

**A PHASE 1 ARCHAEOLOGICAL FOR THE PROPOSED UPGRADE OF THE NATIONAL ROUTE R61 SECTION 2 BETWEEN DRAAIRIVER (km 29,4) AND ELINUS FARM (km 42,2) AND THREE BORROW PITS (BPA, Q3, and BPE) NEAR CRADOCK, EASTERN CAPE PROVINCE**

Prepared for: SRK Consulting  
P.O. BOX 21842  
Port Elizabeth  
6000  
Tel: 041 509 4800  
Fax: 041 509 4850  
Contact person: Ms Tamarin Arthur  
Email: TArthur@srk.co.za

Compiled by: Ms Celeste Booth  
Department of Archaeology  
Albany Museum  
Somerset Street  
Grahamstown  
6139  
Tel: (046) 622 2312  
Fax: (046) 622 2398  
Contact person: Ms. Celeste Booth  
celeste.booth@ru.ac.za

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Note: This report follows the minimum standard guidelines required by the South African Heritage Resources Agency for compiling a Phase 1 Archaeological Impact Assessment (AIA).

### EXECUTIVE SUMMARY

#### Purpose of the Study

The purpose of the study was to conduct a phase 1 archaeological impact assessment (AIA) for the proposed upgrade of the national route R61 Section 2 between Draairiver (km 29,4) and Elinus Farm (km 42,2) and three borrow pits (BPA, Q3 and BPE) on the Farms Groenvallei 225 (BPA and Q3) and Moskuilen 320 (BPE), near Cradock, Eastern Cape Province. The survey was conducted to establish the range and importance of the exposed and *in situ* archaeological heritage materials and features, the potential impact of the development and, to make recommendations to minimize possible damage to these sites.

#### Brief Summary of Findings

The survey for the proposed upgrade of the national route R61 Section 2 between Draairiver (km 29,4) and Elinus Farm (km 42,2) was limited to the 12.8km stretch within the road reserve. No archaeological material remains, sites, or features were documented within this area. Borrow Pit A (BPA) and Quarry 3 (Q3) located on the Farm Groenvallei 225 are the existing borrow pits proposed for extension. No archaeological material remains, sites, or features were documented within these areas. Borrow Pit E (BPE) located on the Farm Moskuilen 320 is the existing borrow pit proposed for extension. Two Middle Stone Age (MSA) stone artefacts were documented within the vicinity of the existing borrow pit.

#### Recommendations

The proposed areas are of a low cultural sensitivity and development may proceed as planned, although the following recommendations must be considered:

1. If concentrations of archaeological heritage material and human remains are uncovered during construction, all work must cease immediately and be reported to the Albany Museum (046 622 2312) and/or the South African Heritage Resources Agency (SAHRA) (021 642 4502) so that systematic and professional investigation/excavation can be undertaken.
2. Construction managers/foremen should be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites.

## BACKGROUND INFORMATION

The phase 1 archaeological impact assessment (AIA) report is required for the environmental impact assessment (EIA).

Developer:

South African National Roads Agency Limited (SANRAL)

Consultant:

SRK Consulting

P.O. BOX 21842

Port Elizabeth

6000

Tel: 041 509 4800

Fax: 041 509 4850

Contact person: Ms Tamarin Arthur

Email: TArthur@srk.co.za

## Terms of Reference

The purpose of the study was to conduct a phase 1 archaeological impact assessment (AIA) for the proposed upgrade of the national route R61 Section 2 between Draairiver (km 29,4) and Elinus Farm (km 42,2) and three borrow pits (BPA, Q3 and BPE) on the Farms Groenvallei 2 25 (BPA and Q 3) and Mooskuilen 3 20 (BPE), near Cradock, Eastern Cape Province. The survey was conducted to establish the range and importance of the exposed and *in situ* archaeological heritage materials and features, the potential impact of the development and, to make recommendations to minimize possible damage to these sites.

## BRIEF LEGISLATIVE REQUIREMENTS

Parts of sections 35(4), 36(3) and 38(1) (8) of the National Heritage Resources Act 25 of 1999 apply:

### *Archaeology, palaeontology and meteorites*

35 (4) No person may, without a permit issued by the responsible heritage resources authority—

- (a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;
- (b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;

- (d) *bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.*

#### **Burial grounds and graves**

36. (3) (a) *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.*

#### **Heritage resources management**

38. (1) *Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorized as -*

- (a) *the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;*
- (b) *the construction of a bridge or similar structure exceeding 50m in length;*
- (c) *any development or other activity which will change the character of the site -*
- (i) *exceeding 5000m<sup>2</sup> in extent, or*
  - (ii) *involving three or more erven or subdivisions thereof; or*
  - (iii) *involving three or more erven or divisions thereof which have been consolidated within the past five years; or*
  - (iv) *the costs of which will exceed a sum set in terms of regulations by SAHRA, or a provincial resources authority;*
- (d) *the re-zoning of a site exceeding 10 000m<sup>2</sup> in extent; or*
- (e) *any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must as the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.*

## BRIEF ARCHAEOLOGICAL BACKGROUND

### Literature review

The Early Stone Age spans a period of between 1.5 million and 250 000 years ago and refers to the earliest that *Homo sapiens sapiens* predecessors began making stone artefacts. The Acheulian Industry which replaced the Olduvian Industry approximately 1.5 million years ago is attested to in diverse environments and over wide geographical areas. The hallmark of the Acheulian Industry is its large cutting tools (LCTs or bifaces), primarily handaxes and cleavers. The end products were astonishingly similar across the geographical and chronological distribution of the Acheulian techno-complex: large flakes that were suitable in size and morphology for the production of handaxes and cleavers perfectly suited to the available raw materials (Sharon 2009). Early Stone Age stone artefacts endure for long periods and generally occur as open air surface scatters either as isolated occurrences or in large quantities and very rarely in association with other archaeological heritage, plant and material remains. The Albany Museum database includes records of occurrences of Acheulian handaxes between Middelburg and the Camdeboo National Park near Graaff-Reinet, Sampson (1985) located a large number of sites and there is also a collection in the Albany Museum from the Cradock area.

The large Early Stone Age handaxes and cleavers were replaced by smaller stone tools called the Middle Stone Age flake and blade industries. The Middle Stone Age spans a period from 250 000-30 000 years ago and focuses on the emergence of modern humans through the change in technology, behaviour, physical appearance, art, and symbolism. Various stone artefact industries occur during this time period, although less is known about the time prior to 120 000 years ago, extensive systemic archaeological research is being conducted on sites across southern Africa dating within the last 120 000 years (Thompson & Marean 2008). Surface scatters of these flake and blade industries occur widespread across southern Africa although rarely with any associated botanical and faunal remains. 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 MSA occurrences. These stone artefacts, like the Earlier Stone Age handaxes are usually observed in secondary context with no other associated archaeological material. The Albany Museum database holds records of the occurrence of Middle Stone Age stone artefacts around the Cradock area and the Department of Archaeology has curated Middle Stone Age stone artefacts in its collection from the Cradock area including Highlands Rock Shelter excavated by H.J. Deacon during the 1970's. Relevant archaeological impact assessments conducted by the Archaeology Contracts Office of the National Bloemfontein Museum in 2006 (Van Ryneveld & Koortzen 2006) and the Albany Museum in 2008 have recorded surface scatters of Middle Stone Age stone artefacts in the Cradock vicinity (Binneman & Booth 2008). Middle Stone Age stone artefacts (long blades and points) are found throughout the region, but because these are found in the open areas it is difficult to know where they fit into the cultural time sequence. At Highlands Rock Shelter MSA stone artefacts, possibly a Howieson's Poort Industry, was dated older than 30 000 years (Deacon 1976). 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.

The Later Stone Age spans a period from 30 000 years ago to the historical period (the last 500 years) until 1 000 years ago and is associated with the archaeology of San hunter-gatherers. 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 and often covered by vegetation and sand and those along the coast are sometimes opened and closed by the movement of the dunes. Sometimes these sites are only represented by a few stone artefacts and fragments of bone. The preservation of these sites is poor and it is not always possible to date them (Deacon & Deacon 1999). Caves and rock shelters, however, in most cases, provide a more substantial preservation record of pre-colonial human occupation.

Some 2 000 years ago Khoekhoen pastoralists entered into the region and lived mainly in small settlements. 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. 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. Precolonial groups collected the freshwater mussel from the muddy banks of the rivers as a source of food. Mixed with the shell and other riverine and terrestrial food waste are also cultural materials. Human remains are often found buried in the middens along the coast (Deacon and Deacon 1999)

In general little systematic archaeological research and regional surveys/recordings have been conducted in the Cradock area. The only systematic survey and recording in the immediate vicinity was conducted in the Mountain Zebra National Park (Brooker 1974) and H.J. Deacon (1976) excavated Highlands Rock Shelter some 50-60 km to the north-east. Sampson's, Brooker's, and Deacon's research and surveys, together with records/collections of the Albany Museum, provide the background information for compiling an archaeological time sequence for the region. The LSA deposits at Highlands Rock Shelter date to 4 500 years old (Deacon 1976). Better preservation of organic material at Highlands Rock Shelter provides some insight into hunter-gatherer subsistence in the area. Collecting of underground plant remains such as *Cyperus usitatus* and *Freezia corymbrosa* would appear to have been an important food source together with the hunting of mountain zebra/quagga, mountain reedbuck, warthog and various small antelope such as duiker, klipspringer and steenbok. The survey of the Mountain Zebra National Park (Brooker 1974) confirmed that the area is rich in archaeological remains and that some of the LSA time sequence for the region was present, as well as rock art. Unfortunately no rock engravings were found to compare with that of Samekoms, but there is another engraved and painted site listed in the Albany Museum records, only a few kilometres away. Unfortunately, apart from the stone tools, little else is preserved and it is not possible to reconstruct subsistence

patterns. Also listed in the museum records are freshwater shell middens along the banks of the Great Fish River and small quantities of crab and freshwater mussel were also found in the excavations. Many stock enclosures with stone walls and fragments of sand-tempered ceramic vessels are found throughout the Seacow River area and are most probably associated with Khoi pastoralists who settled in the area during the past 1 000 years.

Rock art is generally associated with the Later Stone Age period mostly dating from the last 5000 years to the historical period. It is difficult to accurately date the rock art without destructive practices. The southern African landscape is exceptionally rich in the distribution of rock art which is determined between paintings and engravings. Rock paintings occur on the walls of caves and rock shelters across southern Africa. Rock engravings, however, are generally distributed on the semi-arid central plateau, with most of the engravings found in the Orange-Vaal basin, the Karoo stretching from the Eastern Cape (Cradock area) into the Northern Cape as well as the Western Cape, and Namibia. At some sites both paintings and engravings occur in close proximity to one another especially in the Karoo and Northern Cape. The greatest concentrations of engravings occur on the andesite basement rocks and the intrusive Karoo dolerites, but sites are also found on about nine other rock types including dolomite, granite, gneiss, and in a few cases on sandstone (Morris 1988).

## References

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- Van Ryneveld, K & Koortzen, C. 2006. Borrow Pit 76.0 Quarry impact on archaeological "Michausdal" deposits, Cradock District, Eastern Cape, South Africa.



## DESCRIPTION OF THE PROPERTY

### Area surveyed

### Location data

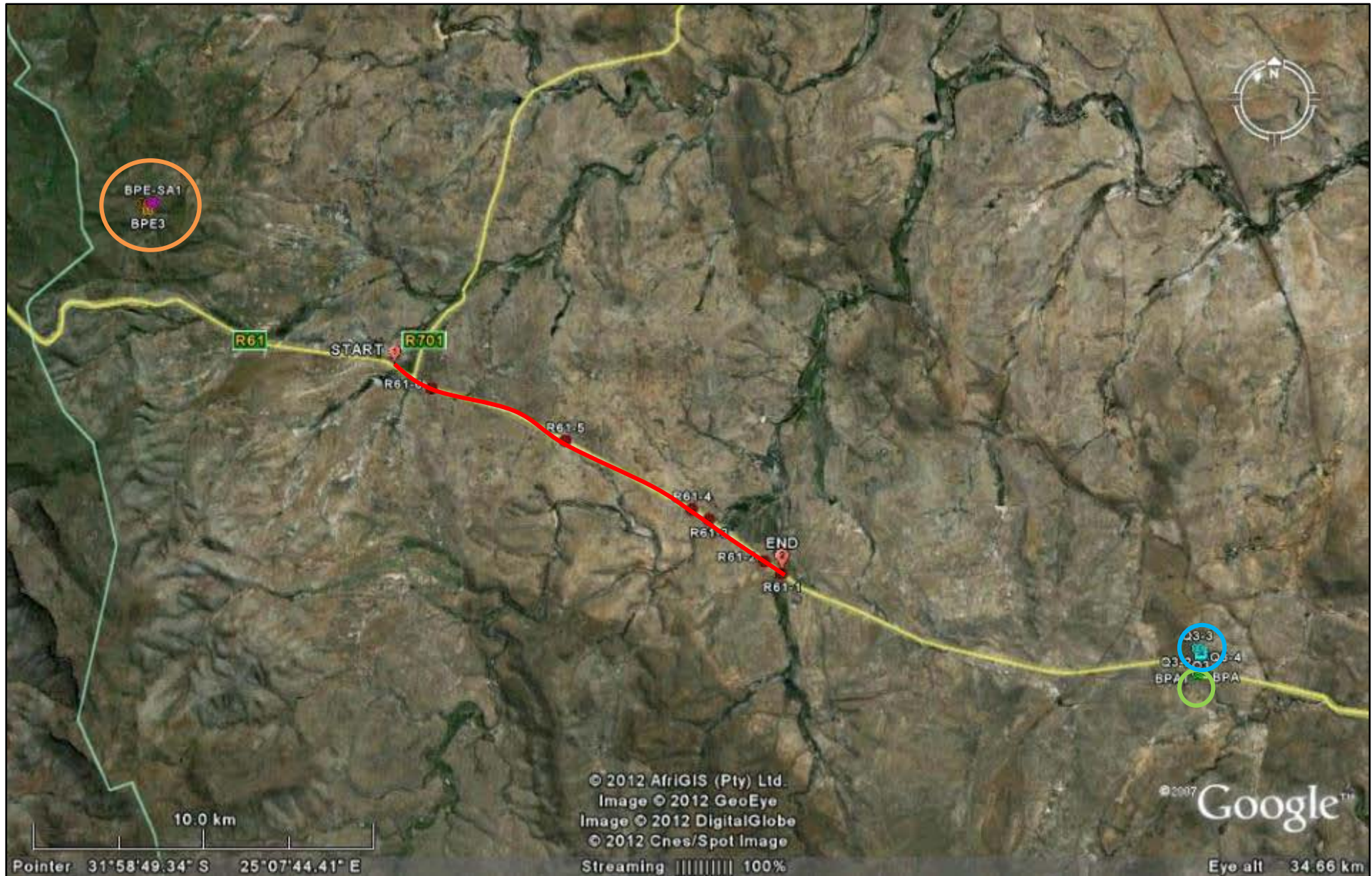
The 12.8km of the national route R61 Section 2 runs east-west between the N9 and N10 national routes and stretches from Bethesdagweg on Route N9 and south of the Lootsberg Pass to Route N10, north of Cradock (Maps 1-3). Borrow Pit A (BPA) and Quarry 3 (Q3) are situated 12.5km to the east of the END (km 42,2) of Section 2 of the R61 on the Farm Groenvallei 225. BPA is situated between 30m-50m south of the R61 and Q3 is situated to the north of BPA approximately 175m from the R61. Borrow Pit E (BPE) is situated on the Farm Moskuilen 320 approximately 10km north-west of the START (km 29,4) of Section 2 of the R61, and 2.7km north of the R61, located at the south-eastern extremity of the Sneeuberge.

### Map

1:50 000 Maps: 3124DD LOOTSBERG, 3125CC SPITSKOPVLEI, 3125CD VISRIVIER, 3224BB LETSKRAAL, 3225AA KAREEFONTEIN, 3225AB POST CHALMERS,



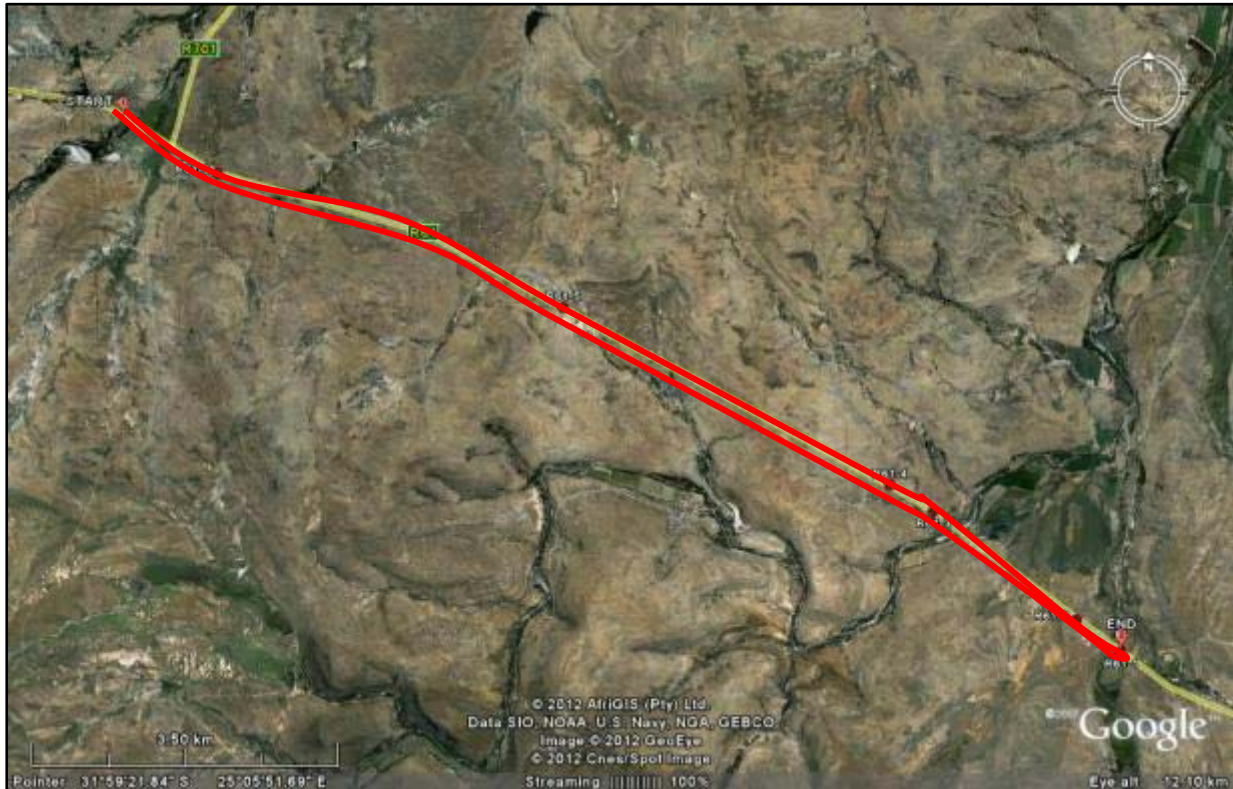
Map 1. Aerial view of the location of the upgrade of the national route R61 Section 2 and three borrow pits (BPA, Q3 and BPE).



Map 2. Close-up aerial view of the location of the upgrade of the national route R61, Section 2 and three borrow pits (BPA, Q3 and BPE).

## ARCHAEOLOGICAL INVESTIGATION

### UPGRADE OF THE NATIONAL ROUTE R61 SECTION 2 BETWEEN DRAAIRIVER (KM 29,4) AND ELINUS FARM (KM 42,4):



Map 3. Extent of the road upgrade of the national route R61, Section 2, between Draairiver (km 29,4 [START]) and Elinus Farm (km 42,2 [END]) showing the survey track (red line) followed.

The survey was limited to within the 12.8km road reserve and was carried out by conducting spot checks from a vehicle. Disturbed and exposed areas were investigated for possible archaeological material remains, sites, and features. Rocky outcrops that occurred within the road reserve and extended away from the road reserve were also investigated. GPS coordinates were recorded by using a Garmin Oregon 550 unit and have been plotted on Map 3. The co-ordinates reflect general readings along the route.

The area within the road reserve has been heavily disturbed by the construction and continued maintenance of the road as well as the construction of associated road infrastructure such as water channels, bridges, and picnic spots. Scatters and piles of the gravels remain within the road reserve. Vegetation cover comprises relatively dense grass vegetation in some areas (Figures 1-5). No archaeological material remains, sites, or features were observed within the road reserve.



Figure 1. Example of an exposed area within the road reserve.



Figure 2. Example of a rocky outcrop extending beyond the road reserve.



Figure 3. Example of road associated road infrastructure (water channels).



Figure 4. Example of associated road infrastructure (bridges).



Figure 5. Example of other disturbances within the road reserve (picnic spots and sign boards).

#### BORROW PIT A (BPA):



Map 4. Aerial close-up view of Borrow Pit A (BPA) showing the general survey track (green line) followed (insert map shows the extent of Quarry 3 (Q3) to BPA).

Borrow Pit A (BPA) is an existing borrow pit approximately 100m x 80m in extent, situated between 30m-50m in south of the R 61 on the Farm Groenvallei 225. The survey was conducted on foot by investigating the existing borrow pit, the koppie (low dolerite hill), and exposed surfaces within the surrounding area. GPS co-ordinates were recorded by using a Garmin Oregon 550 unit. The GPS co-ordinates reflect general readings and have been plotted on Map 4.

Vegetation cover comprises dense grass vegetation and bush clumps toward the south. A koppie (low dolerite hill) is situated to the south-west of the existing borrow pit and farm gravel road (Figures 6-9). No archaeological material remains, sites or features were documented within the area.



Figure 6. View of the vegetation cover and koppie (low dolerite hill) south of BPA and the farm gravel road.



Figure 7. View of the vegetation cover and exposed surface areas within the farm gravel road.





Figure 8. View from within Borrow Pit A (BPA).



Figure 9. View from within Borrow Pit A (BPA).

## QUARRY 3 (Q3):



Map 5. Aerial close-up view of Quarry 3 (Q3) showing the general survey track followed (blue line) (insert map shows the extent of Borrow Pit A (BPA) to Q3).

Quarry 3 (Q3) is an existing borrow pit / quarry approximately 160m x 190m in extent, situated about 175m north of the R61 on the Farm Groenvallei 225. The survey was conducted on foot by investigating the existing borrow pit / quarry, exposed surfaces within the surrounding area, and the four surrounding koppies (low dolerite hills) that extend south to north to the west of the existing borrow pit / quarry area. GPS co-ordinates were recorded by using a Garmin Oregon 550, reflect general readings and have been plotted on Map 5. Vegetation cover comprises grass vegetation with a few bush clumps within the borrow pit / quarry area (Figures 11-14). No archaeological material remains, sites or features were documented within the area.



Figure 11. View of the landscape and exposed surface areas within the farm gravel road.



Figure 12. View of the vegetation cover and koppies (low dolerite hills) surrounding the existing borrow pit / quarry area.



Figure 13. View from within Quarry 3 (Q3).



Figure 14. View from within Quarry 3 (Q3).

## BORROW PIT E (BPE):



Map 6. Aerial close-up view of Borrow Pit E B (BPE) showing the general survey track followed (orange line) and location of stone artefacts.

Borrow Pit E ( BPE) is an existing borrow pit approximately 70m x 75m in extent, situated about 2.7km north of the R61 on the Farm Moskuilen 320 at the south-eastern most echelon of the Sneeuberg Mountain range. The survey was conducted on foot by investigating the existing borrow pit and exposed surfaces within the surrounding area. GPS co-ordinates were recorded by using a Garmin Oregon 550 unit and have been plotted on Map 6. Vegetation cover comprises dense grass vegetation. Bush clumps and weathered dolerite boulders occur south and south-west of the existing borrow pit (Figures 15-17).

Two Middle Stone Age (MSA) stone artefacts were documented within the surrounding area of the existing borrow pit situated at the areas marked (BPE-SA1 and BPE-SA2) (see Table 1 for co-ordinates). The stone artefacts comprised a blade-like flake on a shale raw material and a broken proximal flake blade on a quartzite raw material. It is unlikely that the stone artefacts occur *in situ* and, therefore occur in a disturbed and secondary context. No other archaeological remains or depth of deposit was observed in association with the two isolated stone artefacts scatters. No larger surface scatter of stone artefacts was observed.



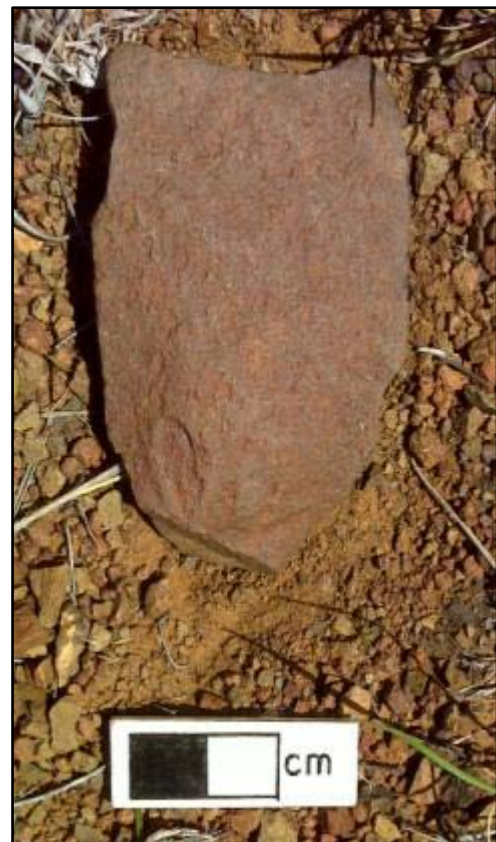
Figure 15. View of the general landscape.



Figure 16. View of the landscape and exposed surface area at BPE-SA1.



Figure 17. View of the landscape and exposed surface area at BPE-SA2.



Figures 18-19. Middle Stone Age (MSA) stone artefacts documented within the surrounding area of Borrow Pit E (BPE).

## SURVEY/DESCRIPTION OF SITES

Only two isolated Middle Stone Age stone artefacts were documented on the Farm Moskuilen 320 within the vicinity of Borrow Pit E (BPE). No other archaeological remains or depth of deposit was observed in association with the two isolated stone artefacts scatters. It is unlikely that the stone artefacts occur *in situ* and, therefore occur in a disturbed and secondary context.

## RECOMMENDATIONS

The area is of a low cultural sensitivity and development may proceed as planned, although the following recommendations must be considered:

1. If concentrations of archaeological heritage material and human remains are uncovered during construction, all work must cease immediately and be reported to the Albany Museum (046 622 2312) and/or the South African Heritage Resources Agency (SAHRA) (021 642 4502) so that systematic and professional investigation/excavation can be undertaken (see Appendix A for a list of possible archaeological sites that may be found in the area).
2. Construction managers/foremen should be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites.



TABLE 1: GPS CO-ORDINATES AND SITES

REFERENCE	DESCRIPTION	CO-ORDINATES
<b>R61 SECTION 2 ROAD UPGRADE</b>		
R61-START	Beginning of Section 2 of R61 road upgrade	31° 57' 36.40"S; 25° 02' 15.90"E (co-ordinates supplied)
R61-1	General reading - disturbed / bridge / water channels	31° 00' 55.70"S; 25° 09' 27.40"E
R61-2	General reading - disturbed / built	31° 00' 44.80"S; 25° 09' 09.30"E
R61-3	General reading - built-up edges	31° 00' 04.40"S; 25° 08' 07.40"E
R61-4	General reading - gravel dumps on side road	31° 59' 54.70"S; 25° 07' 48.40"E
R61-5	General reading - picnic spot	31° 58' 48.50"S; 25° 05' 20.80"E
R61-6	General reading - disturbed within road reserve	31° 57' 58.00"S; 25° 02' 56.90"E
R61-END	End of Section 2 of R61 road upgrade	32° 00' 55.70"S; 25° 09' 28.80"E (co-ordinates supplied)
<b>QUARRY 3 (Q3)</b>		
Q3	Proposed Quarry 3	32° 02' 13.60"S; 25° 17' 18.50"E (co-ordinates supplied)
Q3-1	General reading	32° 02' 15.20"S; 25° 17' 21.30"E
Q3-2	General reading	32° 02' 18.10"S; 25° 17' 18.40"E
Q3-3	General reading	32° 02' 10.20"S; 25° 17' 14.90"E
Q3-4	General reading - concrete block	32° 02' 13.60"S; 25° 17' 18.60"E
Q3m	Centre of existing quarry	32° 02' 17.60"S; 25° 17' 17.70"E
<b>BORROW PIT A (BPA)</b>		
BPA	Proposed Borrow Pit A	32° 02' 32.70"S; 25° 17' 21.00"E (co-ordinates supplied)
BPA-1	General reading - at koppie	32° 02' 34.00"S; 25° 02' 15.90"E
BPA-2	General reading	32° 02' 33.30"S; 25° 17' 15.18"E
BPAm	Centre of existing Borrow Pit	32° 02' 34.00"S; 25° 17' 20.00"E
<b>BORROW PIT E (BPE)</b>		
BPE	Proposed Borrow Pit E	31° 55' 01.20"S; 24° 57' 42.40"E (co-ordinates supplied)
BPE-1	General reading	31° 55' 00.00"S; 24° 57' 41.20"E
BPE-2	General reading	31° 54' 59.60"S; 24° 57' 33.40"E
BPE-3	General reading -at boulders	31° 55' 06.20"S; 24° 57' 40.40"E

BPEm	Centre of existing borrow pit	31° 55'00.30"S; 24° 57'44.60"E
BPE-SA1	Exposed SA area	31° 54'59.20"S; 24° 57'46.00"E
BPE-SA2	Exposed SA area	31° 55'00.20"S; 24° 57'39.90"E

## GENERAL REMARKS AND CONDITIONS

Note: This report is a phase 1 archaeological heritage impact assessment/ investigation only and does not include or exempt other required heritage impact assessments (see below).

The National Heritage Resources Act (Act No. 25 of 1999, section 35) (Brief legislative requirements) requires a full Heritage Impact Assessment (HIA) in order that all heritage resources, that is, all places or objects of aesthetics, architectural, historic, scientific, social, spiritual linguistic or technological value or significance are protected. Thus any assessment should make provision for the protection of all these heritage components, including archaeology, shipwrecks, battlefields, graves, and structures older than 60 years, living heritage, historical settlements, landscapes, geological sites, palaeontological sites and objects.

It must be emphasized that the conclusions and recommendations expressed in this archaeological heritage sensitivity investigation are based on the visibility of archaeological sites/features and may not therefore, reflect the true state of affairs. Many sites/features may be covered by soil and vegetation and will only be located once this has been removed. In the event of such finds being uncovered, (such as during any phase of construction work), archaeologists must be informed immediately so that they can investigate the importance of the sites and excavate or collect material before it is destroyed. The onus is on the developer to ensure that this agreement is honoured in accordance with the National Heritage Act No. 25 of 1999.

It must also be clear that Archaeological Specialist Reports (AIAs) will be assessed by the relevant heritage resources authority. The final decision rests with the heritage resources authority, which may grant a permit or a formal letter of permission for the destruction of any cultural sites.

## APPENDIX A: IDENTIFICATION OF ARCHAEOLOGICAL FEATURES AND MATERIAL FROM INLAND AREAS: guidelines and procedures for developers

### 1. Human Skeletal material

Human remains, whether the complete remains of an individual buried during the past, or scattered human remains resulting from disturbance of the grave, should be reported. In general the remains are buried in a flexed position on their sides, but are also found buried in a sitting position with a flat stone capping and developers are requested to be on the alert for this.

### 2. Freshwater mussel middens

Freshwater mussels are found in the muddy banks of rivers and streams and were collected by people in the past as a food resource. Freshwater mussel shell middens are accumulations of mussel shell and are usually found close to rivers and streams. These shell middens frequently contain stone tools, pottery, bone, and occasionally human remains. Shell middens may be of various sizes and depths, but an accumulation which exceeds 1 m<sup>2</sup> in extent, should be reported to an archaeologist.

### 3. Stone artefacts

These are difficult for the layman to identify. However, large accumulations of flaked stones which do not appear to have been distributed naturally should be reported. If the stone tools are associated with bone remains, development should be halted immediately and archaeologists notified

### 4. Fossil bone

Fossil bones may be found embedded in geological deposits. Any concentrations of bones, whether fossilized or not, should be reported.

### 5. Large stone features

They come in different forms and sizes, but are easy to identify. The most common are roughly circular stone walls (mostly collapsed) and may represent stock enclosures, remains of wind breaks or cooking shelters. Others consist of large piles of stones of different sizes and heights and are known as *isisivane*. They are usually near river and mountain crossings. Their purpose and meaning is not fully understood, however, some are thought to represent burial cairns while others may have symbolic value.

### 6. Historical artefacts or features

These are easy to identified and include foundations of buildings or other construction features and items from domestic and military activities.