

5 BACKGROUND STUDY

5.1 Natural Environment

The area is characterised as belonging to the Eastern Highveld Grassland of the Grassveld Biome. Landscape features include low hills with pan depressions and short dense grasslands dominated by the usual Highveld species: *Aristida*, *Digitaria*, *Eragostis*, *Themeda*, *Tristachya*. Scattered small rock outcrops occur where sour grasses and some woody species are found. The soils are red to yellow sandy soils of the Ba and Bb land types found on the shales and sandstones of the Madzaringwe Formation. The climate is strongly seasonal with dry winters. Rainfall in the area is approximately 650- 900 mm per annum (Mucina and Rutherford 2006).

The project area is currently dominated by cultivated maize fields and as grazing (see Figure 5-1 and Figure 5-2). Figure 5-3 illustrates the typical thick, matted grass cover that occurred over much of the project area, obscuring surface visibility.



Figure 5-1: Example of cultivated maize fields after harvesting. Surface visibility in these areas was generally good.



Figure 5-2: Example of recently ploughed fields, high visibility.



Figure 5-3: Example typical matted, dense grass cover, affecting surface visibility.



Figure 5-4: View of dense grass cover at project area

5.2 Cultural Landscape

The cultural landscape of the project area is characterised below. Background information included publications (books, peer reviewed articles), archives, databases, and relevant previous impact assessment reports.

Heritage resources identified during the desktop study falling in or near the project area are presented in Appendix B.

5.2.1 Literature review

5.2.1.1 Stone Age

The Stone Age in South Africa is divided into three periods:

- Early Stone Age (ESA) (2 million years ago - 200 000 years ago)
- Middle Stone Age (MSA) (300 000 years – 20 000 years ago)
- Later Stone Age (LSA) (20 000 years ago – 2 000 years ago)

ESA artefacts include hand axes and choppers produced from coarse grained material (See Figure 5-5).

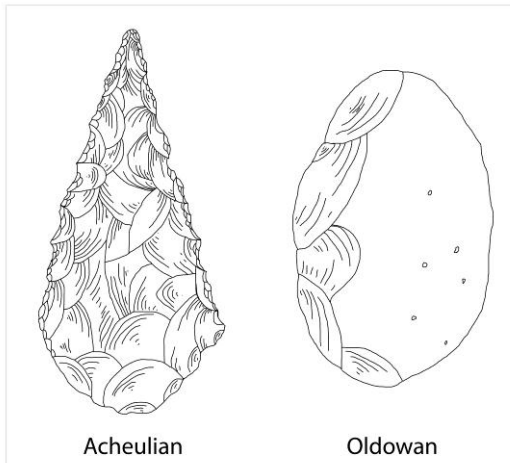


Figure 5-5: Examples of Early Stone Age lithics

MSA assemblages are characterised by blades and points produced from a finer grained material such as hornfels. Other MSA artefacts include shell beads, ochre and preserved organic remains (See Figure 5-6).

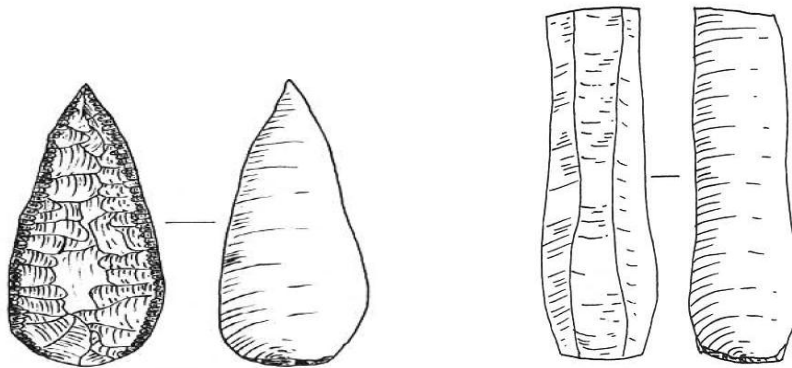


Figure 5-6: Examples of MSA points and blades (after Lombard *et al* 2012)

LSA artefacts include microliths (small tools) produced from fine grained material such as quartz (See Figure 5-7). Other artefacts include ostrich egg shell beads, pottery and rock art (Deacon and Deacon 1999).



Figure 5-7: Examples of Later Stone Age lithics (after Ouzman 2012)

MSA and LSA sites and artefacts have been recorded within Mpumalanga however very little research has been published within the project area and its surrounds (Badenhorst & Plug 2012; Klein 1984; Louw 1969). A cluster of LSA shelters are present approximately 20 km south of the project area (Hope Hill Shelter). Sites artefacts are most likely to be found near pan depressions and shelters which have been recorded for the area.

5.2.1.2 Iron Age

The Iron Age in South Africa is divided into three periods:

- Early Iron Age (200 –900 CE)
- Middle Iron Age (900 –1300 CE)
- Late Iron Age (1300 –1840 CE)

According to Maggs (1976) Type V and Type N walling are present within Mpumalanga and may be found on the slopes of hills (See Figure 5-8). Type V consists of the standard core of cattle enclosures surrounding beehive houses and grain bins. Corbelled huts may be present with this type of walling (See Figure 5-9). Type N walling consists of a few cattle kraals in the centre of the settlement, linked by other stone walling and a perimeter wall that encloses the entire settlement (Huffman 2007). No Iron Age settlements were identified to be within or around the project area during the literature review.

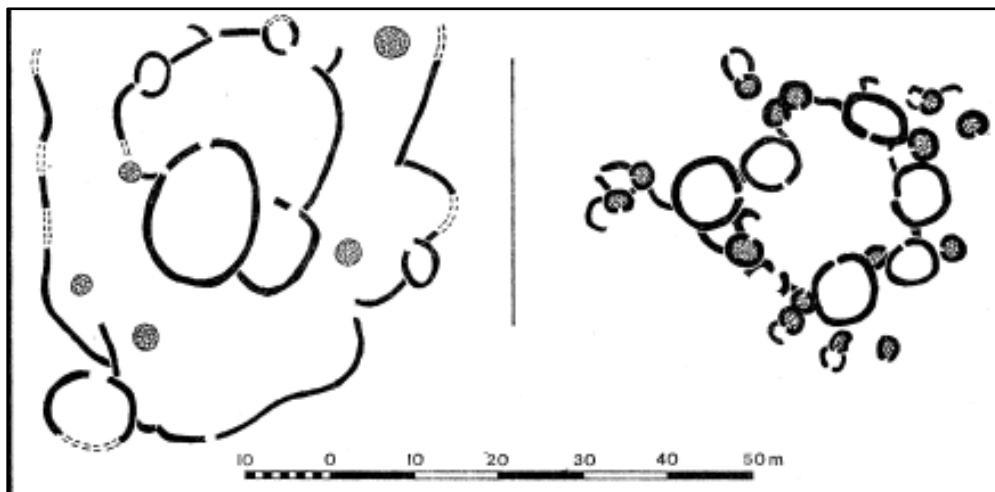


Figure 5-8: Type N and Type V settlement layouts (after Maggs 1976)

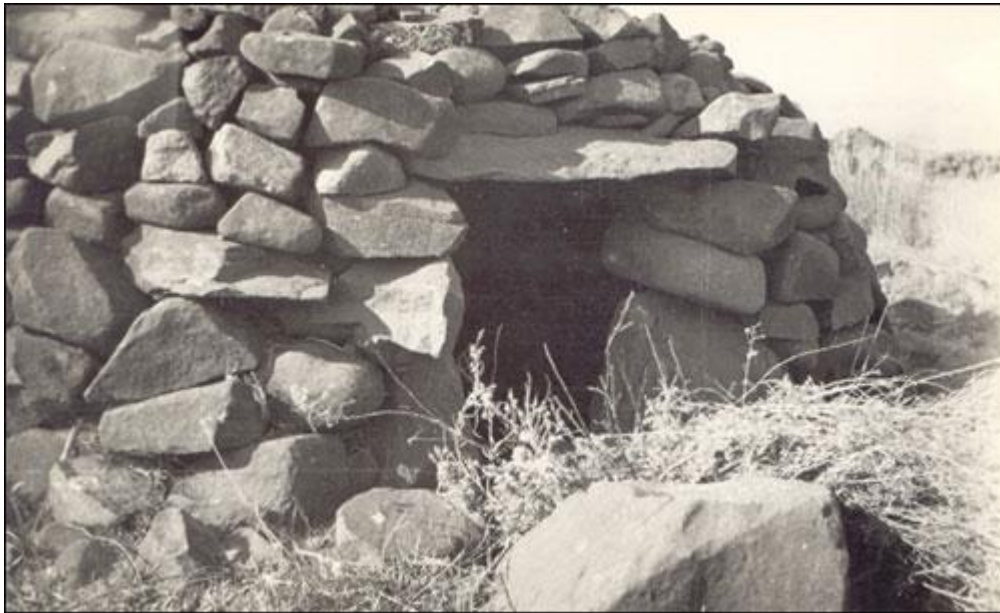


Figure 5-9: Example of a corbelled hut
(<http://www.sahistory.org.za/bloemfontein/prehistory-bloemfontein-area>)

5.2.1.3 Historical period

The Anglo-Boer (1899-1902) war spread into Mpumalanga and several battles and skirmishes occurred in the province such as at Bronkhorstspuit (45 km north of the project area) and Belfast (Grobler 2006; Oldiges 2009). There may be a potential for Anglo Boer war heritage resources in the project area.

The famous Delmas Treason Trial that was conducted from 1985 to 1989 in Delmas (± 20 km North West of the project area) was up to that date, South Africa's longest trial. Individuals from the Transvaal United Democratic Front (UDF) leaders, including Mosiuoa "Terror" Lekota (who was caught in Delmas) and Popo Molefe, were accused for treason in June (Cooper *et al* 1989).

5.2.2 Archival and database review

The following archives and databases were consulted:

- University of the Witwatersrand (WITS) Archaeological Site Database
- TAB- National Archives Repository (Public Records of former Transvaal Provinces and its predecessors as well as of magistrates and local authorities)
- South African Genealogical Database
- Chief Surveyor General

The survey of the WITS Archaeological Site Database did not yield any results for the map 2628 BB Kendal; however sites were identified on map 2628 BD Leandra. These sites include three shelters that contain Stone Age and Later Iron Age material and are located approximately 20 km south of the project area.

No archival results were found pertaining to farm Brakfontein 264 IR; however references were found to the small hamlet of Lionelton, approximately 2 km east of the project area.

The settlement was established in 1962 on the farm Dieplaagte 262 IR. There may be associated graves within the surrounding areas.

No results were identified during the South African Genealogical Database or the Chief Surveyor General survey.

5.2.3 Land claims

Additional information gathered includes a land claim on the property of Brakfontein 264 IR. According to the Commission on Restitution of Land Rights, this claim is still under investigation. It must be noted that this may have implications on the intangible heritage of the area.

5.2.4 Cartographic and aerial imagery survey

Historical aerial photographs of the project area dated 1953 were surveyed to locate any homesteads or structures that were evident in 1953. A total of 19 structures were identified on the aerial photograph in the vicinity of the project area (Figure 5-10).

The 1: 50 000 2628 BB (surveyed 1995) Kendal topographical map was used to locate any known heritage resources such as structures and graves. The map indicated several homesteads on the property. Although no burial grounds were noted on the map, experience has shown that the potential for burial grounds and graves can be expected exist near residential structures. An unknown mine is present on the adjacent property, Dieplaagte 262 IR, which is not present on the 1953 aerial photograph.

Desktop survey of aerial imagery i.e. satellite imagery, of the project area show the occurrence of a number of structures to be present within the contemporary landscape. However, stands of trees were noted. Such stands are often associated with historical settlement or burial grounds. The imagery further indicated large cultivated areas, confirmed during the physical survey, indicating relative long-term agricultural activity. These farming activities have been on-going since 1995 according to the 1:50 000 topographical map and the aerial photograph shows farming activities in the area since 1953. This increases the potential occurrence of historical burials and settlements, but also decreases the potential of identifying potential *in situ* archaeological resources.



Figure 5-10: 1: 10 000 Aerial photo (1953) showing 19 identified structures

5.2.5 Relevant previous impact assessments

The following impact assessments were reviewed:

- Pistorius, JCC. 2008. A Phase I Heritage Impact Assessment (HIA) Study for Eskom's Proposed Bravo Project on the Eastern Highveld in the Gauteng and Mpumalanga Provinces of South Africa: The Construction of Two 400kv Power Lines from Kendal Power Station to Zeus Substation. Prepared for Eskom Megawatt Park and Zitholele Consulting.
- Pelsers, A and Van der Walt, J. 2008. 1st report on the archaeological investigation of reported unidentified graves on the farm Brakfontein 264 IR near Delmas, Mpumalanga Province. Unpublished report for Zenzele Funeral Home. Archaeos, Culture and Cultural Resource Consultants: Pretoria



- Van Vollenhoven, AC. 2010. Specialist Study: Heritage Scoping (Basic Assessment) Report: Input Into EIA, IWWMP and IWULA for the Proposed Kuyasa IPP Power Generation Plant on Portions of the Farms Haverglen 269 IR And Haverklip 265 IR Near Delmas, Mpumalanga Province. Prepared for Jones & Wagener Consulting Civil Engineers: Rivonia. Archaetnos Culture and Cultural Resource Consultants.

These impact assessments identified eight heritage resources that included four grave sites, historical structures such as a homestead ruins and an old school. The resources were not located in the project area.

Test excavations were conducted by Pelsler and Van der Walt in 2008 to attempt to determine the whereabouts of possible graves within the property of Brakfontein 264 IR that had been reported by locals. This had been established through social consultations for grave relocations on the same property. Although no additional graves were found, others may exist in the project area (<http://www.archaetnos.co.za/reports.php?year>).

6 SURVEY FINDINGS

Please refer to Appendix B for a list of identified heritage resources with GPS Co-ordinates.

6.1 H001 (-26.206817 28.844832)

The site comprised an occupied and utilised farm complex, with historical components was identified at this point.

The complex consisted of a residence, workshops, and sheds, as well as cemented stonewalled cattle enclosures. A segment of stonewalling with wagon wheels were noted on the perimeter of the complex, possibly indicating an old entrance.



Figure 6-1: Cemented stonewalling around cattle pens at H001



Figure 6-2: Wagon wheel wall segment identified at H001

6.2 H002 (-26.198597 28.851158)

An unfenced burial ground comprising 43 individual graves was found. The graves were oriented east-west, in at least four rows. Eleven graves comprised formal headstones (granite and cement headstones). The dressing of nine graves comprised concrete borders. The remaining consisted of borders created with stones and/or modern bricks. Dates noted on graves with inscriptions provided a range from 1971 to 1985. Table 6-1 below provides details of headstone inscriptions.

Table 6-1: H002 headstone inscriptions¹

Name on headstone	Dates on headstone
Mokoena, Jan	19-05-1985
Mokoena	25-02-1976
Ma_ Bhuzile Ma_an	1971
Moses Skhosan	21-10-1972
Maria M_onani Wa vela	No date
Geelboy Mbotou	DoB: 23-09-1901 DoD: 01-06-1983 ²



Figure 6-3: General view of burial ground H002

¹ Underscore within a name represents an unreadable letter/s. Ellipsis represent unreadable sections of names.

² Date of Birth (DoB) and Date of Death (DoD)



Figure 6-4: Detail of grave illustrating cement border and headstone at H002



Figure 6-5: Detail of grave illustrating stone and brick border at H002. Note the upright stone indicating the head of the grave.

6.3 H003 (-26.228021 28.833039)

An unfenced burial ground comprising of 14 individual graves. Dressings comprised the following: five with cement headstones; six were bordered with stone/bricks; six framed with cement; and two were granite framed with granite headstones. The visible dates ranged from 1989 to 2000. Table 6-2 provides details of inscriptions

Table 6-2: H003 headstone inscriptions

Name on headstone	Dates on headstone
Bafana Mahlangu	DoB: 1999-11-04 DoD: 2000-06-12
Thandi Martha Mahlangu	DoB: 1966-01-11 DoD: 1989-07-03
Mariya Masielela	No date
Johannes Masielela	No date



Figure 6-6: General view of cemetery identified at burial ground H003



Figure 6-7: Example of formal burial with cement headstone at H003



Figure 6-8: Example of formal burial with embellished granite headstone at H003

6.4 H004 (-26.226793 28.861516)

An ash midden was identified on top of small cliff overlooking the Wilge River. Burnt bone and glazed ceramic fragments were found in the exposed deposit were identified within the midden. Dense grass cover hindered further observations.



Figure 6-9: Ashy midden deposit at H004. Note the glazed ceramic ware in the centre and burnt bone.



Figure 6-10: View of low hill where the midden H004 was identified. The 'hill' in the background is an overburden dump from a neighbouring mine.

6.5 H005 (-26.223485 28.841899)

An unfenced burial ground containing 62 graves was identified at this point. A total of 40 formal headstones were observed including granite, stone and cement headstones. The dates of the graves range from 1949 to 2000. Please see Table 6-3 for headstone inscriptions.

Table 6-3: H005 headstone inscriptions

Name on headstone	Dates on headstone
Joskayi Sibiya	12-10-1966
Mahlongu Denoh Tsele	1968-__-23
Betty Hlahla Wavela	26 March 1965
Stemer Ma_____	28-02-60
Joseph Mthethwa	1964
Christian Mthewa Mahamba	No date
Josaya Mazibu	No date
Isak Mashela	21-04-1973
Sepelman T Mashela	__-10-72
Boy M___hela	No date
Kwep Mashela	No date
Johanes Skaosa	1972-__-__
Joseph Ntuli	DoB: 24-1-1967 DoD: 29-7-1978
Beswa Paulos Mokwena	DoB: 05-12-1949 DoD: 7-10-2000



Figure 6-11: View of burial ground H005 looking south



Figure 6-12: View of burial ground H005 looking north



6.6 H006 (-26.222939 28.843765)

A dilapidated structure comprising of mud bricks and measuring approximately 6 m in length and 3 m in width was identified. Additional mud brick structures were also noted. Traces of blue plaster were noted on a wall of the main structure. Two middens were identified next to the structure with green glass fragments, modern bricks, glazed ceramic fragments, burnt bone, batteries and a rubber shoe. A possible stone feature was also noted next to the midden.

The site may represent historic or past labour cottage, and may also be associated with the burial ground H005 located approximately 100 m away.



Figure 6-13: Dilapidated mud brick house at H006. Arrow indicates burial ground H005.



Figure 6-14: Plaster evident on mud brick house walls at H006



Figure 6-15: Surface view of a midden identified at H006. Note modern bricks, glazed ceramic and metal fragments.



6.7 H007 (-26.21736 28.833295)

Two cylindrical brick towers with cement caps and no identified opening/entrance, approximately 8 m high were observed at this point. They are located at the end of a maize field within tall grasses. A foundation and some remaining walls were observed adjacent to the towers.



Figure 6-16: Cylindrical brick towers identified at H007



Figure 6-17: Remains of cement foundations identified at H007. Note disturbance caused by vagrants.



Figure 6-18: Remains of walls identified at H007

6.8 H008 (-26.219527 28.871661)

A fenced burial ground containing 11 graves was identified at this point. A total of five formal headstones (cement and granite) were observed and six small cement casket type graves with one large cement casket type grave were observed. The seven cement casket type graves had been placed side-by-side. The dates of the graves range from 1932 to 1978. Please see Table 6-4 for headstone inscriptions.

Table 6-4: H008 headstone inscriptions

Names on headstone	Dates on headstones
Elsie Soprua Kotze (Geb. Kruger)	DoB: 28 Sept 1858 DoD: 21 April 1938
Andries Stephanus Hartzenberg	DoB: 11 Nov 1943 DoD: 13-12-1951
Gerhardus Dirk Vorster	DoB: 1 Mei 1919 DoD: 2 Jan 1932
Gertina E.S.M Hartzenberg (Geb. Kotze)	DoB: 22-01-1897 DoD: 17-07-1978



Figure 6-19: View of burial ground identified at H008



Figure 6-20: Example of cement headstone identified at H008



Figure 6-21: Example of casket type dressing identified at H008



6.9 H009 (-26.215107 28.871236)

A small two room structure (4 m x 3 m) was observed at this point. It is a possible storage room, and might be associated with the large house identified at H010 approximately 100 m away. The structure does not have a roof and glass and metal fragments were identified in the vicinity. It may have been a pen for animals.



Figure 6-22: Small two room structure identified at H009



6.10 H010 (-26.21531 28.870071)

Two structures beside each other: a larger one structure approximately 30 m in length and 15 m wide, and a smaller one approximately 15 meters long and 10 meters wide. The larger structure consisted of an entrance hall and a three meter diameter room to the left of the entrance. The walls were constructed from modern bricks with cement plaster. A mud brick structure approximately four meters long and three meters wide existed was located near the entrance. Fragments of glass, metal and building rubble were present.



Figure 6-23: Remains of large structure identified at H010 looking north



Figure 6-24: View from the south of remains of structure identified at H010

6.11 H011 (-26.219089 28.879261)

A plastered stonewall structure measuring approximately 30 meters long and 20 meters wide was identified. The walls were constructed with a combination of daga and cement mortar. The structure comprised three large rooms divided by mud brick walls. A brick and cement structure – possibly a water tower – was located 10 m from the main structure.



Figure 6-25: Large stone walled structure with water tower identified at H011



Figure 6-26: Mud brick interior walls of structure identified at H011



Figure 6-27: Water tower (water tank missing) identified at H011

6.12 H012 (-26.219402/ 28.880292)

An unfenced burial ground was found in close association with the structure identified at H011, approximately 50 m to the south east from the structure.

This site was identified after the physical survey was completed by the soil specialist and due to time constraints, this could not be verified by the archaeologist. Approximately 9 graves were observed with cement headstones.



Figure 6-28: View of unfenced burial ground identified at H012.

7 EVALUATION OF SITE SIGNIFICANCE/VALUE

The heritage resources site significance table is summarised below in Table 7-1.

Table 7-1: Site significance assessment in terms of Section 3 of the NHRA

Site number	PARAMETER													SIGNIFICANCE
	(a) Importance	(b) Uncommon aspects	(c) Information potential	(d) Principle characteristics	(e) Aesthetic characteristics	(f) Technical / creative skill	(g) Social, cultural or spiritual association	(h) Association with life or work of a person, group or organisation	(i) Slavery	(A) Context	(B) Site integrity	(C) Extent	(D) Uniqueness	Rating (sum of A to D)
H001 (-26.206817 28.844832)	2	2	3	2	2	1	1	1	1	2	5	2	2	3
H002 (-26.198597 28.851158)	4	2	4	2	4	1	7	1	1	3	7	4	1	4
H003 (-26.228021 28.833039)	4	2	4	2	4	1	7	1	1	3	7	4	1	4
H004 (-26.226793 28.861516)	3	4	2	2	2	1	1	1	1	3	3	2	1	2
H005 (-26.223485 28.841899)	4	2	4	2	4	1	7	1	1	3	7	4	1	4
H006 (-26.222939 28.843765)	3	3	2	2	2	1	2	1	1	2	3	3	1	2
H007 (-26.21736 28.833295)	2	3	2	2	2	2	1	1	1	2	2	2	2	2
H008 (-26.219527 28.871661)	4	2	4	2	4	1	7	1	1	3	7	4	1	4
H009 (-26.215107 28.871236)	1	2	2	2	2	1	1	1	1	2	1	1	1	1
H010 (-26.21531 28.870071)	2	2	3	2	3	1	1	1	1	2	3	3	2	3
H011 (-26.219089 28.879261)	2	2	3	2	2	2	1	1	1	3	3	3	2	3
H012 (-26.219402/ 28.880292)	4	2	4	2	4	1	7	1	1	3	7	4	1	4

8 IMPACT ASSESSMENT

This section aims to assess the significance of the potential impacts (threats or sources of risk) on archaeological and heritage resources in the proposed project area. The following impact assessment was completed in compliance with the impact assessment criteria implemented for the environmental impact assessment report, as well as in accordance with significance rating and archaeological impact assessment criteria established by the Association of Southern African Professional Archaeologists (ASAPA) and applicable international best practise guidelines. More information on the archaeological impact assessment criteria and ratings used in this study and the details on the weight assigned to the various parameters for positive and negative impacts in the formula are presented in Appendix A.

The impact assessment for the heritage resource identified in the physical survey are summarised in Table 8-1 below.

Table 8-1: Impact assessment of potential risks and threats to heritage resources within the project area

Activity, Phase and Impact			Impact Rating (before mitigation)									Impact Rating (after mitigation)								
Impacted Environment	Phase impact occurs (C, O, D, PC)	Activity	Reference in EIA	Nature of Impact (positive / Negative)	Spatial Scale (7)	Duration (7)	Severity (7)	Consequence	Probability (7)	Site significance (7)	Significance (154)	Nature of Impact (positive / Negative)	Spatial Scale (7)	Duration (7)	Severity (7)	Consequence	Probability (7)	Site significance (7)	Significance (154)	
Heritage																				
H001 (-26.206817 28.844832)	N/A	No current planned construction activities		N	2	7	4	13	3	3	42	P	2	6	2	10	3	3	33	
H002 (-26.198597 28.851158)	C	Site clearing and construction, fencing, access routes, servitude		N	4	7	4	15	3	4	49	P	2	6	2	10	3	4	34	
H003 (-26.228021 28.833039)	C	Site clearing and construction, fencing, access routes, servitude		N	4	7	4	15	3	4	49	P	2	6	2	10	3	4	34	
H004 (-26.226793 28.861516)	N/A	No current planned construction activities		N	3	7	3	13	3	2	41	P	1	6	2	9	3	2	29	
H005 (-26.223485 28.841899)	C, O	Site clearing and construction, underground section, access routes, servitude		N	4	7	4	15	4	4	64	P	2	6	2	10	3	4	34	
H006 (-26.222939 28.843765)	C, O	Site clearing and construction, underground section, access routes, servitude		N	2	7	3	12	4	2	50	P	1	6	2	9	3	2	29	
H007 (-26.21736 28.833295)	N/A	No current planned construction activities		N	2	7	1	10	3	2	32	P	1	6	1	8	3	2	26	
H008 (-26.219527 28.871661)	C, O	Site clearing and construction, open cast section, access routes, servitude		N	4	7	5	16	7	4	116	P	2	6	2	10	3	4	34	
H009 (-26.215107 28.871236)	C, O	Site clearing and construction, open cast section, access routes, servitude		N	2	7	1	10	7	1	71	P	2	6	1	9	3	1	28	
H010 (-26.21531 28.870071)	C, O	Site clearing and construction, open cast section, access routes, servitude		N	2	7	2	11	7	3	80	P	2	6	1	9	3	3	30	
H011 (-26.219089 28.879261)	C, O	Site clearing and construction, open cast section, access routes, servitude		N	3	7	3	13	7	3	94	P	2	6	2	10	3	3	33	
H012 (-26.219402/ 28.880292)	C, O	Site clearing and construction, open cast section, access routes, servitude		N	4	7	5	16	7	4	116	P	2	6	2	10	3	4	34	

8.1 Construction and operational phase

As described in Table 8-1, five heritage resources will be directly impacted on by the proposed mining activities during the construction phase namely:

- H008 (burial ground) H009 (historical structure), H010 (historical structure), H011 (historical structure) and H012 (burial ground).

Secondary impacts can be expected upon H001 (historical structure), H002 (burial ground), H003 (burial ground), H004 (midden), H005 (burial ground), H006 (historical structure) and H007 (historical structure) which include structural damage resulting from blasting or vibrations, pollution from acid mine drainage or seepage, and vandalism and /or property damage due to the influx of workers.

8.2 Decommissioning and closure phase

During the decommissioning and closure phase of the project, no additional surface disturbance activities or impacts are expected. The majority of heritage resources of archaeological and heritage significance (cultural and natural) will have been recorded, assessed and mitigated or conserved in preceding phases. Conditional to the effective identification, documentation and mitigation or protection of these sites during the construction and operational phases of the project, the significance of impacts anticipated for archaeological and heritage resources during these phases are low.

In the event that mining operations continue for more than 60 years, any infrastructure constructed at the start of the project may be subjected to NHRA requirements during the decommissioning and closure phase.

8.3 Cumulative impacts

Cumulative impacts include the gradual degradation of the wider cultural landscape and associated heritage resources. This may be caused due to influx of people, the continued destruction of the historical built environment – even single sites may be valued low – and loss of sense of place.

9 MITIGATION MEASURES

Mitigation measures for the identified heritage resources are summarised in Table 9-1 below.

The current mine plan will affect four heritage sites directly. By mitigating the mine plan i.e. moving the open pit, the impact upon these resources will be greatly reduced. By mitigating, destruction of the resources will be minimised and relocation of the graves will be prevented.

If mitigation cannot take place, then a Phase 2 Archaeological/ Heritage Mitigation will be recommended.

Table 9-1: Recommended mitigation measures of heritage resources within project area

Site number, development phase and activity			Recommended mitigation	Site significance	Impact significance	Impact significance (post-mitigation)
H001 (-26.206817 28.844832)	N/A	No current planned construction activities	No mitigation required as it lies outside of proposed mine footprint. Destruction permit may be required if mine plan changes.	3	42	33
H002 (-26.198597 28.851158)	C	Site clearing and construction, fencing, access routes, servitude	No mitigation required as it lies outside of proposed mine footprint, however the cemetery should be fenced off	4	49	34
H003 (-26.228021 28.833039)	C	Site clearing and construction, fencing, access routes, servitude	No mitigation required as it lies outside of proposed mine footprint, however the cemetery should be fenced off	4	49	34
H004 (-26.226793 28.861516)	N/A	No current planned construction activities	No mitigation required as it lies in an area with no planned construction activities. Destruction permit may be required if mine plan changes.	2	41	29
H005 (-26.223485 28.841899)	C, O	Site clearing and construction, underground section, access routes, servitude	No mitigation required as it lies on the underground section, however the cemetery should be fenced off and a management plan should be developed and implemented. Access should be granted to affected families.	4	64	34
H006 (-26.222939 28.843765)	C, O	Site clearing and construction, underground section, access routes, servitude	No mitigation required as it lies on the underground section, however a destruction permit may be required	2	50	29
H007 (-26.21736 28.833295)	N/A	No current planned construction activities	No mitigation required as it lies in an area with no planned construction activities. Destruction permit may be required if mine plan changes.	2	32	26
H008 (-26.219527 28.871661)	C, O	Site clearing and construction, open cast section, access routes, servitude	Adjust mine plan as much as possible as to minimise the impact on the cemetery	4	116	34
H009 (-26.215107 28.871236)	C, O	Site clearing and construction, open cast section, access routes, servitude	Adjust mine plan as much as possible as to minimise the impact	1	71	28
H010 (-26.21531 28.870071)	C, O	Site clearing and construction, open cast section, access routes, servitude	Adjust mine plan as much as possible as to minimise the impact	3	80	30
H011 (-26.219089 28.879261)	C, O	Site clearing and construction, open cast section, access routes, servitude	Adjust mine plan as much as possible as to minimise the impact	3	94	33
H012 (-26.219402/ 28.880292)	C, O	Site clearing and construction, open cast section, access routes, servitude	Adjust mine plan as much as possible as to minimise the impact	4	116	34

10 RECOMMENDATIONS

The following recommendations are made with regards to the heritage resources identified:

- *In situ* preservation of all burial grounds and graves where:
 - A 20 m bufferzone be fenced / demarcated around each burial ground within the project area to minimise accidental damage;
 - Monitoring must be conducted on the affected burial grounds to assess any damage during blasting; and
 - Access to the burial grounds is granted to interested and affected parties (I&AP)
- Where *in situ* preservation of the burial grounds and graves is not feasible, grave relocation in terms of Section 26 of the NHRA is required.
- Burial Grounds and Graves Survey (BGGS) to pre-empt any consultation required as part of the grave relocation process. Regulation 39 of the NHRA states that every effort must be made to identify the descendants or family members of the person buried. Agreement on the future of the grave must be reached through a process of consultation. If agreement cannot be achieved, a record of the consultations and comments of all I&AP's must be submitted to the provincial heritage resources authority.
- A Phase 2 archaeological study on 004 (the ash midden) if the current mine plan changes and development activities are to occur within the vicinity of the site H004;
- Application of Destruction Permit for structures older than 60 years (H007, H009, H010 and H011), which will require:
 - Detailed mapping and recording of structures; and
 - Watching brief during destruction of structures as graves may be present around these structures.
- Chance finds procedure to be developed and implemented during ground clearance.

11 KNOWLEDGE GAPS, RESTRICTIONS AND LIMITATIONS

Although this report has been written as comprehensively and inclusive as possible, it should be noted that some heritage sites may be located on a sub-surface level. Surface visibility was also hampered by farming activities.

This report may therefore not give a full perspective of the heritage sites found within the project area and consequently chance find procedures must be implemented. This implies that an archaeologist or heritage specialist must immediately be contacted should any archaeological or heritage features be uncovered during the construction or operational phase (i.e. environmental monitoring). Such heritage features and/or objects may not be disturbed or removed in any way until such time that the specialist has been able to do an assessment of the site/object. This will include any additional structures, graves and/or burial grounds that are identified during the construction phase of the project.



12 DISCUSSION

The findings were consistent with expectations of the types of heritage resources occurring in the region. In general, the cultural landscape can be characterised as historical to recent. The identified heritage resources H001, H007, H009, H010 and H011 are confirmed to be 59 years old according to the aerial photograph dated to 1953. There is a high possibility that these structures are older than 59 years and are thus protected by legislation i.e. NHRA Section 38.

Although no evidence of earlier settlement of occupation was found, Middle and Late Stone age remains may be present, especially near water sources. Iron Age remains in this region are usually highly visible, comprising stonewalled settlements and no evidence of these were found. Sites associated with early struggle history may be present within the region such as an ANC/ Struggle safe house due to the events that occurred in 1985-1989 regarding the Delmas Trial.

All burial sites should be considered as significant on historical, social and intangible levels. These graves may have intrinsically different meanings and significance to different people and communities. Burial sites may also relate to land claims, at least one which was found pertaining to the project area. As far as possible, these sites should be managed *in situ* and protected from any impact – either direct, primary impact or secondary impact.

The impact of the project as a whole will have a low to medium impact on the cultural landscape of the area, as no regional significant heritage resources were identified during the HIA. However, a chance finds procedure should be developed and implemented during the construction phase of the project.

13 CONCLUSION

This HIA was undertaken with the aim of identifying, recording and evaluating heritage resources and impacts on those. The HIA identified 12 resources with heritage value. These included five burial grounds, six structures and two archaeological/historical sites.

Heritage resources that will be directly affected include H008 (burial ground) H009 (historical structure), H010 (historical structure), H011 (historical structure) and H012 (burial ground) due to activities such as the opencast pit. Heritage resources that will be indirectly affected include H001 (historical structure), H002 (burial ground), H003 (burial ground), H004 (midden), H005 (burial ground), H006 (historical structure) and H007 (historical structure) due to construction and operational activities.

Mitigation measures included adjustment of the impact area as far as is feasible to avoid and minimise impacts on the heritage resources identified within the proposed open cast pits so the heritage resources can be preserved *in situ*. If this is not possible, then a Burial Grounds and Graves Survey (BGGs) should be conducted of all burial grounds to collect information pertaining to the deceased and to consult with affected families if grave relocation is to occur. Other recommendations include fencing of all burial grounds (H002, H003, H005, H008, and H012), application for destruction permits for historical structures (H009, H010 and H011), and watching briefs during destruction of these heritage resources as graves may be present in the vicinity of these structures. A Phase 2 Archaeological assessment of site H004 should be conducted if the current mine plan changes and development activities should occur in the vicinity of the site

14 REFERENCES

Databases consulted:

WITS Archaeological Site Database

TAB- National Archives Repository (Public Records of former Transvaal Provinces and its predecessors as well as of magistrates and local authorities)

South African Genealogical Database

Chief Surveyor General

Relevant local impact assessments consulted:

Pistorius, JCC. 2008. A Phase I Heritage Impact Assessment (HIA) Study for Eskom's Proposed Bravo Project on the Eastern Highveld in the Gauteng and Mpumalanga Provinces of South Africa: The Construction of Two 400kv Power Lines from Kendal Power Station to Zeus Substation. Prepared for Eskom Megawatt Park and Zitholele Consulting.

Pelser, A and Van der Walt, J. 2008. 1st report on the archaeological investigation of reported unidentified graves on the farm Brakfontein 264 IR near Delmas, Mpumalanga Province. Unpublished report for Zenzele Funeral Home. Archaeos, Culture and Cultural Resource Consultants: Pretoria

Van Vollenhoven, AC. 2010. Specialist Study: Heritage Scoping (Basic Assessment) Report: Input Into EIA, IWWMP and IWULA for the Proposed Kuyasa IPP Power Generation Plant on Portions of the Farms Haverglen 269 IR And Haverklip 265 IR Near Delmas, Mpumalanga Province. Prepared for Jones & Wagener Consulting Civil Engineers: Rivonia. Archaeos Culture and Cultural Resource Consultants.

Published sources consulted:

Badenhorst, S and Plug, I. 2012. The Faunal Remains from the Middle Stone Age Levels of Bushman Rock Shelter in South Africa. *The South African Archaeological Bulletin* 67 (195): 16-31.

Cooper, C; Schindler, J; McCaul, C; Hamilton, R; Beale, M; Clemans, A; Kruger, L; Delvare, I and Moonsamy, J. G. 1989. *Race Relations Survey 1988/89*. South African Institute of Race Relations: Johannesburg.

Deacon, H. J and Deacon, J. 1999. *Human Beginnings in South Africa*. David Phillip Publishers: Cape Town.

Grobler, J. 2006. Memories of a Lost Cause: Comparing remembrance of the Civil War by Southerners to the Anglo-Boer War by Afrikaners. *Historia*, 52 (2): 199-226.

Huffman, TN. 2007. *Handbook to the Iron Age: The Archaeology of Pre-Colonial Farming Societies in Southern Africa*. Cape Town: University of KwaZulu-Natal Press

Klein, R. 1984. Later Stone Age Faunal Samples from Heuningneskrans Shelter (Transvaal) and Leopard's Hill Cave (Zambia). *The South African Archaeological Bulletin* 39 (140): 109 – 116.



Lombard, M; Wadley, L; Deacon, J; Wurz, S; Parsons, I; Mohapi, M; Swart, J and Mitchell, P. 2012. South African and Lesotho Stone Age Sequence updated (I). *The South African Archaeological Bulletin* 67 (195): 123-144.

Louw, A. W. 1969. Bushman Rock Shelter, Ohrigstad, Eastern Transvaal: A Preliminary Investigation, 1965. *The South African Archaeological Bulletin* 24 (94): 39-51.

Maggs, T. 1976. *Iron Age Communities of the Southern Highveld*. (Occasional Publication 2). Pietermaritzburg: Natal Museum.

Mucina, L & Rutherford, MC. (eds) 2006. *The vegetation of South Africa, Lesotho and Swaziland*. Strelitzia 19. South African National Biodiversity Institute: Pretoria.

Oldiges, C. 2009. *The Anglo-Boer War Respectively the South African War: An Overview* (Seminar Paper) GRIN Verlag: Germany

Websites consulted

Some Projects. <http://www.archaetnos.co.za/reports.php?year> Date accessed 17/08/2012

Ouzman, S. 2012. Museological Multi-tasking on a Rainy Day at Iziko South African Museum's Archaeology Unit. <http://www.dayofarchaeology.com/museological-multi-tasking-on-a-rainy-day-at-iziko-south-african-museums-archaeology-unit/> Date accessed 17/08/2012

Additional further readings:

Delius, P. 2007. *Mpumalanga: History and Heritage*. Durban: University of Kwa-Zulu Natal

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