additional activities decided and agreed upon at the On Site Start-Up Meeting must be included in to form part of the CEMP.

2. COMMENCEMENT OF WORKS

The site project contractors must timeously receive a copy of the site CEMP and any other further additional information that pertains to site conditions/amendments or deviations from original site plan.

A copy of the CEMP must be on site at all times and available for presentation to any authority requesting to see such document.

No work on site may take place until:

- CEMP has been approved by the relevant authority
- Environmental Control officer (ECO) be appointed to enforce & manage the conditions as per EA as well as to manage and implement the EMP
- ECO to be appointed before construction starts
- One week's written notice to DENC before construction starts (Condition G 2 as per EA).
- On-Site Start-Up Meeting has been held.
- Site and No-Go areas has been demarcated.
- Contractors are in possession of the CEMP and other relevant documentation.

- And signed the Declaration Of Understanding
- All mandatory site equipment is in place
-

NB: Work refers to: Camp Establishment, Earthmoving activities and any pre-liminary construction activities.

3. ENVIRONMENTAL CONDITIONS OF APPROVAL:

- EA Conditions Of Approval. (See appendix)
- Basic Assessment Report Recommendations. (See appendix)

4. ISSUES OF CONCERN:

Issues of concern that were identified during the EIA Basic Assessment Report process, and addressed in the EA include but not restricted to the following;

The pre-determined environmental issues and respective activities must be addressed during the On Site Start-Up Meeting and reflect in the On-Site Start-Up Report.

The Site Specific recommendations as per the original Basic Assessment Report and conditions as per the EA are to be included and reflect in the On-Site Start-Up Report.

They are but not restricted to;

- Power supply
- Access route
- Demarcation
- Waste management
- Mandatory site equipment
- Ablution & Toilet Facilities
- Refuse Management
- Fire Fighting Equipment
- Concrete works & batching proposals.
- Ground Erosion Control.
- Fire Reaction Plan

5. SITE SPECIFIC ARRANGEMENTS & CONSTRUCTION PROCEDURES:

ON-SITE START-UP MEETING REPORT to be attached as Appendix 1 to the **MIER MUNICIPALITY LOW COST HOUSING PROJECT & ASSOCIATED INFRASTRUCTURE CEMP**. The Start-Up Meeting Report to include all site-specific issues and arrangements as discussed and agreed on at site start-up meeting.

The On-Site Start-Up Meeting additional information pertains to specific site construction agreements that was discussed on site by all the relevant parties and agreed on must be included in the On Site Start-Up Meeting Report. (The arrangements and agreements must fall within the conditions as set out in the **MIER MUNICIPALITY LOW COST HOUSING PROJECT & associated infrastructure EA**)

6. STARTUP MEETING:

The mandatory on-site start-up meeting that is conducted prior to commencement of any site/camp establishment, earthworks and/or construction activities and will relate to additional discussed information that must be complied with during the entire construction phase.

At the on-site start-up meeting the following issues must be addressed:

- The Construction EMP & other relevant site documents.
- Project to be discussed and all uncertainties are cleared.
- Method statement/s to be discussed.
- Power line installation access routes.
- Road and construction area to be demarcated
- Materials stockpile and lay down areas to be demarcated
- Method of stockpiling to be discussed
- Fire fighting procedures
- Mandatory fire fighting equipment & fire preventative measures.
- Solid waste removal intentions.
- Placement, type and service of toilets to be agreed on.
- Placement and type of rubbish bins and removal of rubbish to be agreed on.
- Labour overnight camp to be demarcated and services agreed on.

The following people must attend the pre-start-up meeting:

- The Applicant.
- Main contractor's representative.
- Site supervisor/foreman
- Environmental consultant (EC)
- Environmental site officer (ESO)

An on-site start-up meeting report will be drawn up by the EC / ECO / ESO after the start-up meeting the report must be circulated to all attendees of the Startup meeting for response and acceptance of the contents. No response is deemed to be an acceptance of the contents of the report. **(Appendix 1)**

The main contractor must provide (i) a list of all sub-contractors and their scope of work for the contract and (ii) a time schedule of works.

The On-site Start-up Meeting report will also form part of this Environmental Management Plan. If any discrepancies between the start-up checklist and the EMP arise then the EMP will take precedence until clarification on the discrepancy is clarified. If any discrepancies between the EMP and EA then the EA will take precedence until clarification on the discrepancy is clarified.

NB: IT IS THE RESPONSIBILITY OF THE MAIN CONTRACTORS TO ENSURE THAT ALL HIS SUB- CONTRACTORS, THAT WORK ON THE SITE DURING AND AFTER THE CIVILS CONTRACTOR, ARE INFORMED OF THE ENVIRONMENTAL CONDITIONS PERTAINING TO THE SITE.

NB!! NO WORK WILL START UNTIL THE ABOVE IS IN PLACE AND AGREED ON.

7. METHOD STATEMENT:

Method statements from the contractor will be required for specific sensitive actions on request of the authorities, the applicant or ECO/ESO. A method statement forms the base line information on which sensitive area work takes place and is a "live document" in that modifications are negotiated between the Contractor and ESO/APPLICANT, as circumstances unfold. All method statements will form part of the EMP documentation and are subject to all terms and conditions contained within the EMP main document.

These documents must be available to the authorities for inspection or on request.

A method statement describes the scope of the intended work in a step-by-step description in order for the ESO and The applicant to understand the contractor's intentions. This will enable them to assist in devising any mitigation measures, which would minimize environmental impact during these tasks.

The Contractor must submit the method statement before any particular construction activity is due to start. Work may not commence until the ECO/ESO and APPLICANT have approved the method statement.

Method statements need to be compiled by the contractor for approval by applicant and the ECO/ESO. The contractor must submit written method statements to the applicant for the purposes of the environmental specification, a "Method Statement" is defined as a written submission by the contractor to the applicant setting out the plant, materials, labour and method the contractor proposes using to carry out an activity, in such detail that the applicant and the ECO/ESO is able to assess whether the contractor's proposal is in accordance with the specifications and/ or will pEAuce results in accordance with specifications.

The contents of the Method statement cannot be changed or altered.

The method statement must cover applicable details with regard to:

- Construction procedures,
- Materials and equipment to be used,
- Getting the equipment to and from site,
- How the equipment/ material will be moved while on site,
- How and where material will be stored,
- The containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur,
- Timing and location of activities,
- Compliance/ non-compliance with the Specifications, and
- Any other information deemed necessary by the The Applicant and ECO/ESO.

The Contractor must abide by these approved method statements, and an activity covered by a method statement must not commence until the Applicant and the ECO has approved of such method.

Explanation of method statements and a pro forma method statement sheet that must be completed by the Contractor for each activity requiring a method is attached as **appendix 4 & appendix 5.**

8. PENALTIES

The Applicant (on recommendation by the ECO) reserves the right at all times for the duration of this agreement to impose restrictions and associate penalties on the contractor with respect to the specific nature, timing and extent of construction activities on environmentally sensitive sites.

In instances of non-compliance with the EMP by the contractor (or any of their employees) or sub-contractor/s (or any of their employees) that move on or off the site, the on site ECO must issue a written warning indicating the non-conformance to the contractor.

The Applicant in consultation with the Environmental Consultant/ECO must determine the amount of the penalty applicable in accordance with the Penalties for Non-Compliance Schedule of Tariffs (**Appendix 2**).

Such penalty amount must be reduced in writing and presented to the contractor within seven (7) days of the written warning.

The Applicant may recover penalties by deducting the fine from the offending contractor.

In serious cases, at the discretion of The Applicant and the Environmental Consultant/ECO, any multiple offences can be added together.

The ECO/ESO (after consultation with Environmental Consultant/The Applicant) may also *stop the works or part thereof until the situation is resolved; no extension of time is claimable by the contractor.*

These penalties do not preclude any prosecution under any law or regulation.

This set of procedures must be understood by all relevant onsite project managers / project managers and site workers.

See **appendix 2** for the The Applicant Penalties for Non- Compliance

9. RESPONSIBILITY OF OWNER/DEVELOPER/APPLICANT

The applicant must be responsible for ensuring compliance with the conditions contained in the EA by any person acting on his behalf, including but not limited to an agent, servant, employee or any person rendering a service to the applicant in respect of the activity, including but not limited to contractors and consultants.

The Owner is responsible for appointing the ECO, Site Engineer and Contractor for the duration of the construction contract and for ensuring that the Site Engineer and Contractor fulfil their obligations in terms of this CEMP.

The owner and or his representative must notify DEADP and any other relevant authority, in writing, within 24 hours thereof if any condition of this authorisation is not adhere to.

10. THE SITE ENGINEER

The Site Engineer is responsible for ensuring that the construction contract is implemented in terms of the construction EMP.

The Site Engineer and the ECO are expected to develop a close working relationship and to stay in contact with each other. The Site Engineer issues site instructions to the Contractor and all requests and communications between the ECO and Contractor are via the Site Engineer.

The only exception to this is where the ECO needs to issue a “stop works” order on the Contractor or the Site Engineer if serious environmental harm is about to happen or is happening as a result of construction activity. This “stop-order” must be confirmed by the ECO as soon as practically possible to all affected construction personnel.

When the ECO is not on site, the Site Engineer will be responsible for the Construction Phase EMP. Any problems that might lead to damage to the environment should be immediately brought to the attention of the site ECO, the Site Engineer (or his representative) refer to the “**ENVIRONMENTAL DAILY CHECKLIST**” (see **Appendix 6**).

11. THE CONTRACTOR

The Contractor must ensure that all of its sub-contractors, employees, suppliers, agents, etc., are fully aware of the environmental issues detailed in the site CEMP. The Contractor must liaise closely with the Site Engineer and the ECO and must ensure that the works on site are

Conducted in an environmentally sensitive manner and fully in accordance with the requirements of the CEMP, at all times.

Main bulk service providers such as Telkom and Eskom must be advised of the construction activities as well as the requirements of this EMP and the Contractor must be responsible for their activities conducted within their work areas.

ALL CONTRACTORS MUST SIGN THE “DECLARATION OF UNDERSTANDING” (Appendix 3) IN THIS CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN BEFORE CONSTRUCTION COMMENCES

All contractors working on site must have proper and competent contractor supervision during their time of contract.

If more than one contractor work on the site simultaneously then the responsibility lies on each contractor to adhere to the conditions of the EMP and related documents.

This is for the duration of the contract.

The supervisors must work closely with the ESO and discuss the daily programme with the ESO. Any problems that might lead to damage to the environment must be discussed with the ESO.

12. SITE PERSONNEL: ENVIRONMENTAL AWARENESS TRAINING

All operational personnel must undergo an on-site environmental awareness course together with any specific environmental training they may require to carry out their duties.

All contractor teams involved in work on the development are to be briefed on their obligations towards environmental controls and methodologies in terms of this EMP prior to work commencing. The briefing will usually take the form of an on site talk and demonstration by the ESO. The education / awareness programme must be aimed at all levels of management within the contractor team (See **appendix 7**)

13. ECO/ESO

ECO might also mean the ESO but the ESO does not mean the ECO. The ESO reports to the ECO

Frequency of site visits:

An ECO/ESO must be appointed for the duration of the construction phase (as required by EA). The ECO/ESO must:

- Conduct a **start-up meeting** before construction commences
- ECO to visit the site on a **bi-weekly** basis while construction is in progress
- ECO to monitor the development until development is completed
- Conduct a **closing down** visit ASAP after completion of the Development
- Conduct an **Environmental compliance audit within 6 months** after completion of the civil contract.

Requirements for the Posts:

Environmental Control Officer: [ECO]

A recognised environmental practitioner with a sound knowledge of the environment and a diploma or degree in environmental management with 5 years relevant experience.

Environmental Site Officer:[ESO]

An independent person with 5 or more years of environmental site management and able to ensure EMP compliance monitoring experience on construction projects.

ECO/ESO must understand and implement the Construction Phase Environmental Management Plan (CEMP).

Monitoring responsibilities of the ECO:

- Is to ensure that the mitigation/rehabilitation measures and recommendations referred to in the record of Decision are implemented and to ensure compliance with the provisions of the CEMP
- Must notify DENC and any other relevant authority, in writing, within 24 hours thereof if any condition of the EA is not adhere to.
- Is responsible for the environmental issues involved with the construction phase of the project;
- Co-ordinating any aspect of site activity that may have an effect on the environment;
- Must work in close conjunction with the Applicant/Site representative, contractors and sub-contractors;
- Must demarcate the necessary areas for storage of materials, ablutions, eating areas of contract workers, etc.;
- Must identify 'No go' areas and areas sensitive to erosion and have these areas demarcated. Environmental awareness of the workers is essential. This must be in the form of an on site talk and must be conducted at an appropriate technical level;

- The ECO/ESO will keep a SITE VISIT dairy. The purpose of these entries is to record. Record keeping in the form of a checklist and/or diary entries and photographic records for visual reference. (Appendix 8). These documents must be available to the authorities for inspection or on request. The diary must include meetings/discussions with the contractor and must reflect environmental queries, agreed actions and dates of eventual compliance. These must form part of the official environmental record

Authority of the ECO/ESO:

The ECO/ESO has the authority to stop works if in his opinion there is a serious threat to or impact on the environment caused directly from the construction operations. This authority is to be limited to emergency situations where consultation with the Applicant/site representative is not immediately available. In all such work stoppage situations the ECO/ESO is to inform THE APPLICANT of the reasons for the stoppage as soon as possible.

A relevant reason should be supplied to the Applicant/Site representative as soon as possible after stoppage of such works.

Upon failure by the contractor or his employee to show adequate consideration to the environmental aspects of this contract, the ECO/ESO may recommend to the applicant/site representative to have the contractor's representative or any employee(s) removed from the site or work suspended until the matter is remedied. No extension of time will be considered in the case of such suspensions and all costs will be borne by the contractor

Duration of ESO site inspections

The ESO is appointed prior to commencement of construction activities, site inspections are as per EA depending on the environmental sensitivity of the construction areas and site location.

The frequency of site inspections can change if the need arises.

14. CHANGES TO THE MANAGEMENT PLAN

Although care has been taken to address all known relevant environmental issues for the construction phase, it might become necessary to add or amend certain procedures or instructions to improve the efficiency of the EMP.

Changes have to be motivated in writing (Method statement). The same procedures as for a method statement has to be followed

Any additions or amendments will be submitted by the ECO to DENC (if so requested), after the ECO has consulted the Applicant.

No deviation from the contents of the EMP is allowed without following the prescribed procedures.

15. RECORD KEEPING

All records relating to the implementation of this management plan (e.g. Declaration of Understanding, ECO Checklist and/or diary, Method Statements, etc.) must be kept together and can be retrieved easily. These records must be available for scrutiny by any relevant authorities.

Photographs

Photographs are to be taken of the site prior to, during and immediately after construction, as a visual reference. These photographs must be stored with other records related to this EMP.

EMP Circulation List

Full copies of this CEMP will be made for the ECO, Site Engineer and Contractor. Appendices will also be made and circulated where relevant.

16. ENVIRONMENTAL COMPLETION STATEMENT

An Environmental Completion Statement is a report by the ECO to the relevant authorities stating completion of the project and compliance with the EMP and conditions.

17. ENVIRONMENTAL AUDIT REPORT

ENVIRONMENTAL AUDIT REPORT

An Environmental Audit Report by the EC must be submitted by the Applicant to the satisfaction of the Chief Directorate Environmental Affairs, within six months after construction has been completed and also after the sites have been rehabilitated.

18. MANAGEMENT SPECIFICATIONS for the CONSTRUCTION of THE MIER MUNICIPALITY LOW COST HOUSING PROJECT BOREHOLES & ASSOCIATED INFRASTRUCTURE

(This EMP is additional to conditions as set out in the EA)

18.1. Fauna and Flora

The Contractor must not deface, paint, damage or mark any natural features, if these should occur (e.g. trees, rock formations, buildings, etc.) situated in or around the Site for survey or other purposes unless agreed beforehand with the Engineer and the ECO. Any features affected by the Contractor in contravention of this clause must be restored/rehabilitated to the satisfaction of the Engineer and the ECO

Except to the extent necessary for the carrying out of the works, flora must not be removed, damaged or disturbed nor must any vegetation be planted. Trapping, poisoning and/or shooting of animals is strictly forbidden. No domestic pets or livestock are permitted on Site. Where the use of herbicides, pesticides and other poisonous substances are to be used, the Contractor must submit a Method Statement.

All incidents of harm to any animal or natural vegetation (apart from the agreed areas) must be reported to the ESO.

18.2. Protection And Rescue Of Fauna And Flora

The removal of fauna from the site must be done in accordance with the requirements of the Nature Conservation Ordinance regulating these activities.

All flora identified by the Environmental consultant, Botanist, Cape Nature and/or ECO to be rescued must be removed and placed in an area specifically allocated for these plants to ensure that the necessary care thereof will take place until being planted in designated areas.

The areas of vegetation that are to be protected during construction must be indicated on a site plan and this should conform to the decision reached between the Botanist, the Local Authority, the Engineer, Cape Nature, the Contractor and the ECO. A method statement is to be submitted to the ECO by the Contractor, detailing the method of fencing for protection of the conservation areas.

18.3. Clearing of Vegetation, Stripping & Conservation of Topsoil

Prior to construction or earthworks commencing on site, top material must be stripped from work sites and separately stockpiled for later use in rehabilitating damaged areas or for landscaping purposes.

A Method Statement must be submitted detailing the methods to be used for vegetation clearing. All cleared areas must be stabilised as soon as possible. Burning of cleared vegetation is prohibited in terms of the Environmental Conservation Act. The burying of

cleared vegetation or use as part of backfill or landscape shaping is prohibited unless written approval is obtained from the ECO.

Cleared vegetation may be used for mulch or slope stabilisation of the Site.

Any area where the topsoil will be impacted by construction activities, including the construction offices and storage areas, must have the topsoil stripped with herbaceous vegetation (other than alien species), overlying grass and other fine organic matter and stockpiled for subsequent use in rehabilitation after the area has been cleared of vegetation.

Topsoil storage areas must be convex and should not exceed 2m in height. The Contractor must ensure that the material does not blow or wash away. Topsoil must be treated with care, must not be buried or in any other way be rendered unsuitable for further use (e.g. by mixing with spoil) and precautions must be taken to prevent unnecessary handling and compaction. In particular, topsoil must not be subject to compaction greater than 1 500 kg/m² and must not be pushed by a bulldozer for more than 50 m. Trucks may not be driven over the stockpiles.

Topsoil from different soil types must be stockpiled separately and replaced in the same areas from which they were taken if this proves to be the case. Specific attention should be given to the areas that may house rare and threatened species. Topsoil areas must be demarcated in order to ensure the safekeeping of topsoil and to separate different stockpile types.

18.4. Protection of Archaeological & paleontological remains

If remains or artefacts are discovered on Site during earthworks, work in the vicinity must cease and the Contractor must immediately inform the Engineer and the ECO who must

Contact the South African Heritage Resources Agency (SAHRA) for information on the appropriate course of action to be taken

In the event that previously unknown archaeological features are exposed during the construction phase, the Contractor should inform the Engineer and the ECO who will advise the Applicant on the necessary course of action.

Note that the Contractor may not, without a permit issued by the responsible heritage resource authority; destroy, damage, excavate, alter, deface or otherwise disturb any archaeological site or archaeological material. The latter is a criminal offence under the Heritage Resources Act.

18.5. Appropriate use of Machinery

Contractor must at all times carefully consider what machinery is appropriate to the task while minimizing the extent of environmental damage.

The contractor may not operate any machinery including a fuel driven compressor outside the demarcated area.

Where practical, all maintenance of plant on Site must be performed in workshops. If it is necessary to do maintenance outside of a workshop area, the Contractor must obtain the approval of the Engineer and the ECO prior to commencing activities

All vehicles and equipment must be kept in good working order and serviced regularly. Leaking equipment must be repaired immediately or removed from the Site. When servicing equipment, drip trays must be used to collect the waste oil and other lubricants. Drip trays must also be provided in construction areas for stationary plant (such as compressors) and for "parked" plant (such as scrapers, loaders, vehicles). Drip trays will be kept free of water that will float the oil to overspill.

18.6. Demarcating and fencing

Final site demarcation must be carried out with all relevant parties (who will be responsible) present for the day-to-day activities on the site, they include;

The Applicant	Representative
Environmental Consultant	Environmental Consultant (EC)
Main Contractor	Project Site Manager
Sub-contractor	Project contractor
ECO/ESO	Environmental Control Officer or Site Officer

The proposed site will be demarcated prior to the commencement of any construction whatsoever, this includes site establishment, the moving of construction material or any other items onto the site, ect.

The site will be demarcated with appropriate strong steel dropper poles. A single strand of orange baler twine is to be attached to the dropper poles to indicate boundaries and no-go

Areas for site personnel and vehicular movement. (Alternative fencing may be decided upon dependent on site requirements)

The construction area i.e. road, stockpile areas etc. must be demarcated and fenced off with steel dropper poles and orange baler twine approximately 1m high is considered adequate. The demarcation will be agreed on during the start-up meeting.

All fencing and fence placement / positioning must be approved by the ESO on site.

Work areas and access routes must be clearly demarcated to minimise environmental impact.

NB Steel dropper poles and orange baler twine has proven to be the most environmentally friendly means of on site demarcation.

In the event that sensitive features are threatened by construction activities, temporary fencing off of these areas (for individual areas such as trees or rocks) or the construction area (when working in a mainly natural environment) is recommended.

The Contractor must maintain in good order all demarcation, fencing and barriers for the duration of construction activities, or as otherwise instructed. Any temporary fencing removed for the execution of any portion of the works is to be reinstated by the Contractor as

soon as practicable. The Contractor at the end of the contract must remove all demarcation, fencing or barriers not forming part of the final works on Site.

Once in place the demarcation barriers may not be moved or altered without consultation with the site ESO and the main contractor

18.7. "NO-GO" Areas

Areas if so required by the CEMP, EA or ON SITE START-UP MEETING are certain pre-determined or as a result of the OSS MEETING must be "NO-GO" areas. The contractor must ensure that no person, machinery, equipment enter the "NO-GO" areas at any time.

If so required by specifications in the CEMP, certain areas must be "No go" areas. The Contractor must ensure that, insofar as he has the authority, no person, machinery, equipment or material enters the "No go" areas at any time.

Areas of special importance will be decided upon between the Engineer, Contractor and the ECO and demarcated as "No go" areas on a site plan and fenced off. Such areas are out of bounds to the Contractor and his staff, sub-contractors and their staff or suppliers and their staff and to any other person involved in the construction, without the written permission specified by the ECO.

18.8. Storm water, Erosion & Sedimentation Control

The Contractor must take appropriate and active measures to prevent erosion resulting from his own works, operations and activities as well as storm water control measures to the satisfaction of the ESO.

During construction the Contractor must protect areas susceptible to erosion by installing all the necessary temporary and permanent drainage works as soon as possible.

Other measures as may be necessary must be taken to prevent the surface water from being concentrated in streams and from scouring the slopes, banks or other areas. All such measures must be discussed with and approved by the ESO.

18.9. Fuel, Tar Compounds and Oil

No Fuels and flammable materials are to be stored on the site.

Basic guidelines to follow if any fuels are to be stored are as follows:

- These areas must comply with general fire safety requirements.
- All vehicles, equipment, fuel and petroleum services and containers must be maintained in a good condition that prevents leakage and possible contamination of soil or water supplies. Drip trays to be used in these storage areas to prevent contamination of the ground in the event of spillages or leaks
- Quantities of fuels must never be more than 2 x 200 litres at any time.
- All must have a drip tray present to use in the event off accidental spillage of oils and fuels.

- A suitable leak proof container for the storage of oiled equipment (filters, drip tray contents and oil changes etc.) must be established.
- Fuels and oils must be safely located out of harms way from the elements and safety and fire prevention must be strictly adhered to.
- All spills are to be recorded in the ESO diary.

Fuel Storage proposals must be cleared by the ECO/ESO before any storage or stockpiling takes place.

18.10. Hazardous Substances

If potentially hazardous substances are to be stored on site, the Contractor must provide a Method Statement detailing the substances/materials to be used, together with the storage, handling and disposal procedures of the materials to the Engineer and the ECO.

Paints: - No paint pEAucts may be disposed of on Site and brush/roller wash facilities must be established to the satisfaction of the Engineer and the ECO. Oil based paints and chemical additives and cleaners such as thinners and turpentine must be strictly controlled. A Method Statement detailing the paint management procedures is required.

Hazardous building materials: -Hazardous building materials (e.g. asbestos, fibre claddings, refrigerants, coolants, substation cooling oils, etc) must be identified and dealt with in accordance with the relevant safety and health legislation. All such material must be separated on Site and disposed off at appropriate licensed disposal sites. The Contractor must supply the ECO with a certificate of disposal.

18.11. Concrete works

The Engineer (in collaboration with the ECO) must indicate the permitted location of batching plants (including the location of cement stores and sand and aggregate stockpiles), if these are to be present on Site, on a site plan. A Method Statement indicating the layout and preparation of such facilities must be submitted

Cleaning of equipment and flushing of mixers must not result in pollution of the surrounding environment. All wastewater resulting from batching of concrete must be disposed of via the contaminated water management procedure. Used cement bags must be stored in weatherproof containers to prevent wind dispersion and water contamination. Used bags

Must be disposed of on a regular basis via the solid waste management system, and must not be used for any other purpose.

All visible remains of excess concrete must be physically removed and disposed of on completion of cement work. Washing the remains into the ground is not acceptable. All excess aggregate must also be removed.

The following recommendations must be implemented to minimise impact.

- The concrete mixing must take place on top of boarding and/or sheeting as so as to protect the ground. This board and or sheeting must be removed from the site once the mixing is complete

- Concrete batching to place at demarcated areas
- Cement contaminated water may not enter a natural or man-made (e.g. trench / sloop or dam) water system. Preventative measures include establishing sumps from where contaminated water can be either treated in situ or removed to an appropriate waste site.
- Mixing areas to be carefully placed in consultation with the ESO.
- If possible/appropriate ready mix concrete must be used.
- Cement bags are to be stored securely out of harms way from the elements (wind and rain). Bags has to be covered and placed on plastic sheeting
- Sand and stone to be stored on plastic if it is stored outside the future fenced off site.
- Excess or spilled concrete must be confined within the works area and then removed to a waste site.
- Wash down areas must be confined to within the concrete batching area only.

18.12. Blasting / drilling

In the event where blasting or rock drilling is required, the following recommendations must be implemented:

- A Method statement must be provided for each case separately prior to commencement of works.
 - The contractor must take all necessary precautions to prevent damage to special features and the general environment, which includes the removal of fly rock.
 - The contractor must ensure that no pollution results from drilling operations, either as a result of oil and fuel drips, or from drilling fluid. The contractor must take all reasonable measures to limit dust generation as a result of drilling operations.
- The ESO must be given 24-hour notice before blasting events.

18.13. Fires and smoking

No fires are allowed.

If Smoking is allowed on sites then arrangements to be made for disposal of cigarette buds. No smoking will be allowed outside the demarcated areas.

Adequate fire fighting equipment according to the fire hazard during the construction period must be available on site in good working order (at least one type ABC (all purpose) 12.5 kg extinguisher and 3 fire beaters per working area). The persons on site must be trained in the use of such equipment.

The main contractor must provide a list of all authorities involved in fire fighting in the region. This list must include emergency contact numbers.

Welding, gas cutting or cutting of metal will only be permitted inside the working areas.

The Contractor must pay the costs incurred to organizations called to put out any fires started by him. The Contractor must also pay any costs incurred to reinstate burnt areas as deemed necessary by The Applicant.

It is required that contractors have available [if there is cell phone reception] the emergency telephone numbers of the nearest local Fire Fighting Station and that an emergency fire fighting action plan has been drawn up with on site workers and the property owner or resident farmer.

18.14. Emergency Procedures

Fire: The Contractor must advise the relevant authority of a fire as soon as one starts and must not wait until he can no longer control it. The Contractor must ensure that his employees are aware of the procedure to be followed in the event of a fire.

Spills: The Contractor must ensure that his employees are aware of the procedure to be followed for dealing with spills and leaks, which must include notifying the Engineer, the ECO and the relevant authorities. Treatment and remediation of the spill areas must be undertaken to the reasonable satisfaction of the ECO and Local Authority.

18.15. Dust

The Contractor must take all reasonable measures to minimize the generation of dust as a result of construction activities (including dust generated on haul roads) to the satisfaction of the ECO and Local Authority

18.16. Solid Waste Management

No on-site burying or dumping of any waste materials, vegetation, litter or refuse must occur. The Contractor must provide vermin and weatherproof bins with lids of sufficient number and capacity to store the solid waste produced on a daily basis. The lids must be kept firmly on

The bins at all times. Bins must not be allowed to become overfull and must be emptied at least once a day. Waste from bins may be temporarily stored on Site in a central waste area that is weatherproof and scavenger-proof and which the Engineer and the ECO has approved.

All solid waste must be disposed of off site at an approved landfill site in terms of section 20 of the Environment Conservation Act (Act No. 73 of 1989).. The Contractor must supply the ECO with a certificate of disposal. All hazardous waste must be disposed of at a licensed hazardous waste site.

The Contractor must make provision for workers to clean up the Contractor's camp and working areas every day so that no litter is left lying around and so that the site is in a neat and tidy state. The Contractor must remove from site the refuse collected at least once a week.

The Contractor must be responsible for the establishment of a refuse control system that is acceptable to the ESO.

Disposal arrangements must be made in advance and cleared with the ESO before construction starts.

18.17. Toilets & Ablution Facilities

A minimum of one toilet must be provided per 15 persons at each working area or as stipulated in the Management plan. The Contractor must provide suitable sanitary arrangements near the construction sites.

The toilet must be within easy reach (max 200-m) of the working area and be cleaned on a daily basis. Toilet paper must be provided. The toilets must be emptied on a weekly basis or when full or when instructed by the ESO on site.

Disposal arrangements must be made in advance and cleared with the ESO before construction starts. Sanitation provision and servicing must be to the satisfaction of the ESO. The Contractor must ensure that toilets are emptied before any builders' holidays.

Toilets must be of a neat construction and must be provided with doors and locks and must be secured to prevent them blowing over.

If a long drop toilet system is the preferred system the catchment ditch must be a suitable depth to sustain use over the construction period and upon removal of the system adequate rehabilitation measures must be applied to the satisfaction of the ESO.

NB NO BURYING OF ANY WASTE MATERIAL ON OR NEAR THE CONSTRUCTION SITE NOR ANYWHERE ON THE SURROUNDING PROPERTY IS PERMITTED.

18.18. Stockpiling

Any stockpiling of gravel, cut, fill or any other material including spoil must only be allowed in degraded areas or areas below the future cover of buildings and tar or paved parking surface. The Contractor must indicate the proposed areas for such operations and method of undertaking such operations in a Method Statement to be submitted to the ECO for approval before any such activity begins. Any area used for stockpiling and not covered by building

Development must be returned to at least the state they were in before stockpiling and it must be ensured that the erosion potential of these areas is not increased.

The Contractor must ensure that the material does not blow or wash away or mix with each other. If the stockpiled material is in danger of being washed or blown away, the Contractor must cover it with a suitable material, such as hessian, netting or plastic.

18.19. Preparation of Building Material

The Contractor must ensure that any delivery drivers are informed of all procedures and restrictions (including "no go" areas) required to comply with the Specifications. The Contractor must ensure that these delivery drivers are supervised during off-loading, by someone with an adequate understanding of the requirements of the Specifications

All manufactured and/or imported material must be stored within the demarcated area, and, if so required, out of the rain. All lay down areas outside of the construction camp must be subject to the Engineer and the ECO's approval in such a way as not to cause a nuisance or environmental damage.

All building materials are to be prepared at the batching plant, to enable the effects of cement and other substances, and the resulting effluent to be more easily managed

18.20. Discharge of construction water

Potential pollutants of any kind and in any form must be kept, stored, and used in such a manner that any escape can be contained and the water table not endangered. This

Particularly applies to water emanating from runoff from fuel depots/workshops/truck washing areas. Wash down areas must be placed and constructed in such a manner so as to ensure that the surrounding areas are not polluted.

Contaminated water includes water that is carrying excess sediment due to construction activities. Contaminated water storage facilities must not be allowed to overflow and appropriate protection from rain and flooding must be implemented. Contaminated water that is removed from site must be disposed of at a facility approved by the ECO and Local

Authority. No contaminated water that does not meet the water quality standards and criteria under the National Water Act may be released into a natural system, whether it is to surface or groundwater

All cement effluent from mixer washings, and run-off from batching areas and other work areas must be contained in suitable sedimentation ponds. Sedimentation ponds must be allowed to dry out on a regular basis to allow for solid material to be removed. This material must be disposed of in a suitable manner, depending on the nature of the material, and to the discretion of the ESO.

18.21. Treating of Pipelines (if required)

Cleaning/sterilization/flushing of pipelines shall not impair surrounding environmental quality. Any contaminated water from such activities shall be contained until it complies with the standards contained in the National Water Act or other relevant Acts, as well as those laid down by the Local Authority or else it shall be removed from site and disposed of at an approved waste disposal site.

18.22. Contractors Temporary Camping site & Eating Areas

The Contractor must designate eating areas to the approval of the ECO, which must be clearly demarcated. No eating of meals must take place outside these designated areas

Without the approval of the Contractor. The feeding, or leaving of food for animals are strictly prohibited. Sufficient waste bins must be present in this area and emptied regularly.

No overnight camping/stay on site allowed. If overnighing is necessary for security purposes then it must be cleared with the ESO on site.

No washing in dams or streams are allowed.

18.23. Traffic, Access Routes & Haul Roads

The Contractor must control the movement of all vehicles and plant including that of his suppliers so that they remain on designated routes. In addition such vehicles and plant must be so routed and operated as to minimise disruption to regular users of the routes not on the Site. On gravel or earth roads on Site, the vehicles of the Contractor and his suppliers must not exceed a speed of 25 km/h. On public roads adjacent to the Site vehicles will adhere to municipal and provincial traffic regulations.

As far as possible any access routes/haul roads must utilise existing roads or tracks. Any new access roads/haul roads must be designed so as to minimise erosion and must run across slopes and not directly up them.

All temporary access routes must be rehabilitated at the end of the contract to the satisfaction of the ECO.

Method Statements for any new access/ haul roads must be submitted

18.24. Site Clean Up and Rehabilitation

The Contractor must ensure that all structures, equipment, materials and facilities used or created on site for or during construction activities are removed once the project has been completed. The construction site must be cleared, and cleaned to the satisfaction of the ESO.

18.25. Land Management

Visiting vehicles must be driven carefully in hazardous road conditions, sharp bends, narrow roads, bad weather, children on or near a road or domestic animals on or near the road.

Vehicle movements should be kept to a minimum during rain to avoid damage to access roads.

No fences or gates of property owners must be damaged. The condition of all-user gates must be closed upon access and exit to construction areas to prevent animals from getting out or access by unauthorised personnel. The access gates to the construction areas must always be closed.

Soil erosion must be prevented at all times along the access roads and around construction areas.

No bush or brush clearing to be undertaken without the knowledge of the ESO and landowner.

18.26. Socio-Cultural Issues

Property owners or property occupiers must be treated with respect and courtesy at all times.

The cultural lifestyles of the communities living in close proximity to the construction areas must be respected.

18.27. Additional Associated Installations

18.27.1 Construction of new access roads

In the event of the construction of a new access road to the site the access route is pre-determined prior to the On Site Start-Up Meeting.

Discussed at the Access Road Start-Up Meeting include the following but not restricted to;

- CEMP and contents thereof
- Demarcation of the access route
- Containment of soil and rock from excavation
- Transit areas of excess excavation road materials
- Stockpile areas for sub-base and surface material
- Earthmoving machinery for specific tasks
- Mandatory Site Equipment
- Placing of on site toilet facilities
- Specific requests from farmers or property owners
- Dust Pollution
- Post construction erosion methods
- Site Specific agreements emanating from the Start-Up Meeting

18.27.2 Installation of Power lines & trenching of AC cables (if required)

In the event of the installation of an electrical overhead power line or the trenching of AC cable the proposed route has been pre-determined prior to the On Site Start-Up Meeting.

Discussed at the power line installation Start-Up Meeting include the following but not restricted to;

- CEMP and contents thereof
- Establishing the location of the "TAP-OFF" point
- Arranging a time for the physical "Walk-In" and inspection of the power line route with the contractor, and the site ECO/ESO. [If required a representative from The Client may be present as well as the property owner or farmer]
- Establishing suitable stockpile areas for poles, machinery and accessories.
- Placing of poles on heavy duty plastic.
- Exit and entry points along the power line route
- Method of Pole Drilling. Pole Planting and Stringing phases
- Method of approach to pole hole location [i.e. Drive in Reverse out]
- Specific requests from farmers or property owners
- Mandatory Site Equipment
- Placing and method of site toilets.
- AC cable trenching
- Site Specific agreements emanating from the On Site Start-Up Meeting

19. TERMS AND ABBREVIATIONS:

The following definitions are applied:

Audit.-[Site Completion] Environmental Site Inspection and verification of construction activities to CEMP

Bund - enclosure under / around a storage facility to contain any spillage.

Batch plant - a concrete or plaster mixing facility and associated equipment and materials.

Contractor - the principal persons / company and all other sub-contractors involved in the construction of the project.

Construction phase - The construction phase period of a cellular communications Construction site is defined as from the commencement of site establishment up to and including the practical site handover.

DEADP Department Environmental Affairs & Development Planning

DTEC – Department Of Tourism, Environment And Conservation [Northern Cape Province]

Declaration of Understanding – Form that is signed by all contractors involved in the construction works of their understanding and acceptance of the CEMP and site-specific additions to the CEMP.

Development site - boundary and extent of development works and infrastructure.

ECO - Environmental Control Officer: - Must be a suitably qualified independent site environmental consultant appointed to ensure compliance to the CEMP.

ESA – Environmental Site Agent

ESO - Environmental Site Officer - . Must be a person with adequate environmental knowledge to understand and implement the CEMP by conducting on site inspections determined by the ECO and The Applicant.

ECO vs ESO - ECO might also mean the ESO but the ESO does not mean the ECO. The ESO is responsible to the ECO

ER – Engineers representative or Main contractors representative

On Site Start-Up Meeting – The OSSM held at site to discuss CEMP and determine Site Specific additions that will be included as the basis for the CEMP.

EA – Record Of Decision issued by DEADP or DTEC for the authorisation to commence construction under certain environmental compliances.

CMC	Cape Metropolitan Council
DTEC	Department of Tourism Environment and Conservation
DEA&T	Department of Environmental Affairs and Tourism
DWA&F	Department of Water Affairs and Forestry
EIA	Environmental Impact Assessment
EMP	Environmental Management Programme, although the term Environmental Management <i>Plan</i> is often used interchangeable with <i>Programme</i> .
EMS	Environmental Management System
IEM	Integrated Environmental Management
*ECO	Environmental Control Officer
*ESO	Environmental Site Officer
ER	Engineer's Representative
I&AP	Interested & Affected Party
SAHRA	South African Heritage Resources Agency

Environment means the surroundings within which humans exist and that are made up of:

- the land, water and atmosphere of the earth;
- micro-organisms, plant and animal life;
- any part of the combination of the above two bullets and the interrelationships between them;
- the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being.

Potentially hazardous substance is a substance, which, in the reasonable opinion of the Engineer, can have a deleterious effect on the environment.

Method Statement is a written submission by the Contractor to the Engineer or relevant responsible person such as the Project Leader, in response to the Specification, or a request by the Engineer/Project Leader, setting out the plant, materials, labour, method, responsible persons and timeframe that the Contractor proposes using to carry out an activity, identified by the relevant specification or the Engineer/Project Leader when requesting the Method Statement, in such detail that

the Engineer/Project Leader is enabled to assess whether the Contractor's proposal is in accordance with the Specifications and/or will pEAuce results in accordance with the Specifications.

The Method Statement shall cover applicable details with regard to:

- construction procedures;
- materials and equipment to be used;
- getting the equipment to and from site;
- how the equipment/ material will be moved while on site;
- how and where material will be stored;
- the containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur;
- timing and location of activities;
- compliance/non-compliance with the Specifications;
- any other information deemed necessary by the Engineer/Project Leader.

reasonable means, unless the context indicates otherwise, reasonable in the opinion of the Engineer/Project Leader after he has consulted with a person, not an employee of the Applicant Directorate, suitably experienced in "environmental implementation plans" and "environmental management plans", both as defined in the Environmental Management Act (Act No 107,1998).

solid waste means all solid waste, including construction debris, chemical waste, excess cement/concrete, wrapping materials, timber, tins and cans, drums, wire, nails, food and domestic waste (e.g. plastic packets and wrappers).

contaminated water means water contaminated by the Contractor's activities, e.g. concrete water and runoff from plant/ personnel wash areas.

construction site means the area influenced and affected by the construction activities or under the control of the Contractor, often referred to as "the Site".

contractor's camp means the designated and suitably demarcated areas on the Site within which all site offices and staff facilities are situated and within which equipment will be stored, for instance, borrow areas, batching plant, crusher plant, sand washing plant, workshop, offices, rest areas, ablution areas, etc., whichever is applicable.

construction means the period of the project during which the actual works are carried out, deemed to include site establishment, site preparation, the works, maintenance period and decommissioning.

precautionary principle means the basic principle, that when in doubt or having insufficient or unreliable information on which to base a decision, to then undertake actions that will have minimum risk.

Applicant	The person/organisation (usually the landowner or holder of the servitude rights) with rights to undertake the development of the site.
Audit/Monitoring	Regular inspection and verification of construction activities for degree of compliance to the Environmental Management Programme.
Bund	Enclosure under/around a storage facility to contain any spillage.
Batch plant	Machinery used on site for the large-scale mixing and pEAuction of concrete or plaster and associated equipment and materials.
Contract	An accepted offer to execute specified work within a stated time for a monetary reward. It takes the form of all the documents and drawings issued when tenders are invited (in which the nature and quantity of the work to be executed are set out), the schedules of which documents have been priced by the contractor for completion within a stated time, and the acceptance, in writing, of the Contractor's price) (source: SABS 0120; 1986). OR The General Conditions of Contract and Special Conditions, Specifications, Drawings, Tender, written records of matters agreed after the submission of the Contractor's tender, Letter of Acceptance and Agreement, together with other documents which the parties have agreed in writing shall form part of the Contract and such amendments or additions to the Contract as may be agreed in writing

	between the parties (source: GCC, 1990).
Contractor	The natural or juristic person or partnership whose tender has been accepted by, or on behalf of the Employer and where applicable, includes the Contractor's heirs, executors, administrators, trustees, judicial managers or liquidators, as the case may be.
Developer	The developer is the person/body responsible for the development of the project and could be the same as, or different to the applicant.
Emergency	A situation requiring immediate action and where failure to implement appropriate actions timeously may result in environmental damage.
Engineer	A person who represents the Applicant and is responsible for the technical, environmental and contractual implementation of the works to be undertaken.
Engineer's Representative	<p>The person appointed from time to time by the Engineer in terms of the General Conditions of Contract. The Engineer's Representative shall:</p> <ul style="list-style-type: none"> • Observe the execution of the Works, examine and test materials and workmanship and receive from the Contractor such information as he shall reasonably require. • Have the authority: <ul style="list-style-type: none"> ○ Given to him by any provisions of the Contract. ○ Given to him by the Engineer. ○ To deliver to the Contractor oral or written communications from the Engineer. ○ To receive on behalf of the Engineer oral or written communications from the Contractor. <p>The powers and authority of the Engineer's Representative would be subject to certain conditions.</p>
Environmental Awareness Course	An environmental education course for the Contractors management staff and labour force which informs them of the requirements of the EMP.
Environmental Completion Statement	A report document submitted to the relevant authority showing that the EMP environmental controls were appropriately implemented on a project.
Environmental Completion Audit	Similar to an Environmental Completion Statement but it is more detailed and will contain detailed information regarding controls and their effectiveness. This document would be required for large projects normally where a professional environmental scientist was appointed as the ECO.
Environmental Management Programme:	<p>A programme for managing potential impacts identified during the approval process. It could consist of one or more of the following components, depending on necessity dictated by the nature of the development:</p> <ul style="list-style-type: none"> • Standard Environmental Specification • Detailed Environmental Specification • Guideline documents and tools for implementation by the different role players • The Environmental Education Course • Standard Revegetation Specification • Detailed Revegetation Specification <p>As mentioned earlier, the term Environmental Management <i>Plan</i> is often used interchangeable with Environmental Management <i>Programme</i>, and for the purposes of this document will be assumed to have the same definition.</p>
*ESO (Environmental Site Officer)	Designation is reserved for suitably qualified environmental site managers, who are to be appointed by the Engineer, and are mainly associated with large and complex developments.
*ECO (Environmental Control Officer)	Designation is reserved for suitably qualified authority or officer acting on their behalf. The ECO is usually a professionally qualified Environmental Scientist.
Environmental Specification	For the purposes of this study, this designation is reserved for the combination of the Standard Environmental Specifications and the Detailed Environmental Specifications.
General Conditions of Contract	A document that sets out the general rights and obligations of the parties to a contract, on such matters as sureties, quality of work, program, supervision, insurance, co-operation with others, provision of plant, material and labour, the regulation of wages, samples, tests, examination, commencement and completion of work, penalties for delay, requirements for maintenance, methods of dealing with defects, variations, measurements and payments, and the settlement of disputes. In South Africa the most widely accepted general conditions of contract for general civil

	engineering works is the SAICE General Conditions of Contract for Works of Civil Engineering Construction (sixth edition, 1990).
No Go Areas	Areas identified as being environmentally sensitive in some manner and delineated on plan, and on the site with pegs or fencing and which are out of bounds to unauthorised persons. Authorisation must be obtained from the Engineer/Project Leader prior to entry.
Particular Specification	A specification that covers construction work involving a specialist type of operation that is not adequately covered in a Standardized Specification.
Project Specification	A specification that describes the Works in general terms (including the locality, the conditions on Site, the extent of the Contract, the construction programme, and the service facilities available and to be taken into consideration) and that may include clauses that amend or amplify or add to any requirement(s) of a standardized specification (or standard or particular specification) in the sequence in which the requirements and specifications occur in the contract documents.
Reference Group:	The funding body and major role-players (including the environmental authorities) who may resolve environmental disputes, which could arise between the different role-players on site.
Revegetation Specification Site	This designation is reserved for the combination of the Standard Revegetation Specifications and the Detailed Revegetation Specifications. The boundary and extent of development works and infrastructure, including any areas off the main site on which works are to be carried out in order to allow the development to proceed successfully.
Specification	A technical descriptions of the standards of materials and workmanship that the Contractor is to use in the Works to be executed, the performance of the Works when completed and may include the manner in which payment is to be made. It is essential for the specifications to be clear, concise and to the point, and use should not be made of ambiguous terms or phraseology.
Standard Specification	An established or accepted model specification. In South Africa the most widely accepted standard specification for general civil engineering works is the set of SABS 1200 Standardized Specifications (refer to definition below), however, other Standard Specifications such as BS, AAWA and Standard Water Specifications are also used.
Standardized Specification	A specification that is published by the South African Bureau of Standards (SABS) and that so covers a particular class of civil engineering construction that the specification is generally applicable throughout the Republic of South Africa.
Top material	This refers to any surface material in the construction area, whether it is soil, fine material or stones including vegetation.
Works	The works to be executed in accordance with a contract.

20. APPENDICES:

Appendix 1: SITE START-UP REPORT

Appendix 2: PENALTIES FOR NON-COMPLIANCE

Appendix 3: DECLARATION OF UNDERSTANDING

Appendix 4: INFORMATION ON METHOD STATEMENTS

Appendix 5: EXAMPLE OF METHOD STATEMENT

Appendix 6: CONTRACTOR/S REPRESENTATIVE: ENVIRONMENTAL DAILY CHECKLIST

Appendix 7: BASIC RULES OF CONDUCT

Appendix 8: ESO DAILY REPORT/CHECKLIST

Appendix 9: EA.

Appendix 10: DRAWINGS (SEE BASIC ASSESSMENT REPORT).

Appendix 11: RECOMMENDATIONS AS PER BASIC ASSESSMENT REPORT

Appendix 12: Other documents.

APPENDIX 1: START-UP REPORT

TO BE INCLUDED AFTER START-UP MEETING

APPENDIX 2: PENALTIES FOR NON-COMPLIANCE

The contractors / sub-contractors must contact the ECO at any stage if unsure about any matter, or if a pollution incident occurs, or vegetation or animals are damaged.

ECO = Environmental Control Officer ESO= Environmental Site Officer

PHASE	Penalty for Non-compliance	
	Bottom range	Top Range*
PRE-CONSTRUCTION PHASE		
Construction area to be marked off before construction starts.		5000
The demarcated area must be maintained throughout the construction phase	500	1000
Site area for stock piling of building material must be demarcated	500	5000
Site area for storing of waste material must be demarcated	500	5000
Fencing off the construction site with mesh fencing of 1.8m, where necessary or other suitable material as agreed on by ECO	500	1000
Sitting of access road/s to be approved by ECO & demarcated with stakes before any construction starts (if applicable)		5000
Temporary route used for construction must be determined on site with ECO (if applicable)	1000	5000
Telecommunications & AC power routes must be determined with the ECO (if applicable)	1000	5000
Sensitive features that may be harmed must be clearly marked or demarcated.	500	2000
Vegetation that may not be removed must be clearly marked or demarcated.	500	5000
Contractor must make the Construction team and all sub-contractors aware of all environmental aspects that could lead to imposition of penalties	100	5000
Contractor to sign Declaration of understanding (DOU) before construction starts		5000
Contractor to assure that all subcontractors be informed and signed DOU	1000	5000
Method statements must be provided on request by the ECO. No work may commence until the Method Statement is accepted by the ECO and Engineer	1000	5000
CONSTRUCTION PHASE		
Information		
A copy of the CEMP & Record of Decision with all the conditions of approval, and the relevant Method Statements must be at site at all times.	200	5000
Construction crew behaviour		
Construction crews may not overnight on site.	200	5000
No amplified music allowed on site	100	200
Construction crew must stay within the demarcated construction area. (Applicable in sensitive sites)	50	500
Eating of meals only allowed in demarcated area	50	500
No pets permitted on site		100
Driving, Parking & Storing of machinery and vehicles are only allowed inside demarcated areas and existing roads	1000	5000
Machinery may only be used on the road and may not disturb the vegetation on the sides of the road except if cleared by ECO. Machinery used must be carefully considered to limit environmental damage	500	5000
No vegetation other than that agreed on may be damaged - i.e. no access to areas outside construction area.	500	2000
No individual may cause unnecessary damage to flora and fauna on,	20	2000

around or near the site		
No littering allowed (incl. cigarette butts)	50	500
Excavations		
No topsoil may be removed or altered outside the demarcated area and/or which was not specified.		2000
Commercial sources of sand, rock and gravel to be cleared with ECO	200	5000
All surplus material to be taken off-site and be disposed of at approved site	500	5000
Toilets		
Sufficient ablution facilities must be provided		3000
Toilets to be secured to prevent them from falling or blowing over.	100	1000
They must be serviced regularly, (according to the manufacturers instructions) and kept clean.	100	1000
Everybody on site must make use of ablution facilities	50	1000
Fire Prevention		
All mandatory fire fighting equipment (as specified at start-up) must be on site at all times	500	4000
Fire fighting equipment to be in good working order and serviced.	500	2000
No fires, including cooking fires, allowed on site	1000	5000
Cement		
Concrete may only be mixed within the boundaries of the demarcated area and/or where was agreed on by the ECO.	500	5000
All excess cement & concrete mixes to be contained on construction site prior to disposal off site	200	5000
Any cement / concrete spillage to be cleaned up immediately.	500	5000
Mixing and storage areas must be appropriately located in demarcated area	500	1000
Dust pollution control		
Ensure that loose building material is covered to prevent dust pollution	100	1000
Water run-off		
Contamination of water bodies, rivers, dams or wetlands must be prevented at all cost	500	5000
Rainwater from construction & building site/s must be channelled, contained & allowed to dry out, so as not to transport any pollutants into the surrounding area. Temporary trenches, straw stabilising, brush cutting can be used	500	5000
Waste control		
Sufficient refuse bins must be placed on site	500	2000
Refuse bins must be cleaned on a regular basis	100	1000
General litter / building refuse must be cleaned up on a regular basis from the site	500	3000
Cement-contaminated water; paint; oil; cement slurries etc must be stored in watertight containers or as agreed with ECO	500	5000
Store all refuse & waste material in wind & animal proof containers	100	1000
Waste must be disposed of at an official waste deposit site on a regular basis.	500	5000
The absence of or inadequate drip trays or bunding facilities	500	5000
Failure to address oil/fuel leaks from on-site machinery	200	5000
Herbicides		
No herbicides or pesticides whatsoever may be used.	200	2000
Construction road		
Road must be upgraded to prevent degradation and erosion of the road and surrounds.	500	5000
Power and Telecommunications supply		
Demarcate power supply route	500	5000
No vehicles to drive through vegetation unless authorised by ECO	500	5000

Storage of equipment may only take place at an area demarcated by the ECO.	500	5000
Working must be done in phases to prevent trampling of vegetation	N/A	
Use of generators and fuel powered equipment		
A watertight cover must be placed under the power generator equipment to prevent accidental spillage of fuel & oil seeping into the soil.	500	5000
Drip tray must be able to take 120% of fuel on site	500	5000
All waste material generated from the use of this equipment must be contained and removed from the site	500	5000
Mobile fuel powered equipment must be well maintained and must not have any fuel or oil leaks.	200	5000
Soil Stabilisation		
Ensure that soil material for filling and stabilisation comes from a source that does not contain seeds alien to the area. The source must be cleared with the ECO.	100	2000
Rehabilitation		
Remove rocks and stones and stock pile in area recommended by ECO	500	5000
Remove all plants that can be used for rehabilitation and store on- or off-site in appropriate manner as agreed with ECO	200	5000
Removal of all old concrete and alien materials from site	500	5000
Site must be cleared of all waste and building material	500	5000

*(Large scale / repeated offence)

APPENDIX 3: DECLARATION OF UNDERSTANDING

DECLARATION OF UNDERSTANDING

I, _____

Representing _____

Declare that the conditions of the authorisation were brought under my attention and that I have read and understood the contents of the Environmental Management Plan (which includes all documents as per Record of Decision).

SITE: MIER MUNICIPALITY LOW COST HOUSING PROJECT

EA: ref. _____

Date: _____

I also declare that I understand my responsibilities in terms of enforcing and implementing the Environmental Specifications as set out in the various documents for the aforementioned site.

I also undertake to inform all persons under my supervision of such specifications and contents of the documents.

Signed: _____

Place: _____

Date: _____

Witness 1: _____

Witness 2: _____

APPENDIX 4: INFORMATION ON METHOD STATEMENTS

Method Statements are to be completed by the person undertaking the work (i.e. the Contractor). The Method Statement will enable the potential negative environmental impacts associated with the proposed activity to be assessed.

The Method Statement can only be implemented once approved by the ESO.

The Contractor (and, where relevant, any sub-contractors) must also sign the Method Statement, thereby indicating that the works will be carried out according to the methodology contained in the approved Method Statement.

The ESO will use the Method Statement to audit compliance by the Contractor with the requirements of the approved Method Statement.

Changes to the way the works are to be carried out must be reflected by amendments to the original approved Method Statement; amendments require the signature of the ESO, denoting that the changed methodology or works are necessary for the successful completion of the works, and are environmentally acceptable. The Contractor will also be required to sign the amended Method Statement thereby committing him/herself to the amended Method Statement.

This Method Statement **MUST** contain sufficient information and detail to enable the ESO to apply their minds to the potential impacts of the works on the environment. The Contractor will also need to thoroughly understand what is required of him/her in order to undertake the works.

THE TIME TAKEN TO PROVIDE A THOROUGH, DETAILED METHOD STATEMENT IS TIME WELL SPENT. INSUFFICIENT DETAIL WILL RESULT IN DELAYS TO THE WORKS WHILE THE METHOD STATEMENT IS REWRITTEN TO THE ER'S AND ESO'S SATISFACTION. The page overleaf provides a *pro forma* method statement sheet, which needs to be completed for each activity requiring a method statement in terms of the EMP.

APPENDIX 5: EXAMPLE OF METHOD STATEMENT

METHOD STATEMENT

CONTRACT:..... **DATE:**.....

PROPOSED ACTIVITY (give title of method statement and reference number):

WHAT WORK IS TO BE UNDERTAKEN (give a brief description of the works):

WHERE ARE THE WORKS TO BE UNDERTAKEN (where possible, provide an annotated plan and a full description of the extent of the works):

START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:

Start Date:

End Date:

HOW ARE THE WORKS TO BE UNDERTAKEN (provide as much detail as possible, including annotated maps and plans where possible):

Note: please attach extra pages if more space is required

DECLARATIONS

1) ENVIRONMENTAL CONSULTANT AND/OR SITE OFFICER

The work described in this Method Statement, if carried out according to the methodology described, is satisfactorily mitigated to prevent avoidable environmental harm:

(Signed) (Print name)

(Signed) (Print name)

Dated: _____

2) PERSON UNDERTAKING THE WORKS

I understand the contents of this Method Statement and the scope of the works required of me. I further understand that this Method Statement may be amended on application to other signatories and that the ESO will audit my compliance with the contents of this Method Statement

(Signed) (Print name)

Dated: _____

3) THE APPLICANT

The works described in this Method Statement are approved.

(Signed) (Print name) (Designation)

Dated: _____

4) APPROVING AUTHORITY

The works described in this Method Statement are approved.

(Signed) (Print name) (Designation)

Dated: _____

APPENDIX 6: CONTACTOR/S REPRESENTATIVE: ENVIRONMENTAL WEEKLY CHECKLIST

CONTACTOR/S REPRESENTATIVE: ENVIRONMENTAL WEEKLY CHECKLIST

SITE: _____

PHASE OF WORK AND % OF COMPLETION: _____

ENVIRONMENTAL ASPECT	YES/ NO (✓ or X)	COMMENTS
• How many workers are on site		
• All new personnel on site are aware of the contents of the EMP and have been through the environmental awareness course.		
• Contractor's camp is neat and tidy and the labourers' facilities are of an acceptable standard.		
• Sufficient and appropriate fire fighting equipment is visible and readily available.		
• Waste control and removal system is being maintained.		
• Refuse bins in place and maintained		
• Toilets are in place and clean		
• Demarcation and other fences are being maintained.		
• What machinery are on site		
• Drip trays are being utilised were there is a risk of incidental spillage		
• Bunds/ drip trays are being emptied on a regular basis (especially after rain).		
• No leakages (oil & fuel) are visible from construction vehicles		
• No go areas, remaining natural features and trees have not been damaged.		
• Dust control measures (if necessary) are in place and are effectively controlling dust.		
• Noise Control measures (if necessary) is in place and is working effectively.		
• Erosion control measures (if necessary) are in place and are effective in controlling erosion. (Access road, site areas ect.)		
• Stockpiles are located within the boundary of the site, do not exceed 2 m in height and are protected from erosion.		

Completed by:..... Sign:..... Date:.....

To be submitted at the end of each week to the Environmental Site Officer (ESO)

Received by:

Environmental Site Officer: :..... Sign:..... Date:.....

APPENDIX 7: BASIC RULES OF CONDUCT

BASIC RULES OF CONDUCT

The following list represents the basic Do's and Don'ts towards environmental awareness, which all participants in this project must consider whilst carrying out their tasks. These are not exhaustive and serve as a quick reference aid.

NOTE: ALL new site personnel must attend an environmental awareness presentation. Please inform your foreman or manager if you have not attended such a presentation or contact the ESO.

DO:

- USE THE TOILET FACILITIES PROVIDED – REPORT DIRTY OR FULL FACILITIES
- CLEAR YOUR WORK AREAS OF LITTER AND BUILDING RUBBISH AT THE END OF EACH DAY – use the waste bins provided and ensure that litter will not blow away.
- REPORT ALL FUEL OR OIL SPILLS IMMEDIATELY & STOP THE SPILL CONTINUING.
- DISPOSE OF CIGARETTES AND MATCHES CAREFULLY. (Littering is an offence.)
- CONFINE WORK AND STORAGE OF EQUIPMENT TO WITHIN THE IMMEDIATE WORK AREA.
- USE ALL SAFETY EQUIPMENT AND COMPLY WITH ALL SAFETY PROCEDURES.
- PREVENT CONTAMINATION OR POLLUTION OF STREAMS AND WATER CHANNELS.
- ENSURE A WORKING FIRE EXTINGUISHER IS IMMEDIATELY AT HAND IF ANY “HOT WORK” IS UNDERTAKEN e.g. Welding, grinding, gas cutting etc.
- REPORT ANY INJURY OF AN ANIMAL.
- DRIVE ON DESIGNATED ROUTES ONLY.
- PREVENT EXCESSIVE DUST AND NOISE.

DO NOT:

- REMOVE OR DAMAGE VEGETATION WITHOUT DIRECT INSTRUCTION.
- MAKE ANY FIRES.
- INJURE, TRAP, FEED OR HARM ANY ANIMALS – this includes birds, frogs, snakes, lizards etc.
- ENTER ANY FENCED OFF OR MARKED AREA.
- ALLOW CEMENT OR CEMENT BAGS TO BLOW AROUND.
- SPEED OR DRIVE RECKLESSLY
- ALLOW WASTE, LITTER, OILS OR FOREIGN MATERIALS INTO THE STREAM
- SWIM IN THE DAM.
- LITTER OR LEAVE FOOD LAYING AROUND

Notes:

1. Must any animals such as tortoises, chameleons or snakes be encountered then do not harm them. The ESO or RE must be contacted to remove these safely. The harming of any animal will result in disciplinary action.
2. Construction and heavy machine operators must be particularly sensitive to staying within access routes and prevention of unnecessary damage. Dust and noise is also of particular concern. Ensure that vehicles and machinery do not leak fuel or oils. Refuelling or maintenance must be done within the maintenance camp area only.
3. Alien plant clearing and control work teams must be closely supervised.

BASIESE GEDRAGSKODES

Die volgende lys verteenwoordig die Moets en Moenies vir omgewingsbewustheid wat alle deelnemers aan hierdie projek in ag moet neem tydens die uitvoer van hul take. Hierdie lys is nie volledig nie en dien slegs as 'n vinnige verwysing.

NOTA: **ALLE nuwe terreinpersoneel moet 'n aanbieding ten opsigte van omgewingsbewustheid bywoon.** Indien u nog nie so 'n aanbieding bygewoon het nie, lig asseblief u voorman of bestuurder in of kontak die Omgewings Terreinbeampte.

MOETS:

- GEBRUIK DIE BESKIKBARE TOILET-GERIEWE – RAPPORTEER VUIL OF VOL GERIEWE.
- MAAK U WERKPLEK SKOON VAN ROMMEL OF BOUROMMEL AAN DIE EINDE VAN ELKE DAG – gebruik beskikbare vullisdromme en verseker dat rommel nie rondwaai nie.
- RAPPORTEER ALLE BRANDSTOF- EN OLIE STORTINGS ONMIDDELIK – STOP VERDERE STORTING.
- WEES VERSIGTIG MET DIE WEGDOEN VAN SIGARETTE EN VUURHOUTJIES. (rommelstrooi is 'n oortreding.)
- BEPERK WERKAKTIWITEITE EN DIE STOOR VAN TOERUSTING TOT DIE ONMIDDELIKE WERKAREA.
- GEBRUIK VEILIGHEIDSTOERUSTING EN VOLDOEN AAN ALLE VEILIGHEIDS-MAATREËLS.
- VOORKOM BESOEDELING VAN STROME EN WATERBANE
- VERSEKER DAT 'N BRANDBLUSSER IN WERKENDE TOESTAND BYDERHAND IS WANNEER “WARM” WERK VERRIG WORD bv. Sweis, wegslyp, gasny, ens.
- RAPPORTEER BESEERDE DIERE.
- RY SLEGS OP AANGEWESSE ROETES.
- VOORKOM OORMATIGE STOF EN GERAAS.

MOENIE:

- PLANTEGROEI VERWYDER OF BESKADIG SONDER DIREKTE INSTRUKSIE NIE.
- ENIGE VURE MAAK NIE.
- ENIGE DIERE DOOD, BESEER, VANG OF VOER NIE, insluitende voëls, paddas, slange, akkedisse, ens.
- ENIGE OMHEINDE OF AFGESPERDE AREAS BINNETREE NIE.
- SEMENT OF SEMENTSASSE LAAT RONDWAAI NIE.
- VINNIG OF ROEKeloos BESTUUR NIE.
- ENIGE ROMMEL, AFVAL, OLIE OR ENIGE VREEMDE MATERIAAL IN STROME LAAT BELAND NIE.
- IN DIE DAM SWEM NIE.
- ROMMELSTROOI OF KOS LAAT RONDLÊ NIE.

Notas:

1. Indien enige diere soos skilpaaie, verkleurmannetjies of slange teëgekom word, moet hulle nie beseer of dood nie. Kontak die OTB of RI om hulle veilig te verwyder. Die besering van diere sal lei tot dissiplinêre optrede.
2. Operateurs van konstruksie- en swaar masjiene moet veral versigtig wees om binne toegangsroetes te bly en om enige onnodige skade te voorkom. Verseker dat voertuie en masjiene nie olie of brandstof lek nie. Brandstofaanvulling en voertuigonderhoud mag slegs binne die onderhoudsarea gedoen word.
3. Streng toesig moet gehou word oor indringerplantbeheerspanne.

EZIPPHAMBILI EKUNYANZELEKILEYO UKUBA ZENZIWE

Zonke ezi zinto zilandelayo zizinto ekufuneka zenziwe nekufuneka zingenziwanga. Wonke umntu ofikayo kufuneka afundiswe ngemigaqo kupala. Needa yazisa iforman yakho ikuba awukhange uye kufundiswa.

IZINTO EMAZENZIWE

- SEBENZISA IZINDLU ZANGASESE, YAZISA XA KUKHO UMONAKALO.
- ZAMA UKUCOCA APHO UBUSEBENZA KHONA.
- SEBENZISA IMIGQOMO YENKUKUMA UNGAYEKI IPHAPHTIEKE.
- YAZISA XA UBONA IOIL ECHITHSKALAYO OKANYE IPETROL.
- CIMA LOZOLI CIGARETTE XA UGQIBIBILE UKUTSHAYA
- ZONKE IZIXHOBO USEBENZA ZIBUYISELE APHO ZIHLAKA KHONA XA UCGIBILE APHO ZIHLALA KHONA XA UGQIBILE UKUZISEBENZISA.
- ZISEBENZISE IZIKHUSELIXA UZINKIWE.
- SUKUGALELA IZINTO EMLANJENI.
- MASIBEKHO ISICIMA MLILO XAUSEBENZA NGOMLILO.
- YAZISA MSINYANE XA UBONE ISILWANYANA EZONZAKELEYO.
- XAUQHUBA ISITHUTHI HAMBA ENDLELENI QHA UNGAFATHULINJE.
- NAPHINA ZAMAUNGENZI THULI OKANYE INGXOLO XA USEBENZA.

EMAZINGENZIWA

- SUKUSUSA NESIPHINA ISITYALO UNGAKHANGE UXELELWE
- SUKWENZA MLILO NOKUBA SEKUBANDA
- AMAGQARA UKUBULALA IZILWANYANA NOKUZIFIDA AKUVUMELEKANGA
- SUKUNGENA XA KUVALIWE NGAPHANDLE KWE MVUME
- INGXOWA ZESAMENTE MAZINCEDWE ZINGALAHLEWA NJE
- SUKUQHUBA NGESANTYA ESIPHAKAMILEYO
- SUKUGALELE NAYIPHI INTO PHAYA EMLANJENI
- SUKUQUBHA EDAMENI Q OQOSHA YONK INKUKUMA

APPENDIX 8: ECO/ESO SITE REPORT/CHECKLIST

ECO / ESO SITE VISIT CHECKLIST / REPORT:

PROJECT NAME: DATE

PROJECT & PHASE: LOCATION

ENVIRONMENTAL ASPECT	COMMENTS
1 = Poor, 2 = Average, 3 = Good, NA = Not Applicable	
<p>DEMARCATION</p> <p>METHOD STATEMENT</p> <p>Boundaries of “no go” areas, construction sites, offices, temporary storage areas as well as labourer’s facilities must be demarcated (EMP and ECO requirements) and maintained for the length of the construction period.</p>	
<p>NO-GO AREAS/PROTECTION OF FAUNA & FLORA</p> <p>Identified “No-Go Areas”, remaining natural veld and indigenous- or significant trees are protected features and must be demarcated for protection from construction damage (including secondary impact).</p> <p>All areas outside of the demarcated construction sites and access roads to be regarded as NO-GO areas unless otherwise agreed upon with the client and ECO.</p> <p>All flora identified to be rescued must be removed and placed in an area specifically allocated and taken care off until re-used in pre-approved way.</p> <p>Identified areas with significant vegetation must be protected as NO-GO areas.</p>	
<p>CLEARING OF VEGETATION & TOPSOIL REMOVAL</p> <p>METHOD STATEMENT</p> <p>Before any construction or earthworks, topsoil must be stripped (>150mm) and stockpiled for rehabilitation/ landscaping.</p> <p>Stockpiles:</p> <p>must be protected (may not blow or wash away or gets compacted) and stored separately.</p> <p>may not be moved further than 50m or mixed with any other soil.</p> <p>must be convex and should not exceed 2m in height.</p> <p>In addition:</p> <p>Cleared areas must be stabilized.</p> <p>Burning or burying of cleared vegetation is prohibited, but may be used for mulch or slope stabilisation on site.</p>	
<p>STOCKPILING</p> <p>METHOD STATEMENT</p> <p>Top- and subsoil’s from trenches must be located within site boundaries, stabilised and may not exceed 2m in height.</p>	

ENVIRONMENTAL ASPECT		COMMENTS
1 = Poor, 2 = Average, 3 = Good, NA = Not Applicable		
TEMPORARY STORAGE FACILITIES METHOD STATEMENT Must be demarcated, organised, neat and tidy and of acceptable standards.		
CONSTRUCTION CAMP & SITE OFFICES METHOD STATEMENT Must be demarcated, organised and free of day-to-day litter (maintaining good housekeeping standards).		
FUEL STORAGE METHOD STATEMENT Fuel storage areas must be situated within the demarcated construction camp site (or an area approved by the ECO). Bunds must be built (EMP and ECO requirements) around larger fuel storage areas (accidental spillages). Drip trays must be used (in accordance with EMP) at all fuel and oil storage and refilling sites and must be cleaned regularly, especially after rain.		
LABOURER'S FACILITIES METHOD STATEMENT Facilities must be of acceptable standards suitably demarcated, well maintained, neat and tidy and with adequate ablution facilities.		
ENTRANCE AND HAUL ROADS METHOD STATEMENT Only approved entrance and haul roads may be used (existing roads and infrastructure). No new roads or parking areas may be developed without written approval from the ECO.		
MANDATORY SITE EQUIPMENT METHOD STATEMENT Mandatory site equipment must be in place, well maintained and in accordance with EMP and ECO requirements. Sufficient refuse bins must be on site (well placed and conspicuous) and must be cleaned regularly. Fire extinguishers must be readily available, maintained and functional. Drip trays must be used (in accordance with EMP) at all fuel and oil storage and refilling sites and must be cleaned regularly, especially after rain. Toilets and sanitation facilities must be kept clean neat and hygienic (toilet paper must be available).		

ENVIRONMENTAL ASPECT		COMMENTS
1 = Poor, 2 = Average, 3 = Good, NA = Not Applicable		
<p>WASTE CONTROL</p> <p>METHOD STATEMENT</p> <p>The contractor is expected to control all construction related waste material and general litter on actual construction sites and its immediate surroundings.</p> <p>Waste management must be in accordance with the EMP, of acceptable standards, with regular removal of general waste, hazardous waste as well as construction waste (e.g. concrete waste and spoil).</p>		
<p>CEMENT MIXING & BATCHING AREAS</p> <p>METHOD STATEMENT</p> <p>Mixing areas must be approved by the ECO, suitably demarcated and may not result in pollution.</p> <p>Polluted cement water may only be released into sedimentation ponds.</p> <p>Sedimentation ponds must be maintained and cleaned regularly (and reinstated after use).</p>		
<p>CONSTRUCTION VEHICLE MAINTENANCE</p> <p>METHOD STATEMENT</p> <p>Construction vehicles must be in good working order and well maintained to prevent oil and fuel leakages and to reduce noise levels.</p> <p>Maintenance areas must be approved by ECO.</p> <p>Refuelling must be done in accordance with the EMP, using drip trays.</p>		
<p>HEAVY EARTHMOVING EQUIPMENT</p> <p>Construction vehicles and equipment may only operate <u>within</u> the demarcated site boundaries (and approved access roads), especially heavy earthmoving vehicles.</p>		
<p>DUST CONTROL</p> <p>METHOD STATEMENT</p> <p>Adequate control measures must be in place to prevent dust pollution as a result of construction activities (especially with regard to entrance-, haul roads and exposed surfaces).</p> <p>Areas of concern must be watered regularly during construction AND periods of strong winds, BUT must take water saving into account.</p>		

ENVIRONMENTAL ASSESSMENT		COMPLIANCE
1 = Poor; 2 = Average; 3 = Good; NA = Not Applicable		
<p>EROSION CONTROL</p> <p>METHOD STATEMENT</p> <p>Erosion resulting from works must be controlled.</p> <p>Temporary and permanent drainage works must be maintained.</p> <p>Erosion damage and damage in drainage courses must be reinstated.</p>		
<p>NOISE CONTROL</p> <p>METHOD STATEMENT</p> <p>Effective noise control measures must be in place and acceptable working hours must be kept (deviations must be approval by the ECO).</p>		
<p>ENVIRONMENTAL CONDUCT</p> <p>Environmental conduct of construction personnel must be acceptable (e.g. no burning or burying of refuse; no littering and no cement bags or other construction waste material lying around).</p>		
<p>ARCHAEOLOGICAL & HERITAGE FINDS</p> <p>METHOD STATEMENT</p> <p>Should any archaeological or heritage remains be exposed during excavations or any activity on site, these must immediately reported to The site agent/engineer, the ECO HWC or SAHRA.</p>		
<p>REHABILITATION</p> <p>METHOD STATEMENT</p> <p>On completion of the project or phase, all areas impacted by the construction activities must be reinstated and/or rehabilitated to the satisfaction of the ECO with emphasis on the following:</p> <p>Site offices must be removed and the areas rehabilitated or reinstated to the satisfaction of the ECO.</p> <p>Labourer's facilities must be removed and the areas rehabilitated or reinstated to the satisfaction of the ECO.</p> <p>All construction site areas must be rehabilitated or reinstated to the satisfaction of the ECO.</p> <p>All temporary fencing and demarcation must be removed and the areas reinstated to the satisfaction of the ECO.</p> <p>Temporary storage areas must be rehabilitated or reinstated to the satisfaction of the ECO.</p> <p>All remaining construction material must be removed and the areas rehabilitated or reinstated to the satisfaction of the ECO.</p> <p>Any additional disturbed areas must be rehabilitated or reinstated to the satisfaction of the ECO.</p>		

ENVIRONMENTAL ASPECT		COMMENTS
1 = Poor, 2 = Average, 3 = Good, NA = Not Applicable		
ADDITIONAL METHOD STATEMENTS Method statements must be submitted and approved before commencement of the works and must be available at the site offices.		
ENVIRONMENTAL CHECKLIST The contractor must ensure that the weekly environmental checklist is completed at the end of each week and it must be available at the site offices.		
SPOT FINES & PENALTIES Spot fines and penalties must be recorded and documented by the ECO (in accordance with the EMP).		
FIXED POINT PHOTOS Photographs must be taken by the ECO, Site Engineer and or Site Manager, prior to, during and immediately after construction as visual reference. These photographs must be stored with other records relating to the EMP.		

ECO:

APPENDIX 9: ENVIRONMENTAL AUTHORIZATION.

APPENDIX 10: DRAWING/S

APPENDIX 11: RECOMMENDATIONS AS PER BASIC ASSESSMENT REPORT.

APPENDIX 12: ANY OTHER RELEVANT DOCUMENTS