



**the dme**

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Reference:  
Date:

EC30/5/1/1/3/2/1/0145EM  
17 February 2010

South African Heritage Resources Agency  
P.O. Box 758  
GRAHAMSTOWN  
5200

*Case ID: 2435.*

ATTENTION: MR. T. LUNGILE

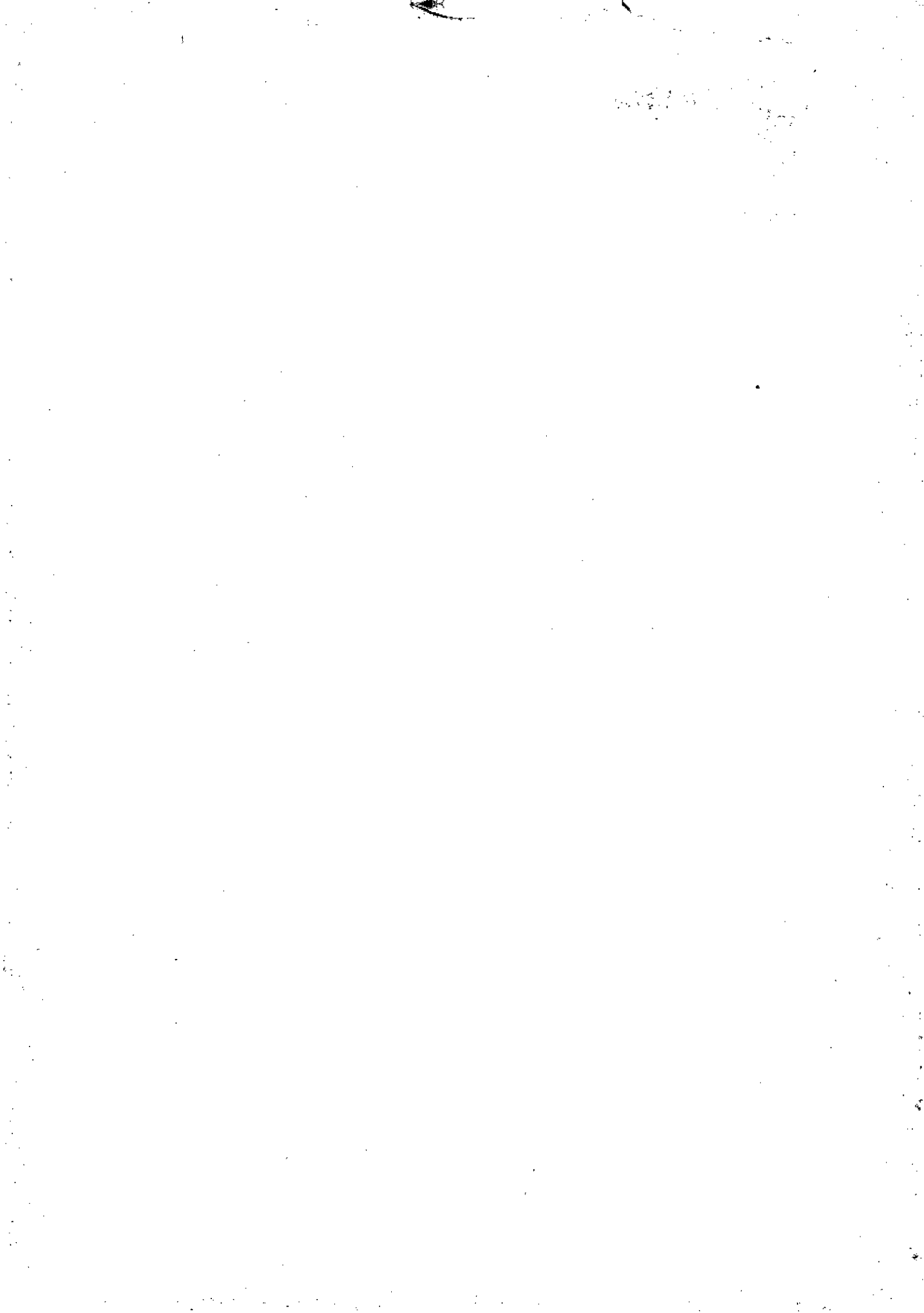
Sir

**CONSULTATION IN TERMS OF SECTION 40 OF THE MPRDA OF 2002:  
ENVIRONMENTAL MANAGEMENT PLAN IN SUPPORT OF AN APPLICATION TO  
PROSPECT FOR AGGREGATE ON A PORTION OF FARM 202, DIVISION OF  
FORT BEAUFORT, EASTERN CAPE**

1. Amatola Quarry Products cc has applied for a prospecting right on the above-mentioned area.
2. Attached is the EMP for your comment.
3. Please forward any written comments or requirements your department may have on this application, to this office no later than **17 April 2010**. Failure to do so will lead to the assumption that your Department has no objection(s) or comments with regards to the application.
4. Consultation on this application has been initiated with other relevant State Departments.
5. Kindly quote the relevant file reference number in all correspondence.

Yours faithfully

REGIONAL MANAGER  
EASTERN CAPE



File number: (EC 30/5/1/1/2/0145PR)

DEPARTMENT OF MINERALS AND ENERGY  
ENVIRONMENTAL MANAGEMENT PLAN

Incorporating:  
ANNEXURE A: Details of Public Participation

Submitted in support of application for a **Prospecting Right**  
Section 39 and Regulation 52 of the Minerals and Petroleum Resources Development Act, 2002  
(Act 28 of 2002)



Application for a: **PROSPECTING RIGHT**

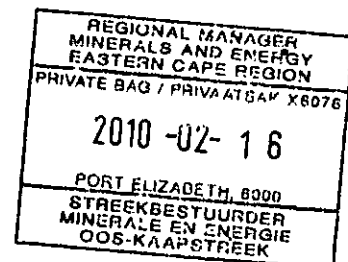
Applicant: **AMATOLA QUARRY PRODUCTS CC**

Farms: **FARM 202**

District: **FORT BEAUFORT**

Mineral: **CONSTRUCTION AGGREGATE**

Date: **FEBRUARY 2010**



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### **Annexures**

Annexure A	Details of Notification and Participation
Annexure B	Archaeological Heritage Impact Assessment
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Annexure E	Induction Environmental Training

## 1.0 INTRODUCTION

On 10 December 2009 Amatola Quarry Products CC made application for a Prospecting Right on the northern 678,9455ha portion of Farm 202 in the Magisterial District of Fort Beaufort. The Prospecting Right seeks to prospect a unique grey sandstone horizon which is suitable for aggregate production and has previously been used for such purpose when quarrying on the adjacent Farms 141 & 142 under a road contract.

The application was accepted and consequently the applicant has since notified the landowner (as discussed in Chapter 19) and compiled this Environmental Management Plan for Prospecting. While the application as was submitted only envisaged trial-pitting, (following the Applicant's telephonic discussion with DMR personnel) this is adapted within this EMPR to conduct the prospecting by the following methods:

- (i) Firstly by **detail surface mapping** on foot to determine all outcrop areas of the grey sandstone.
- (ii) Secondly by **dry percussion drilling** to prove the nature of the sandstone at depth and thickness thereof as well as the absence of interbedded shales at selected sites indicated by the surface mapping.
- (iii) Thirdly by **limited trial-pitting** to establish the nature of overburden especially shale overburden to a maximum of 2m deep where the sandstone projects into the hill below the weathered shale and mudstone.

## 2.0 LOCALITY AND ACCESS

Figure 1 shows the locality of the Prospecting Area being the northern portion (678,9455ha) of the larger Farm 202 to lie between 6 & 7km southwest of the town of Fort Beaufort with the northern boundary immediately south of the rail-line to Bedford between the rail sidings of Likley and Kuxuwe.

Access to the Prospecting Area is gained either:

- (i) From the R63 Bedford tar road by existing farm access road over the existing rail-crossing at Likley siding; or
- (ii) Directly off the Divisional Road (Fort Beaufort to R344) which gives access to the southern portion of the Prospecting Area.

Within the Prospecting Area most of the farm is directly accessed by farm tracks.

### 3.0 CONTACT DETAILS

Full name (and surname) of person or company applying for permit or right	<i>Amatola Quarry Products cc</i>
ID number of person or company/ CC registration number	<i>Co Reg #: 1996/000073/23</i>
Postal address	<i>P O Box 13, Komga, Eastern Cape, 4950</i>
Physical/ residential address	<i>Hardwich Street, Komga</i>
Applicant's Contact	<i>Mr KP Hagemann</i>
Applicant's phone number	<i>043 8311198/228</i>
Alternative contact's name	<i>Na</i>
Alternative contact's telephone/cell phone numbers	<i>Na</i>
Consultant contact details	<i>Site Plan Consulting P O Box 28, Strand, 7139 Tel: 021-854 4260 Fax: 021-854 4321 Email: <a href="mailto:david@siteplan.co.za">david@siteplan.co.za</a> Contact Persons : Stephen van der Westhuizen / David Cotton</i>
Full name of the property on which mining/prospecting operations will be conducted	<i>Prospecting will be conducted on Farm 202 Fort Beaufort</i>
<i>Farms: Farm 202, Fort Beaufort Owner John Peter Mildenhall Title Deed no: T9838/1976 Total extent of property: 875.7939 ha  Extent of Prospecting Area: 678.9455 ha</i>	
Approximate centre of mining/prospecting area	<i>-32.804866°S 26.552968°E</i>
Magisterial district	<i>Fort Beaufort</i>
Name of the registered owner of the property	<i>Owner John Peter Mildenhall Title Deed no: T9838/1976</i>
Current uses of surrounding areas	<i>**Abandoned quarrying activities on adjacent Farm 141 immediately west, airstrip on the commonage north of the R63 and grazing</i>
Are there any other existing land uses that impact on the environment in the proposed mining/ prospecting area?	<i>**Abandoned quarrying activities on adjacent farm</i>
What is the name of the nearest town?	<i>Fort Beaufort, 7km to the East</i>

**\*\* Shown in Figure 1 – Locality Plan**

#### **4.0 CO-ORDINATED SURVEY PLAN**

Refer Figure 2 for plan compiled in terms of Regulation 2(2) together with the full table of co-ordinates for the riverine property boundary as contained in Annexure D.

#### **5.0 MOTIVATION FOR THE PROSPECTING APPLICATION**

While the Roads Department recently re-used an old quarry on the adjacent Farm 141/142 as seen in the photo background of Figure 5, such quarries were established on an obvious but limited outcrop area and with drilling only conducted to prove the immediate requirements of the contracts.

As it is the intent of Amatola Quarry Products (AQP) cc to establish a long-term commercial quarry to supply the Fort Beaufort area with all construction aggregates and not only respond to road contracts, AQP cc wishes to fully investigate the northern portion of the Farm 202 to establish the total extent of the grey sandstone and to prove one or more sites in such sandstone horizon which will be suitable for the establishment of a commercial quarry with proven continuity in depth and lateral extent, i.e. proven reserves, as the basis for making application for a Mining Right as opposed to a Mining Permit.

While AQP cc is aware that the market between larger contracts is only in the order of  $\pm 3\ 000\text{m}^3$  or 5 000tons/month, the regular road maintenance and housing expansion programmes will contribute to maintaining an average sales per year in the order of 3 000-4 000m<sup>3</sup>/month which is adequate to support a small plant with low establishment costs which would be the case if a continuous outcrop site can be proven during prospecting.

At present, in the absence of sustained production in the Fort Beaufort area the aggregate required in housing programmes between Cookehouse and Alice is all imported at extremely high transport cost from either King Williams Town, Port Alfred or Cradock with the full transport cost borne by the user (community).

Such costs have made low-cost housing projects which rely on aggregate for block manufacture and foundations prohibitively expensive causing housing tenders to be continuously postponed.

#### **6.0 PROJECT DESCRIPTION**

As aerial photographic interpretation and a background knowledge of the grey sandstone horizon by AQP cc's consulting geologist enables a target area for prospecting as shown in Figure 6 to be identified by aerial photography as the grounds for launching the Prospecting Project, the prospecting will concentrate on the pediment contour of the hill of the northern portion of Farm 202. Notwithstanding such general indication, the Prospecting Project will still be initiated by detail surface mapping on foot to determine all outcrop areas of grey sandstone to then be followed by dry percussion drilling of areas targeted in the surface mapping phase and finally the delineation of the edge extent of such sandstone at a specific site by limited trial-pitting.



## 7.0 PRE-MINING ENVIRONMENT

The following baseline assessments by desktop analysis serve as the baseline descriptions for the environmental assessment in Chapter 11 and include the following:

### 7.1 Geology

As shown in Figure 3 the Prospecting Area falls within the Middle Beaufort Group (Middleton Formation). This Formation is known to comprise mainly mudstones, siltstones and sub-ordinate sandstone. However, the site does contain a portion of the unmapped but well-known member being the grey "quartzitic" sandstone which is also quarried in King Williams Town and East London but is not continuous between outcrops of good quality.

While abandoned quarries and virgin sites are known in the dolerite to the south of the site, these deep boulder-weathered dolerites were not considered as an alternative given difficult and expensive establishment costs associated with this weathering pattern.

### 7.2 Soils

Two soil types are identified with their respective characteristics, namely:

- Swartland-Adelaide soils of 300-500mm deep occurring on lower gradient slopes characterised by taller grasses, refer Photo 1; and
- Mispah-Carnarvon shallow soils where rock outcrops form large sheets of bare rock given the horizontal bedding of the sandstone. Soil depth in these areas which will be the primary areas for prospecting investigation will vary between 0-300mm.

The agricultural potential of the target Mispah soil areas is very low for grazing with no potential for arable use.

The deeper Swartland soils only have a potential for grazing with a moderate to good carrying capacity of 12ha/Lsu. In the absence of sufficient water they have no agricultural potential other than for grazing.

The erodability of both soils is generally low as they are well grassed and gradient not too steep.

### 7.3 Climate

The site falls within the semi arid plateau of South Africa and exhibits the following climatological statistics:

## **Rainfall**

*Table 1: Precipitation Statistics*

Month	Mean Rainfall (mm)	No of days with measurable precipitation	Max rainfall per 24 hours (mm)
Jan	55	9.3	51
Feb	63	10.2	58
Mar	69	9.7	51
Apr	36	7.6	34
May	20	6.2	32
Jun	11	4.3	17
Jul	16	4.7	39
Aug	26	5.8	46
Sep	47	6.6	69
Oct	45	9.7	69
Nov	60	9.1	46
Dec	45	9.1	35
493 annual average		92.3 days per year	69mm max in 24 hrs

\*Weather Station Stats at Fort Beaufort between 1930 and 1959 – (Source: WB40)

The implications of this rainfall pattern for further mining are:

- The relatively low rainfall limits the options of revegetation during rehabilitation generally restricting it to natural revegetation.
- The predominant summer rainfall would limit rehabilitation seeding to the months of Sep - Feb, if seeding with grass is contemplated.
- While rainfall often occurs as intense but brief thunderstorms, limited disturbances in grassed areas do not require special attention to be given to stormwater/erosion management.

### **Max rainfall intensities per month - 24hours**

Maximum intensity as per the table above occurs generally in any month of the year and at 69mm in 24 hours does not pose significant danger for flooding as the area is well drained.

### **Mean monthly maximum and minimum temperatures**

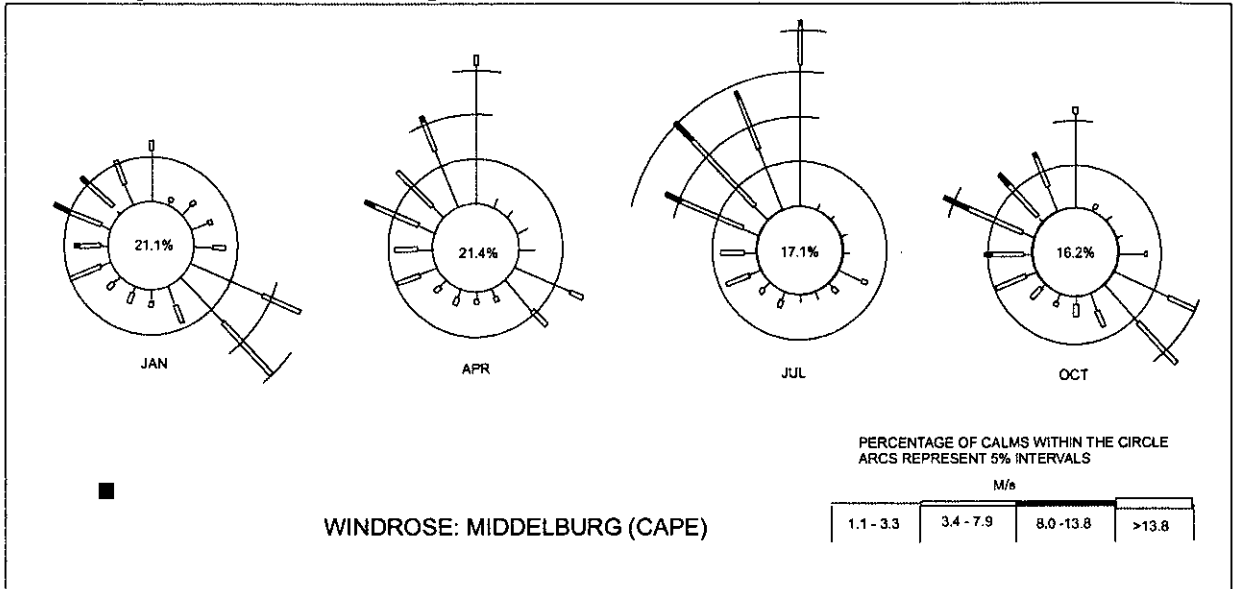
*Table 2: Temperatures (Mean Max and Min)*

Month	Mean max temperature	Mean min temperature
Jan	30.4	15.9
Feb	29.9	16.3
Mar	29.8	14.7
Apr	26.1	11.0
May	23.4	7.6
Jun	21.7	4.3
Jul	21.7	4.3
Aug	22.8	5.8
Sep	24.0	8.1
Oct	25.2	10.8
Nov	27.9	13.2
Dec	29.3	14.8
25.9°C annual average		10.6°C annual average

\*Weather Station Stats at Fort Beaufort between 1930 and 1959 – (Source: WB40)

**Mean monthly wind direction and speed - (the two-hourly wind speed and direction)**

Diagram 1: Wind Rose: Middelburg



Assessment of the wind pattern shows that only light breezes occur from the south-east while the other wind directions do not threaten either the road or rail-line immediately north from a dust perspective.

## 7.4 Land Use

### 7.4.1 On-Site Land Use

On-site land use consists only of grazing as shown in the background photo to the Prospecting Plan (Figure 6). The only infrastructure on site is that of farm tracks, farm pipelines and water supply points.

### 7.4.2 Surrounding Land use

Apart from grazing Figure 1 shows the following non-agricultural land uses within 500m of the farm boundary:

- The disused quarry immediately adjacent but on Farm 141/142
- All other surrounding use is that of live-stocking

Note: The closest neighbouring farmstead is that of Xlu Xlu and it is 1km west of the western boundary of Farm 202 as seen in Figure 1.

As the farmstead is located south-west of the ridge while prospecting activities in the west will be north of the ridge, the farmstead is totally isolated from any noise, dust or visual impact.

The municipal runway is located 1,5km north-east of the Prospecting Area with the runway orientated east-west and proposed activities not in the approach zone of the runway the intended prospecting activities will not affect air traffic at all (see Photo 4 which shows maximum height of the rig to be  $\pm 7$ m when operational) .

## 7.5 Land Capability

As mentioned earlier the site has a livestock grazing capacity of 12h/Lsu. Given the isolation of the site it has no other obvious alternative uses which could determine other land capabilities.

## 7.6 Topography and Hydrology

### 7.6.1 Topography

The topography of the Prospecting Area is best reflected in the 5m contours of Figure 4 which show a north-west to south-east trending ridge with a shallow east-west neck. While the northern slopes and upper southern, eastern and western slopes are gentle, steep slopes occur in the south-east and south below the ridge defined by the grey sandstone.

Resultantly there is a north-west to south-east ridge line which locally divides surface run-off between the northerly and southern run-off while both end up in the Xuxuwa River (a tributary of the Kat River) in the south-east.

### 7.6.2 Surface Drainage

Figure 4 shows the primary drainage lines in blue, none of which will have any informing role/restriction on the Prospecting Programme.

### 7.6.3 Groundwater

The published DWAF Information Sheet at 1:250 000 notes the following in regard to groundwater in the area:

- The site is located above a fractured aquifer-type
- Borehole yield is expected to be in the order of 2-5ℓ/sec
- The groundwater quality is expected to be moderate with a conductivity of 70 -1000mSv/ℓ

As drilling will not have a detrimental effect on existing borehole yield a borehole census is deemed superfluous at this stage but will be conducted prior to any mining application which may be considered later.

### 7.7 Vegetation

The veld type of the entire Prospecting Area and surroundings is classified in the SANBI Vegetation Map of 2006 as Bedford Dry Grasslands.

As seen in Photos 1 & 2 and Figure 5 the veld varies between open grassveld, patches of indigenous bushveld mainly on steep slopes and associated with drainage channels and mostly with the open grassveld invaded by stunted Acacia karoo. The trees occurring in the bushveld along drainage channels are typically Boerboon Acacia caffra; Rhus varieties, Olea europaea, Wild Camphor (Tarchonanthus camphoratis) and tree Euphorbias.

No special conservation rating nor notation of Red Data species is ascribed to the veld type.

### 7.8 Fauna

No unique fauna is noted as being associated with this vegetation type. Notwithstanding no specific classification the mitigation measures are prescribed in the Environmental Management Plan.

- vehicle driver to look out for tortoises and relocate them out of the tracks
- staff to be warned against poaching

### 7.9 Air Quality

We note that the ambient air quality as observed during visits to this area is dependant on the following factors:

- During summer months of high rainfall with associated good grass cover, the ambient dust levels are low and under the warm summer conditions the smoke levels from nearby townships is also low.
- By contrast dust levels from wind generated dust off unvegetated surfaces is high in the dry winter months while smoke levels from both townships and dry veld fires is also high in the winter months especially under temperature inversion conditions in the morning.

### 7.10 Noise

While the ambient noise level on the greater part of the Prospecting Area is low, typical of extensive livestock farming, the northern slope closest to the rail-line and R63 does show a minor increase in ambient noise from the occasional road traffic at a distance of 300-400m but this is of little consequence to a noise consideration.

## 8.0 PHOTOGRAPHIC RECORD

As the impacts of drilling with a pneumatic rig mounted on a low-bed and the digging of a few isolated small trial pits to maximum 2m depth will be so isolated, no photographic record of pre-disturbance can serve the prospecting area prior to prospecting and consequently Photos 1 and 2 merely serve to reflect the general nature of the areas within which the prospecting will be targeted.

The Applicant does however undertake to photographically record the following veld conditions during the demarcation site visit prior to Phase II beginning:

- access road condition
- veld along the access routes
- veld at the drill & trial pit sites
- any soil erosion dongas
- any alien vegetation

and record these plant positions on GPS for later comparison

## 9.0 PROSPECTING WORK PLAN (refer Figure 6 – Prospecting Work, Rehabilitation and Monitoring Plan)

As described earlier the programme and hence the Prospecting Work Plan consists of the following three phases, each now described in terms of equipment, manpower and disturbance caused by each phase.

### (i) Phase I – detail surface mapping.

This will be conducted in the first three months of the programme as shown in the Prospecting Schedule hereafter. The task will entail a one-week visit by the Geologist to conduct the surface mapping of the target grey sandstone outcrops generally in the area shown in Figure 6.

The Geologist will access the site by 4x4 vehicle and maintain use of farm tracks as far as possible, conducting most of the site inspection on foot. The access tracks are clearly shown in Figure 6. The Geologist will ensure that all gates are kept closed and/or locked where applicable.

The activity will be limited to mapping and hand-sampling of loose rock and as such impacts will be limited to:

- Single pass light vehicle tracks in the grassveld where access is required if there is no existing track. As such access will be limited to contour parallel movement the impact of the 4x4 on the grassveld will be temporary and negligible.

The fieldwork will be followed by laboratory testing of hand samples and an assessment of the mapping for planning of the Phase II percussion drilling.

Impacts of this phase will be limited to the low veld disturbance of a responsibly driven bakkie for single pass in the veld and impacts will be negligible.

(ii) Phase II – percussion drilling.

With Phase I having identified one or possibly two target areas for drilling to attempt to prove a suitable quarry site, Phase II will commence with a site visit to finalize the positions of percussion holes at each of the sites and to locate and mark the drill sites and the access routes to be followed by the low-bed and drill-rig with such routes and sites demarcated by clearly visible beacons and recorded by GPS. Photographic recordal as envisaged in 8.0 above will also take place on this visit.

The purpose of such demarcation visit will be to choose the routes and select drill positions of lowest environmental impact. The drill contractor will then educate his staff in the environmental management of the programme and each activity on their arrival on the site (conduct Environmental Awareness Programme).

The drilling contractor will then drill the demarcated holes which are likely to be 10 drill holes per site at two sites with a total of 400m of drilling with each hole drilled to a depth of 20m.

The drilling will be conducted by an hydraulic drill-rig which will largely be retained on the low-bed truck during drilling as seen in Photos 1 and 2.

The drill-rig is equipped with the following environmental attenuation equipment:

- Dust extraction cyclone which bags all dust during drilling which is conducted dry with no drilling mud
- Noise insulation on the motor and hydraulic pump
- Tracks which spread the weight load of the rig where local conditions may require the rig to leave the low-bed by steel ramps and move a short distance through the veld under own propulsion on its tracks
- Samples will be taken from the rig by spade as seen in photograph 5&6 and these will be placed in small sample bags for inspection logging. No waste material or dust pile is left in proximity to the hole.

As the drill-rig has a large capacity diesel tank of its own capable of conducting a full day's drilling (at least 10 holes), the rig will not be refuelled in the veld but refuelling will occur along a gravel road or track at a secure place where a spillage accident risk can be minimised.

All waste by way of lunch wrappers and bottles as well as cloths or drill-bit wrappings used on site will be collected in a 25ℓ drum provided on site for this purpose.

A trailer-mounted mobile toilet similar to that depicted in Photo 9 will be towed to site by the drill contractor for personnel use in the programme.

Potable water will be provided by the toilet facility tank and a 25ℓ container on the contractor's bakkie.

We note that no topsoil will be removed in either the drill sites or on the access routes as it has been determined in many drilling programmes to date that a single vehicle pass or single tracked drill-rig pass has a much lower impact on the veld and the topsoil than any sod or topsoil replacement programme.

Phase II is completed by a desktop analysis of the results as recorded during drilling and inspection of the chip samples in the bags with a final determination of where trial pitting may be required to delineate the edge of the sandstone or depth of overburden increase.

(iii) Phase III - trial pitting

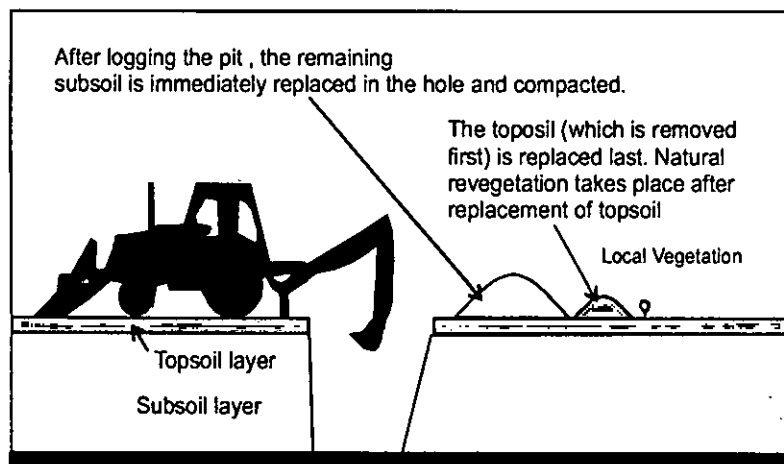
As in the case of drilling, the Environmental Officer will mark the access route and trial pit positions in co-ordination with the Geologist. On arrival, the operator of the digger-loader will be trained in the environmentally sensitive method of manoeuvring in the veld and of systematically removing topsoil with vegetation first and placing it on one side of the pit while subsequently placing the subsoil on the other side of the pit as well as replacing the subsoil first before covering with topsoil and vegetation to smooth off the backfilled hole after profiling.

As the purpose of this pitting will be to establish the nature and depth of overburden to a maximum of 2m thereby delineating the continuity of the sandstone where overlain by increasing weathered shale or by delineating the edge of the sandstone along deeper weathering associated with topography or faulting.

It is envisaged that a maximum of 10 such trial pits will be dug per target site to compliment the drilling results.

Topsoil removal Preservation

Topsoil will be preserved during trial pitting and will be replaced over the backfilled hole as per the sketch below:





As in the case of drilling, no topsoil removal is contemplated in roadways as this will constitute a far greater impact than the impact caused by the single vehicle access into the veld .

(iv) Phase IV – decisions and applications

This is not an operational phase but serves to accommodate four months of decision-making, i.e. either to close the operation or to terminate the operation and apply for closure; or if results prove positive to prepare a Mining Right Application prior to termination of the 12-month Prospecting Right.

To submit a Prospecting Report together with Environmental Performance Assessment Report to the DMR.

**Logistical Facilities**

During prospecting the use of certain logistical facilities as required follows:

- During phases 2 & 3 a trailer mounted chemical toilet as per Photo 9 will be provided on site
- A refuse bin that will be cleared daily and disposed of at a municipal site. Domestic waste volumes will be very low.
- Potable water will be brought to site in bottles
- Fuel and lubricant will be brought onto site as required from Fort Beaufort

There will be no accommodation of staff on the farm at any time. All the required staff will be transported in as required. Staff requirements are estimated as follows:

- Phase 1: 1 Geologist and 1 assistant
- Phase 2 drilling: 6 persons max
- Phase 3 pitting: 6 persons

No workshop facility will be required and should any in-field servicing be required, then it must be conducted using the correct funnels and drip trays.

No process water is required

Special Measures Regarding Prospecting Staff

All staff/ contactors will be informed in their induction training at site that hunting / stock theft is an offence and anybody suspected of poaching livestock or game will be reported to the police and prosecuted as a criminal act. Such action will also be cause for dismissal.

In addition, all staff will be instructed that they will be restricted to the immediate area of the drill and trial pit sites only.

**10.0 PROSPECTING AND REHABILITATION SCHEDULE**

The proposed prospecting schedule will comprise the following activities (from date of approval of the Prospecting Right) as shown in the chart below.

**SCHEDULE OF PROSPECTING & ENVIRONMENTAL MANAGEMENT ACTIVITIES: FARM 202, FORT BEAUFORT**

■ = Environmental Management

		Months												
		1	2	3	4	5	6	7	8	9	10	11	12	6 months
	Approval													
Phase 1 Investigative Phase	a) Desktop Analysis of Aerial Photos													
	b) Literature review, Field geological mapping													
	Hand sampling													
	Analysis of collated results of laboratory testing													
	Assessment Planning of Phase 2													
Phase 2 Percussion Drilling	Finalise positions of the percussion drill holes													
	Locate and mark access routes to the drill sites													
	Educate / train the staff conducting drilling re environmental issues					■	■							
	Conduct drilling of approximately 400m (20 holes of 20m)													
	Logging and Analysis of results Final analysis of results to determine future options													
Environmental Controls	Avoid slewing					■	■							
	Rake disturbances if occurring					■	■							
	Establish chemical toilet					■	■							
	Provide solid waste bins					■	■							
Phase 3 Trial Pitting	Finalise positions of the trial pit sites													
	Locate and mark access routes to the trial pit sites													
	Educate / train the staff conducting trial pitting re environmental issues							■						
	Conduct trial pitting of approximately 20 pits													
	Logging and Analysis of results Final analysis of results to determine future options													
Phase 4: Decisions & Applications	Depending on results, 2 options exist as follows:													
	1) If results prove negative complete rehabilitation & apply for closure													
	OR 2) If results prove positive then submit mining right application. In all events, provide reporting to DME as required by the DME													
Phase 5 Monitoring & Aftercare	Depending on results, 2 options exist as follows:													
	Conduct and submit EPA													
	Inspect tracks and drill and trial pit sites for vegetation recovery, no erosion and no residual spills/refuse Submit closure plan for prospecting											■	■	■

## 11.0 IMPACT ASSESSMENT, RATED IMPACT, ATTENUATION MEASURES AND COST THEREOF

Before the reader considers impacts of the project the following must be emphasised:

While two months are allocated to the drilling and trial-pitting activities respectively, this allocation is to allow leeway in the programme to correlate the geologist's visit with the availability of drilling and pitting equipment. In fact, the drill-rig will most likely only be required on site for a maximum of three days and probably drill the 10 holes per site on the two sites in a total of two days. Likewise, the trial-pitting of the two sites will also only take two days in total.

Impacts by these main activities will therefore be limited to between 4-5 days i.e. within a single week and furthermore it must be noted that each of these vehicles will only require a single entry and exit to conduct their tasks.

We urge the reader to bear in mind this extremely short duration of the invasive activities and the limited scale of such invasion.

### 11.1 Impact on Natural Systems and Land Use

We have assessed all activities which will take place on site and identified their expected impacts on the range of natural and built environmental elements. We have then classified the level of impact at the local scale (given the limited extent of such impacts) and from that derived applicable attenuation measures.

The findings of this impact assessment are documented in the TABLE OF IMPACTS AND ATTENUATION MEASURES overleaf which then concludes on the post-attenuation level of impact before costing the environmental intervention cost on site and for professional advice, inspections and documentation to DMR.

As the impacts are so minor for the form and limited scale of prospecting and limited scale envisaged we have not further described the impact and impact attenuation requirements than as contained in the table and already indicated in the Prospecting Work Plan in paragraph 9.

We trust that for this restricted level of prospecting activity in a veld which is not classified as sensitive that the above assessment (inclusive of the table overleaf) adequately serves the purpose of the EIA.

### 11.2 Socio-Economic Impact

As the drilling will be undertaken by a drilling contractor who will of necessity bring his full staff compliment which serves the drill-rig, the only opportunity for local employment in the Prospecting Programme lies in the following:

- Employment of ± 3 persons for 5 days to rake disturbed vegetation and soil into place and be of general assistance on the site.
- Two persons will be recruited locally to assist in the taking of samples for 5 days.

The only opportunity for local procurement lies in:

- The purchase of diesel locally to refill the drill rig and the digger-loader both on a single occasion.
- The local accommodation of the geologist and drill-rig operators and the purchase of their meals.

The digger-loader will be hired locally.

Despite the limited nature of the project by emphasising local recruitment, purchase and hire the project will at least have the above contribution to the socio-economics of Fort Beaufort.

### **12.0 REHABILITATION PLAN AND SCHEDULE**

The rehabilitation measures will take place wherever the prospecting drilling and trial-pitting will take place. As such locality will only be known after Phase I; Detailed Geological Mapping, the rehabilitation plan elements are to be read together with the Prospecting Work Plan in Figure 6.

As the scheduling of rehabilitation will be concurrent with the prospecting activities which generate the rehabilitation requirements, the rehabilitation items are integrated into the prospecting schedule in paragraph 10 and as shown in the legend of Figure 6

### **13.0 CLOSURE OBJECTIVES**

It is the objective of the Prospecting Programme's rehabilitation to leave the prospecting area in an undisturbed condition (i.e. in its role as grazing-land before prospecting) following the application of the attenuation measures and any actions which may be required during the 6-month monitoring and aftercare period.

**14.0 POST-CLOSURE ENVIRONMENTAL RISKS**

The only post-closure environmental risks which we can identify occurring with an extremely low risk exposure are those of:

- (i) Alien vegetation introduction within the target areas where drilling and pitting has occurred and which can be shown to not occur elsewhere on the farm.
- (ii) Erosion which could only occur if the topsoil is not properly replaced in the small pits or if the access-way through the veld is totally mismanaged during the operation.

Such post-closure environmental risks are highly unlikely as they would have been identified during the 6-month decision-making phase and the subsequent 6-month monitoring phase which encompasses a cycle of seasons.

**15.0 MAINTENANCE AND AFTERCARE**

The maintenance and aftercare plan will involve the following for a 6-month period after the 12-month prospecting period:

- (i) Conduct two site visits at 3-monthly intervals to specifically assess the following against the findings of the Environmental Performance Assessment Report which would have been prepared during month 10 and 11 of the prospecting period:
  - The state of access roads in respect of erosion.
  - The state of the tracks used through the veld in terms of vegetation recovery, erosion or alien vegetation growth.
  - The state of the drill-hole and trial-pit sites in terms of their vegetation recovery, backfill, erosion and alien vegetation growth.
  - General inspection of the areas where activities took place for any residual oil spillage, residual litter

Such assessments can be conducted against the photographic record of the pre-disturbance condition as contemplated in the photographic recordal in paragraph 8.

In the event of any of the above being found to be outstanding:

- (ii) Conduct the required visits to remedy the identified matters.

In fact the above would take place by sending an Environmental Officer with a team of two persons equipped with shovels, rakes and slashing tools to conduct the required remedial treatments found lacking during the site assessment.

## 16.0 ENVIRONMENTAL MONITORING AND PERFORMANCE

Upon approval of the Prospecting Programme the Applicant is to compile an Environmental Performance Assessment (Monitoring Plan) according to which the conducting of the prospecting activities can be monitored during their execution and reported on to the DMR at 4-monthly intervals during the Prospecting Programme.

The questions asked in such Environmental Performance Assessment will derive directly from the undertakings in this EM Plan and its specifications for attenuation measures. The typical layout and questions are shown by example extract from another Environmental Performance Assessment Report below.

### EPA EXTRACT:

7	Topsoil	Remove topsoil from excavation and access adit site	3.2	Done. Topsoil stockpiles were in evidence around all disturbed areas. Refer photos 2, 3 and 4.	Yes
8	Topsoil	Topsoil to be removed to 300mm depth	3.2	Done. Pers comm. with Mr. K Govender	Yes
9	Vegetation	Remove vegetation along with topsoil to berms	3.2	Done	Yes
10	Topsoil	Remove topsoil from overburden dump site	3.2	Done. Topsoil stockpiles were in evidence around the dump (Refer photos 2, 3 and 4)	Yes

## 17.0 PARTICIPATION

The participation process was initiated by the Applicant who notified and consulted with the landowner of the property, Dr J P Mildenhall, and four of the adjacent landowners as contained in the table in Annexure A.

Through such process the Applicant only received one objection namely that from Stutt Quarries, who objected on the grounds that Stutt Quarries had applied for a Mining Permit on the old contract quarry site of the adjacent farms 141 & 142 and that they contest that the market could not support two quarries as they assume that the current prospecting would be successful and lead to the establishment of a quarry.

Our response to this objection will be fully tabled to the RMDEC Committee Meeting of 16 February 2010 and rests on the following basic grounds:

- That Stutt Quarries took a short-term perspective in applying for the re-use of the road contract quarry given the advantages offered by an existing excavation in respect of start-up costs. They however limited their application to a 1,5ha Mining Permit and to our knowledge have no evidence of any larger reserve having been proven for the development of their site but they simply relied on the rock exposed in the faces of the quarry.

- We do not believe that they have the right to object on direct competition as this would be contrary to the Competitions Act.
- By contrast Amatola Quarry Products CC has a long-term vision to establish a commercial quarry (albeit small) to serve Fort Beaufort and the surrounding towns and their road and canal infrastructure under a Mining Right which entails a commitment to the underprivileged through contributions by the Social and Labour Plan under a Mining Right.

In order to avoid any criticism of the participatory process in terms of reaching the general public, Site Plan Consulting have since their engagement in the project placed an legal notice in the Fort Beaufort Advocate, the Cradock Courant and the Winterberg Nuus notifying the broad public of the application and inviting them to make comment based on the brief description in the notice or otherwise contact Site Plan Consulting for further detail which would assist them in considering their position in relation to the quarry.

As we have allowed a comment period of two weeks the cut-off date for response to the notice is 25 February 2010.

See copy of the notice in the Participation documentation in Annexure A.

#### **18.0 HERITAGE IMPACT ASSESSMENT**

The Applicant commissioned specialist assessments in respect of both the archaeological heritage impact and the palaeontological impact. These were conducted by Dr Johan Binneman of Eastern Cape Heritage Consultants and Dr John E Almond of Natura Viva CC respectively.

Both studies concluded that the prospecting phase be exempt from a full Phase I Archaeological Heritage and Palaeontological Impact Assessment but went on to describe the nature of archaeological material which may be found, how to identify these if found and to retain them for reporting.

The full specialist reports are contained in Annexures B and C.

#### **19.0 INDUCTION ENVIRONMENTAL TRAINING**

As the EMP in numerous chapters calls for training of the staff in environmental awareness, we have included an Environmental Awareness Training Guideline to be offered by each contractor to his staff prior to commencing work on site in the form of an Induction Training Session.

Such Induction Environmental Training Guideline is contained in Annexure E.

## 20.0 FINANCIAL COST ANALYSIS DETAILING REHABILITATION

The following costs are derived from the implementation of attenuation measures as contained in the TABLE OF IMPACTS AND ATTENUATION MEASURES in paragraph 11.1.

	On-Site Costs	Off-Site Environmental Management Assistance Costs
Labour cost of raking drilling damage	R 500.00	
Hire of mobile toilet	R 3 000.00	
Labour cost of raking digger-loader damage	R 400.00	
Provision for waste drum and disposal	R 100.00	
Provision for oil spill treatment	R 2 000.00	
Pre-site establishment demarcation visit		R 7 000.00
Environmental Performance Assessment		R 8 000.00
Closure cost		R 4 000.00
<b>Sub Total – Local Costs</b>	<b>R 6 000.00</b>	
<b>Sub Total – Professional Assistance</b>		<b>R19 000.00</b>
<b>Sub Total</b>	<b>R 25 000.00</b>	
<b>Plus VAT (14%)</b>	<b>R 3 500.00</b>	
<b>TOTAL Prospecting Rehabilitation Fund</b>	<b>R 28 500.00</b>	



