Archaetnos Culture & Cultural
Resource Consultants
BK 98 09854/23

A REPORT ON A PHASE I HERITAGE IMPACT ASSESSMENT FOR PROPOSED MINING ON THE FARM KOEDOESKLOOF IN THE HAY DISTRICT, NORTHERN CAPE

For:

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2024

REPORT: **AE11109**

by:

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DISCLAIMER:

Although all possible care is taken to identify all sites of cultural importance during the survey of study areas, the nature of archaeological and historical sites are as such that it always is possible that hidden or subterranean sites could be overlooked during the study. Archaetnos and its personnel will not be held liable for such oversights or for costs incurred as a result thereof.

The South African Heritage Resources Agency (SAHRA) or one of its subsidiary bodies needs to comment on this report and clients are advised not to proceed with any action before receiving these.

SUMMARY

Archaetnos cc was appointed by Kai Batla Holdings (Pty) Ltd, on behalf of PMG Mining, to conduct a Phase 1 Heritage Impact Assessment on the farm Koedoeskloof, in the Hay District, near Griqua Town in the Northern Cape Province. The proposed mining is in prospecting phase, with a Mining Rights application to follow.

A number of sites of cultural (archaeological and historical) heritage significance, mainly dating to the Stone Age, were identified and recorded in the area. These sites will be discussed in this report. A number of recommendations regarding these sites are put forward at the end of this document.

From a Cultural Heritage point of view there is however no objection to the proposed development taking place, once the mitigation measures put forward at the end of this report have been successfully implemented.

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1. INTRODUCTION

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The client indicated the boundaries of the area to be investigated and the survey was confined to this area.

2. TERMS OF REFERENCE

The Terms of Reference for the survey were to:

1. Identify all objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located in the area of the proposed residential development.

2. Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value.

3. Describe the possible impact of the proposed development on these cultural remains, according to a standard set of conventions.

4. Propose suitable mitigation measures to minimize possible negative impacts on the cultural resources.

5. Review applicable legislative requirements.

3. CONDITIONS & ASSUMPTIONS

The following conditions and assumptions have a direct bearing on the survey and the resulting report:

1. Cultural Resources are all non-physical and physical man-made occurrences, as well as natural occurrences associated with human activity. These include all sites, structure and artifacts of importance, either individually or in groups, in the history, architecture and archaeology of human (cultural) development. Graves and cemeteries are included in this.

2. The significance of the sites, structures and artifacts is determined by means of their historical, social, aesthetic, technological and scientific value in relation to their uniqueness, condition of preservation and research potential. The various aspects are

not mutually exclusive, and the evaluation of any site is done with reference to any number of these aspects.

3. Cultural significance is site-specific and relates to the content and context of the site. Sites regarded as having low cultural significance have already been recorded in full and require no further mitigation. Sites with medium cultural significance may or may not require mitigation depending on other factors such as the significance of impact on the site. Sites with a high cultural significance require further mitigation (**see Appendix B**).

4. The latitude and longitude of any archaeological or historical site or feature, is to be treated as sensitive information by the developer and should not be disclosed to members of the public.

5. All recommendations are made with full cognizance of the relevant legislation.

6. It has to be mentioned that it is almost impossible to locate all the cultural resources in a given area, as it will be very time consuming. Developers should however note that the report should make it clear how to handle any other finds that might be found.

7. In this particular case certain areas had a thick grass cover which made archaeological visibility difficult.

4. LEGISLATIVE REQUIREMENTS

Aspects concerning the conservation of cultural resources are dealt with mainly in two acts. These are the National Heritage Resources Act (Act 25 of 1999) and the National Environmental Management Act (Act 107 of 1998).

4.1 The National Heritage Resources Act

According to the above-mentioned act the following is protected as cultural heritage resources:

a. Archaeological artifacts, structures and sites older than 100 years
b. Ethnographic art objects (e.g. prehistoric rock art) and ethnography
c. Objects of decorative and visual arts
d. Military objects, structures and sites older than 75 years
e. Historical objects, structures and sites older than 60 years
f. Proclaimed heritage sites
g. Grave yards and graves older than 60 years
h. Meteorites and fossils
i. Objects, structures and sites or scientific or technological value.

The national estate (**see Appendix D**) includes the following:

a. Places, buildings, structures and equipment of cultural significance
b. Places to which oral traditions are attached or which are associated with living heritage

c. Historical settlements and townscapes
d. Landscapes and features of cultural significance
e. Geological sites of scientific or cultural importance
f. Sites of Archaeological and palaeontological importance
g. Graves and burial grounds
h. Sites of significance relating to the history of slavery
i. Movable objects (e.g. archaeological, palaeontological, meteorites, geological specimens, military, ethnographic, books etc.)

A Heritage Impact Assessment (HIA) is the process to be followed in order to determine whether any heritage resources are located within the area to be developed as well as the possible impact of the proposed development thereon. An Archaeological Impact Assessment (AIA) only looks at archaeological resources. An HIA must be done under the following circumstances:

a. The construction of a linear development (road, wall, power line, canal etc.) exceeding 300m in length
b. The construction of a bridge or similar structure exceeding 50m in length
c. Any development or other activity that will change the character of a site and exceed 5 000m^2 or involve three or more existing erven or subdivisions thereof
d. Re-zoning of a site exceeding 10 000 m^2
e. Any other category provided for in the regulations of SAHRA or a provincial heritage authority

Structures

Section 34 (1) of the mentioned act states that no person may demolish any structure or part thereof which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.

A structure means any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith.

Alter means any action affecting the structure, appearance or physical properties of a place or object, whether by way of structural or other works, by painting, plastering or the decoration or any other means.

Archaeology, palaeontology and meteorites

Section 35(4) of this act deals with archaeology, palaeontology and meteorites. The act states that no person may, without a permit issued by the responsible heritage resources authority (national or provincial):

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;

c. trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or
d. bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment that assists in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.
e. alter or demolish any structure or part of a structure which is older than 60 years as protected.

The above mentioned may only be disturbed or moved by an archaeologist, after receiving a permit from the South African Heritage Resources Agency (SAHRA). In order to demolish such a site or structure, a destruction permit from SAHRA will also be needed.

Human remains

Graves and burial grounds are divided into the following:

a. ancestral graves
b. royal graves and graves of traditional leaders
c. graves of victims of conflict
d. graves designated by the Minister
e. historical graves and cemeteries
f. human remains

In terms of Section 36(3) of the National Heritage Resources Act, no person may, without a permit issued by the relevant heritage resources authority:

a. destroy, damage, alter, exhume or remove from its original position of 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 or 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, or any equipment which assists in the detection or recovery of metals.

Human remains that are less than 60 years old are subject to provisions of the Human Tissue Act (Act 65 of 1983) and to local regulations. Exhumation of graves must conform to the standards set out in the Ordinance on Excavations (Ordinance no. 12 of 1980) (replacing the old Transvaal Ordinance no. 7 of 1925).

Permission must also be gained from the descendants (where known), the National Department of Health, Provincial Department of Health, Premier of the Province and local police. Furthermore, permission must also be gained from the various landowners (i.e. where the graves are located and where they are to be relocated) before exhumation can take place.

Human remains can only be handled by a registered undertaker or an institution declared under the Human Tissues Act (Act 65 of 1983 as amended).

Unidentified/unknown graves are also handled as older than 60 until proven otherwise.

4.2 The National Environmental Management Act

This act states that a survey and evaluation of cultural resources must be done in areas where development projects, that will change the face of the environment, will be undertaken. The impact of the development on these resources should be determined and proposals for the mitigation thereof are made.

Environmental management should also take the cultural and social needs of people into account. Any disturbance of landscapes and sites that constitute the nation's cultural heritage should be avoided as far as possible and where this is not possible the disturbance should be minimized and remedied.

5. METHODOLOGY

5.1 Survey of literature

A survey of literature was undertaken in order to obtain background information regarding the area. Sources consulted in this regard are indicated in the bibliography.

5.2 Field survey

The survey was conducted according to generally accepted HIA practices and was aimed at locating all possible objects, sites and features of cultural (archaeological and historical) significance in the area of proposed development. If required, the location/position of any site is determined by means of a Global Positioning System (GPS), while photographs are also taken where needed.

The survey was undertaken mainly on foot, while certain sections were traversed by vehicle.

5.3 Oral histories

People from local communities are sometimes interviewed in order to obtain information relating to the surveyed area. It needs to be stated that this is not applicable under all circumstances. When applicable, the information is included in the text and referred to in the bibliography.

5.4 Documentation

All sites, objects, features and structures identified are documented according to the general minimum standards accepted by the archaeological profession. Co-ordinates of individual localities are determined by means of the Global Positioning System (GPS).The information is added to the description in order to facilitate the identification of each locality.

6. DESCRIPTION OF THE AREA

The development is located on the farm Koedoeskloof, Hay District, Northern Cape Province. PMG is planning manganese mining, and the project is currently in prospecting phase with drilling being undertaken. The farm borders the Rooinekke Mine. The area is located approximately 80km southwest of Postmasburg and 50km west of Griquatown.

Vegetation is sparse and characterized by thorn trees (acacias), shrubs and grassveld. Visibility was therefore fairly good. The topography consists of gently sloping plains interrupted by hills such as the Rooinekke Hill, Platkop, Tafelkop and Dam se Kop. Non-perennial streams crisscross the area, while red Kalahari sands are found throughout. Large scale agricultural activities, such as ploughing for crop growing, has not disturbed the area, with the area mainly used for cattle, sheep and goat farming.

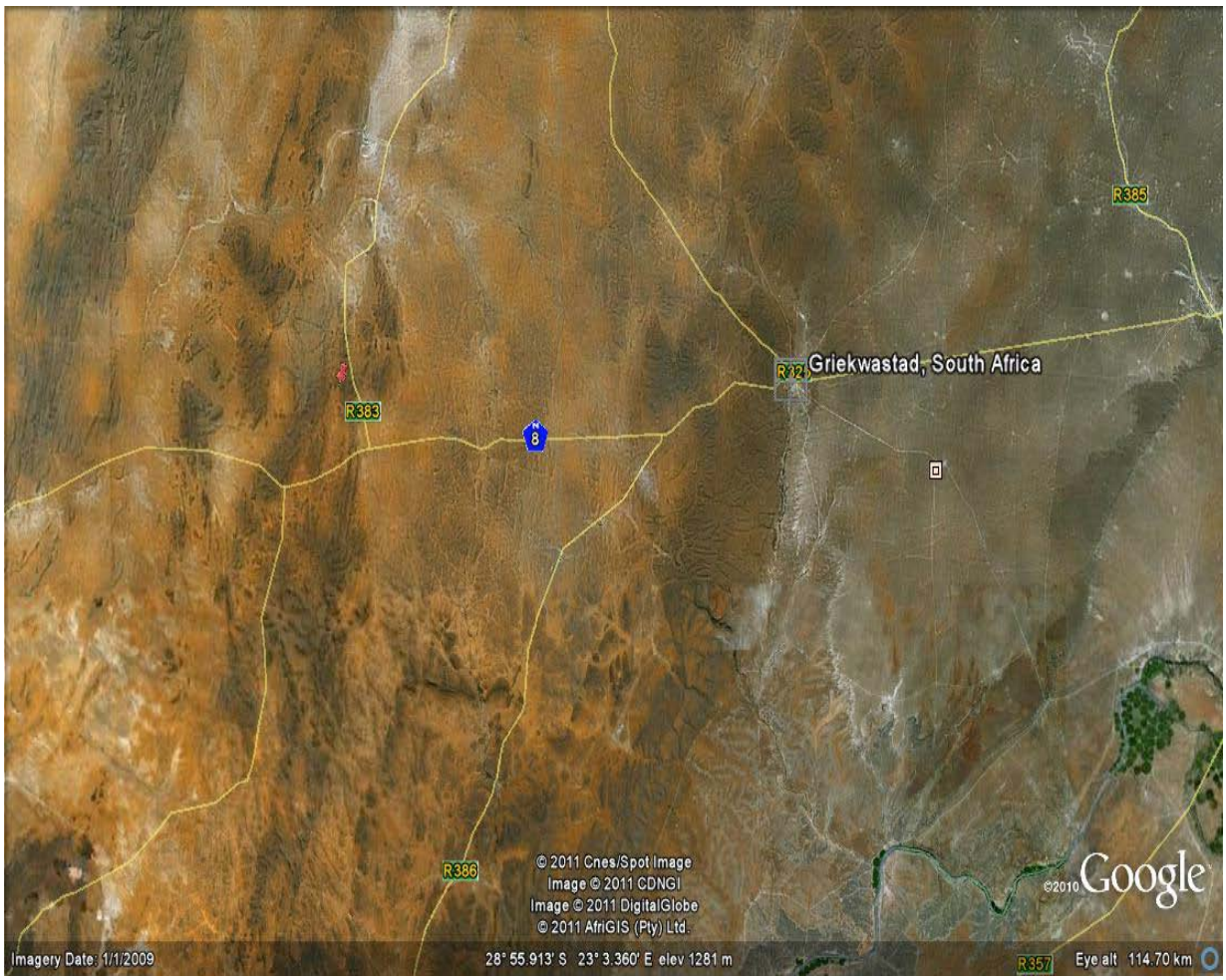

Figure 1: Location of the development area (Courtesy Google Earth 2011).

Figure 2: Topographic location of area (Map Source 2010).

Figure 3: General view of a section of the area.
Note the acacias, grass, shrubs and red Kalahari sand.

Figure 4: Another view of the area.

Figure 5: Further view of a section of the area, with hills, red Kalahari sands and acacias.

7. DISCUSSION

In order to enable the reader to understand archaeological and historical objects, features and sites that could possibly be unearthed and disturbed during development, it is necessary to give a general background regarding the different phases of human history.

7.1 Stone Age

The Stone Age is the period in human history when lithic (stone) material was mainly used to produce tools (Coertze & Coertze 1996: 293). In South Africa the Stone Age can be divided

roughly into three periods. It is important to note that the dates are relative and only provide a broad framework for interpretation. The division for the Stone Age according to Korsman & Meyer (1999: 93-94) is as follows:

Early Stone Age (ESA) 2 million – 150 000 years ago
Middle Stone Age (MSA) 150 000 – 30 000 years ago
Late Stone Age (LSA) 40 000 years ago – 1850 - A.D.

Stone Age sites are found throughout the Northern Cape, and includes the well-known Wonderwerk Cave in the Kuruman Hills, Tsantsabane, an ancient specularite working on the eastern side of Postmasburg, Doornfontein, another specularite working north of Beeshoek and a cluster of important Stone Age sites near Kathu. Additonal specularite workings with associated Ceramic Later Stone Age material and older Fauresmith sites (early Middle Stone Age) are known from Lylyfeld, Demaneng, Mashwening, King, Rust & Vrede, Paling, Gloucester and Mount Huxley. Rock engraving sites are known from Beeshoek and Bruce (Morris 2005: 3).

The onset of the Middle Stone Age coincided with a widespread demand for coloured or glittering minerals that arose at the time for still unknown reasons. The intensive collection of such substances soon exhausted surface exposures and led to the quest being extended underground and thus to the birth of mining practice. Specularite was commonly mined in the Postmasburg area. In 1968 AK Boshier, working in collaboration with P Beaumont, found a number of underground specularite mines on the farm Paling.

No known Stone Age sites are found in the study area. A number of Stone Age sites, consisting of scatters of stone tools found near or on rocky outcrops underneath the red Kalahari sands, were recorded during the survey. Details on these sites will be discussed later.

7.2 Iron Age

The Iron Age is the name given to the period of human history when metal was mainly used to produce artifacts (Coertze & Coertze 1996: 346). In South Africa it can be divided in two separate phases according to Van der Ryst & Meyer (1999: 96-98), namely:

Early Iron Age (EIA) 200 – 1000 A.D.
Late Iron Age (LIA) 1000 – 1850 A.D.

Huffman (2007: xiii) indicates that a Middle Iron Age should be included. His dates, which now seem to be widely accepted in archaeological circles, are:

Early Iron Age (EIA) 250 – 900 A.D.
Middle Iron Age (MIA) 900 – 1300 A.D.
Late Iron Age (LIA) 1300 – 1840 A.D.

The expansion of early farmers, who, among other things, cultivated crops, raised livestock, made ceramic containers (pots), mined ore and smelted metals, occurred in this area between AD 400 and AD 1100 and brought the Early Iron Age (EIA) to South Africa. They settled in semi-permanent villages.

While there is some evidence that the EIA continued into the 15th century in the South African Lowveld, on the escarpment it had ended by AD1100. The Highveld became active again from the 15th century onwards due to a gradually warmer and wetter climate. From here communities spread to other parts of the interior. This later phase, termed the Late Iron Age (LIA), was accompanied by extensive stonewalled settlements, such as the Thlaping capital Dithakong, 40 km north of Kuruman.

Sotho-Tswana and Nguni societies, the descendants of the LIA mixed farming communities, found the region already sparsely inhabited by the Late Stone Age (LSA) Khoisan groups, the so-called 'first people'. Most of them were eventually assimilated by LIA communities and only a few managed to survive, such as the Korana and Griqua. This period of contact is sometimes known as the Ceramic Late Stone Age and is represented by the Blinkklipkop specularite mine near Postmasburg and finds at the Kathu Pan.

No Iron Age sites, features or objects were found during the survey.

7.3 Historical Age

Factors such as population expansion, increasing pressure on natural resources, the emergence of power blocs, attempts to control trade and penetration by Griquas, Korana and white communities from the south-west resulted in a period of instability in Southern Africa that began in the late 18th century and effectively ended with the settlement of white farmers in the interior. This period, known as the *difaqane* or *Mfecane*, also affected the Northern Cape Province, although at a relatively late stage compared to the rest of Southern Africa. Here, the period of instability, beginning in the mid-1820s, was triggered by the incursion of displaced refugees associated with the Tlokwa, Fokeng, Hlakwana and Phuting tribal groups.

The *difaqane* coincided with the penetration of the interior of South Africa by white traders, hunters, explorers and missionaries. The first was PJ Truter's and William Somerville's journey of 1801, which reached Dithakong at Kuruman. They were followed by Cowan, Donovan, Burchell and Campbell and resulted in the establishment of a London Mission Society station near Kuruman in 1817 by James Read.

The Great Trek of the Boers from the Cape in 1836 brought large numbers of Voortrekkers up to the borders of large regions known as Bechuanaland and Griqualand West, thereby coming into conflict with many Tswana groups and also the missionaries of the London Mission Society. The conflict between Boer and Tswana communities escalated in the 1860s and 1870s when the Korana and Griqua communities became involved and later also the British government. The conflict mainly centered on land claims by various communities. For decades the western border of the Transvaal Boer republic was not fixed. Only through arbitration (the Keate Arbitration), triggered by the discovery of gold at Tati (1866) and diamonds at Hopetown (1867) was part of the western border finally determined in 1871. Ten years later, the Pretoria Convention fixed the entire western border, thereby finally excluding Bechuanaland and Griqualand West from Boer domination.

Geographically, the study area is part of a region known as Griqualand West. At the end of the 18th century and the beginning of the 19th century Griqua tribes coming from the south settled in the region in order to escape encroachment of Afrikaner Trekboere who was active along the Orange River. They established the town of Klaarwater, renamed Griquatown in

1813. After the discovery of diamonds in 1867 a serious dispute over the ownership of the diamond fields ensued, involving the Transvaal and Orange Free State Boer republics, Griqua, Korana and Thlaping communities and the Cape colonial government. In October 1871 the diamond fields were proclaimed British territory under the name Griqualand West. In 1879 it was annexed to the Cape Colony.

The incorporation of Griqualand West into the Cape Colony promoted colonial settlement in the area from the 1880s. Government-owned land was surveyed and divided into farms, which were transferred to farmers. Surveyors were given the task of surveying and naming some of the many farms in this region. These included the farms in the study area. These farms were allocated to prospective farmers, but permanent settlement only started in the late 1920s and the first farmsteads were possibly built during this period, making them older than 60 years. The Griqua town of Blinkklip, originally a mission station, was renamed Postmasburg in 1890 and became the centre of a magisterial district. Another town, Olifantshoek, was established in the 1880s.

The region remained sparsely populated until the advent of the 20th century, when cattle farming became popular. Henry George Brown, who was commissioned in 1888 by the government of British Bechuanaland to erect the first government buildings in Kuruman, became interested in the iron ores that were known from the Klipfontein Hills. While prospecting there in the late 19th century, he became the first person to identify manganese in what is today known as the Eastern Belt of the Postmasburg Manganese Field. Captain Thomas Shone, who arrived in Postmasburg in 1919 to join the diggers following the discovery of diamonds at the town, discovered the manganese ores in the Western Belt during 1922-1924.

In 1925 Shone and partners founded the Union Manganese Mines and Minerals Limited in order to secure mineral rights and exploit the ores. Prior to the discoveries by Brown and Shone, manganese was only mined in South Africa on a very small scale west of the present town of Magaliesburg and in the Western Cape.

Following the founding of their manganese mining company, Shone and his partners attempted to entice overseas investments but met with little success, because too little was known about the economic viability of the deposits. The government then sent Dr AL Hall of the Geological Survey to conduct a detailed geological survey of the Postmasburg manganese deposits. He was the first person to map them along the entire length of the Gamagara Hills and to classify them scientifically as ferruginous manganese ores that were suited for the production of low-grade ferromanganese. His report (1926) was optimistic about the viability of the deposits but stated that lack of proper transport facilities would be a concern.

Shone's company established small prospect workings all along the Gamagara Hills on farms such as Beeshoek, Paling, Doornfontein and Magoloring. In 1926 a Postmasburg attorney, AJ Bester, started taking up options on the farms in the Klipfontein Hills and established a second mining company, South African Manganese Limited, the forerunner of SAMANCOR. Two years later Guido Sacco formed a third company, Gloucester Manganese Mines (Postmasburg) Limited. The land was held for future development, as reasonable transportation facilities were not available at that time.

The presence of manganese deposits in the Klipfontein Hills and observations made from prospecting trenches showed that the manganese ore bodies in the Western Belt were perhaps more irregular in shape than predicted by Hall. This resulted in the Geological Survey commissioning Dr Louis Nel to undertake a second survey in 1927-1929 to map the entire manganese field in detail. His results, published in 1929, laid the foundation for much of the present-day knowledge of the geology of the Postmasburg manganese field.

Mining by Union Manganese and South African Manganese started in earnest in 1927 in the Postmasburg field. Lack of proper transport facilities and the application of obsolete mining methods (everything was done by hand on a small scale) hampered progress. Manganese ores were collected from the open pits through a system of coco-pans and loaded on wagons (later trucks) that went to the Koopmansfontein railway station, about 100 km away.

The situation showed promises of being improved when the British Swiss International Corporation Limited provided capital for the construction of a railway line from Koopmansfontein to Postmasburg and Beeshoek in return for certain manganese mineral rights. A new joint company, The Manganese Corporation Limited, was formed and an agreement reached with the Minister of Railways and Harbours. The extended line to Beeshoek was opened in June 1930 and development of the ore bodies at Beeshoek, Doornfontein and Paling could take place. For this purpose a narrow-gauge railway line was laid.

However, the September 1929 crash on the New York Stock Exchange, followed by the Great Depression, brought all manganese mining operations to a halt, rendering the newly constructed Koopmansfontein / Beeshoek railway line dormant.

May 1930 saw the launch of Ore & Metal Company Limited to import and export mineral concentrates, including manganese. The African Mining and Trust Company Limited were formed in December 1931 to acquire mineral rights and explore mineral deposits. In exchange for shares in African Mining and Trust, the founders transferred their entire Ore & Metal shareholding to the new company, while Guido Sacco transferred his Gloucester Manganese Mines shares. Thus, Ore & Metal and Gloucester Manganese Mines became subsidiaries of African Mining and Trust, now a wholly owned subsidiary of Assore Limited (previously The Associated Ore & Metal Corporation Limited), which was formed in 1950.

During 1934 the South African Railways re-opened the railway line and extended it to Gloucester. In 1935 The Associated Manganese Mines of South Africa Limited ("Assmang") was formed. Anglovaal acquired all the mineral leases of the Manganese Corporation and these were ceded to Assmang, as were the shares of the Gloucester Manganese Mines Limited held by African Mining and Trust in exchange for shares in Assmang. The first shipment of manganese ore left Durban harbour in March 1936 and other shipments continued uninterruptedly.

One historical site, containing graves, were identified during the survey. The site will not be directly impacted on by the proposed mining.

7.4 Discussion of the various sites identified

Site 1 – Stone Age tool scatter

The site consists of a low density scatter of stone tools (mostly flakes) on a low rocky outcrop. The artifacts possibly date to between the MSA and LSA.

Site Location: S28.85325 E 22.75258
Significance: Low
Mitigation measures: None. Low density of material. Recording done during survey seen as sufficient mitigation.

Figure 6: Location of Site 1.

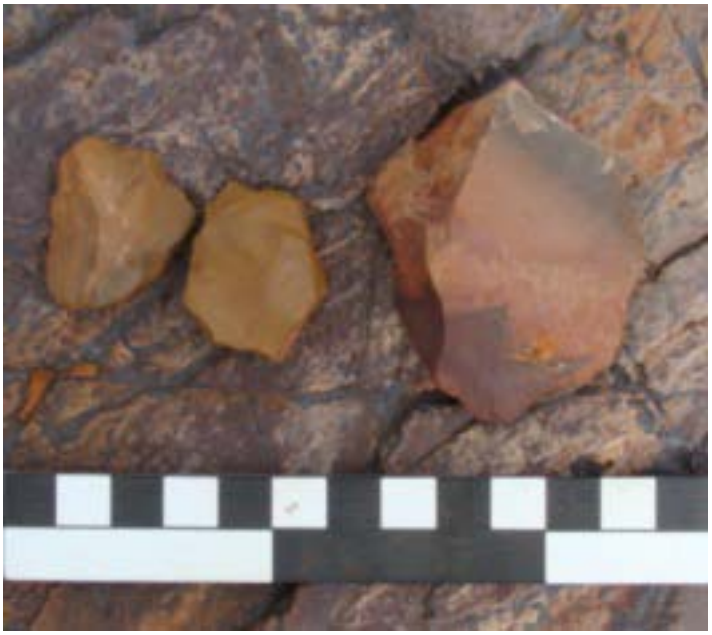

Figure 7: MSA/LSA flakes found at Site 1.

Site 2 – Stone Age tool scatter

This is another fairly low scatter of MSA/LSA stone tools and flakes found near a rocky ridge. There is possible evidence of earlier prospecting (mining) here as well, although this can not be substantiated at this stage.

Site Location: S28.85072 E22.75529
Significance: Low
Mitigation measures: None – Density of tools very low. Recording during survey seen as sufficient mitigation.

Figure 8: Area close to Site 2. Some evidence of possible earlier mining visible. The talus slope formed by dassies and other animals burrowing here.

Sites 3 – 5: Stone Age scatters

All three these sites are characterized by fairly dense and extensive scatters of MSA/LSA stone tools, including flakes, flake-tools (blades, scrapers), cores and other tools. The tools are found on rocky (quartzite) outcrops underlying the red Kalahari sand dunes in the area. The sand is being eroded away, exposing the outcrops and tools. The density of material on these sites makes them fairly significant, and some mitigation measures will be recommended.

It is envisaged that similar sites will be found throughout the area, and as the sands erode away more material will be exposed. Raw material availability, as well as the fact that there were water sources available (non-perennial/seasonal), made the area suitable for Stone Age hunter-gatherers. No rock shelters or caves were recorded, although there could be. The dense scatters of tools are evidence of thousands of years of periodic use of the area during Stone Age times. The sites possibly represent open-air camping sites and sites where stone tools were manufactured (knapping sites).

Site locations: Site 3: S28.84464 E22.75997
Site 4: S28.84574 E22.76484
Site 5: S28.84878 E22.75643
Significance: Medium to High
Mitigation measures: Detailed mapping of sites, sampling of representative material and expert analysis of material

Figure 9: Location of Site 3.

Figure 10: Stone tools and flakes from Site 3>

Figure 11: Location of Site 4.

Figure 12: Site 5.

Site 6: Historical graves

These graves are located close to the farmhouse on Koedoeskloof, and will not be impacted on by the mining development according to the client (Kai Batla). However, as graves are always of high significance from a cultural and historical perspective, some mitigation measures will have to be implemented to protect the site. There are two graves located in the cemetery. The one grave has an inscription on it reading "**'N Dankbare Herinnering aan Oompie Petrus Carolus Jooste 16.8.1859. 22.7.1938. Van J.en M.Snyman**". Based on the date of death the grave is older than 60 years of age. An old map of the area (from the Chief Surveyor General's Database), unfortunately undated, contained some interesting information. The map titled "A Map of Eleven Farms in the District of Hay, Griqualand

West", and surveyed by Joseph Orpen (the government surveyor) shows that the farm Koodooskloof No.96 was surveyed for one Petrus Carolus Jooste in around May 1890. This is surely the same Petrus Carolus Jooste buried in the cemetery located during the survey.

Site Location: S28.85828 E22.74790
Significance: High
Mitigation measures: Draft and Implement Graves Management Plan. Clean site, fence-in and access control

Figure 13: Historical grave site on the farm.

Figure 14: Close-up of grave of Petrus Carolus Jooste.

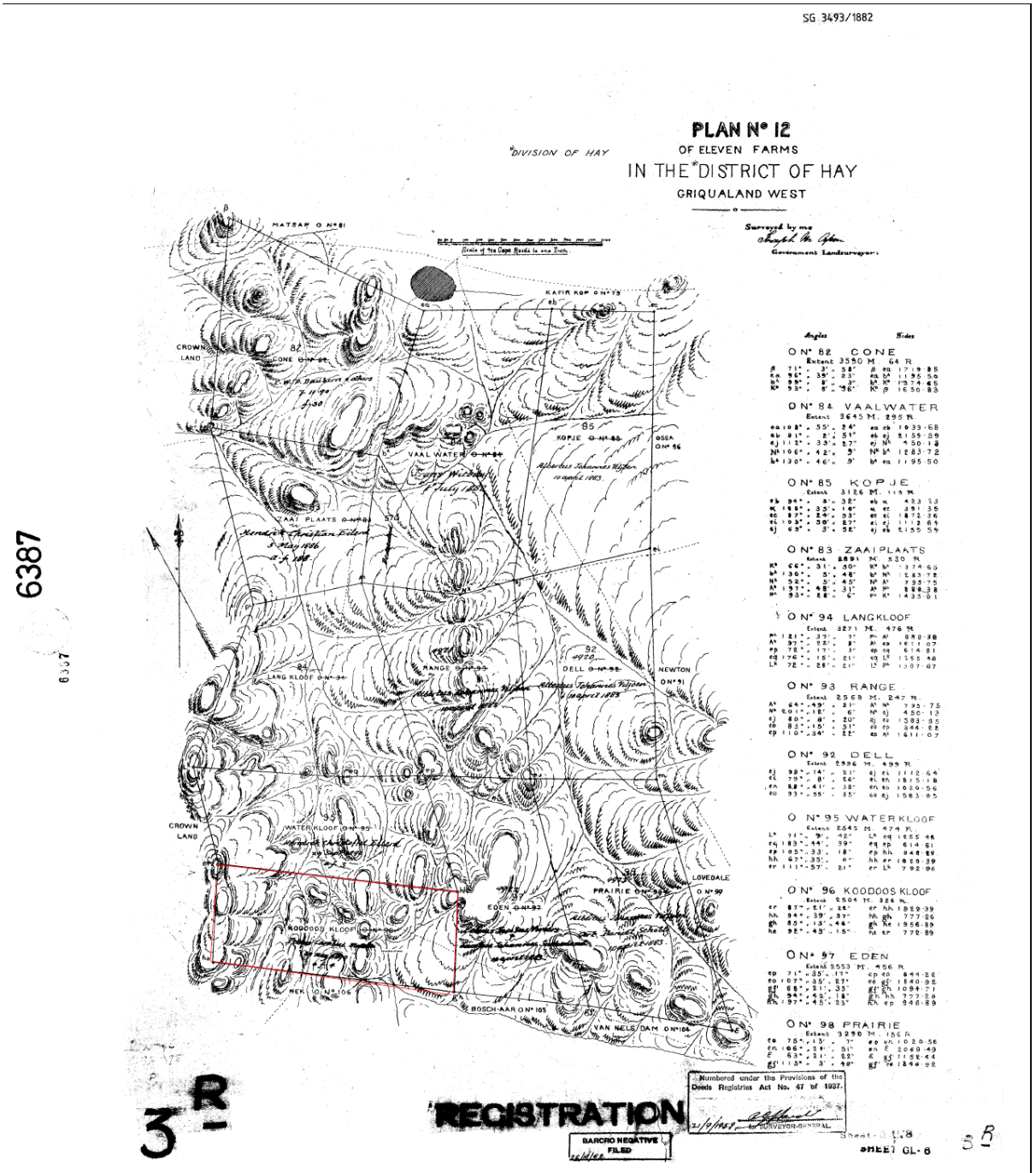

Figure 15: Old map of area, with Koedoeskloof shown in red block (csg.dla.gov.za).

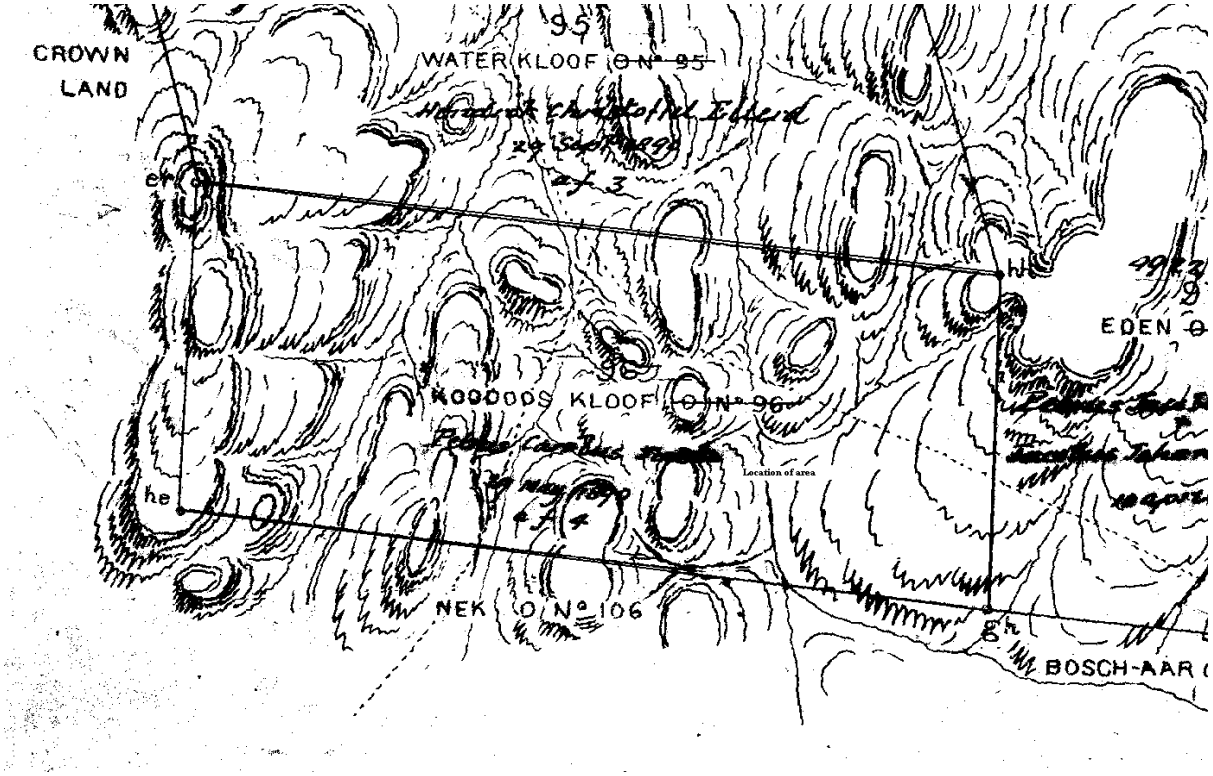

Figure 16: Close-up of same map, showing Koedoeskloof.
The name of Petrus Carolus Jooste is visible as well.

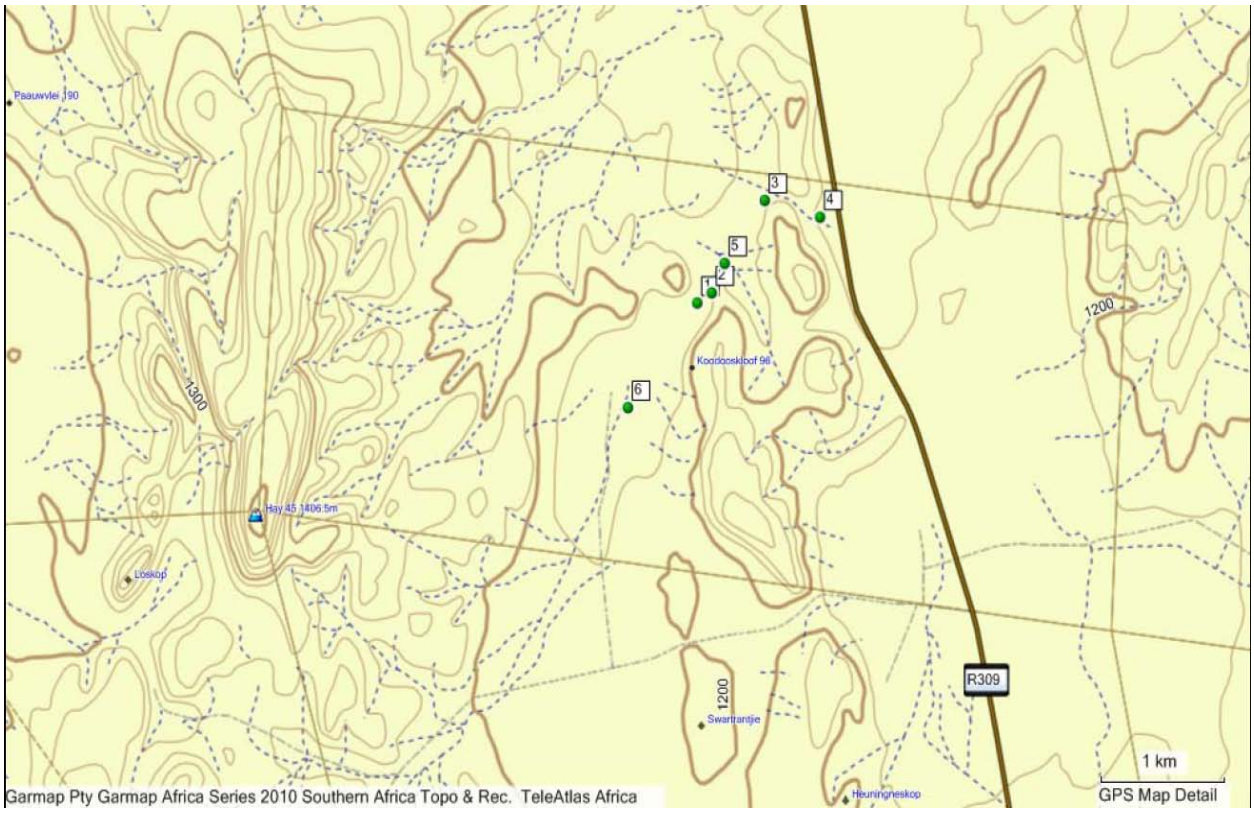

Figure 17: Topographic distribution of sites in the area (Map Source 2010).

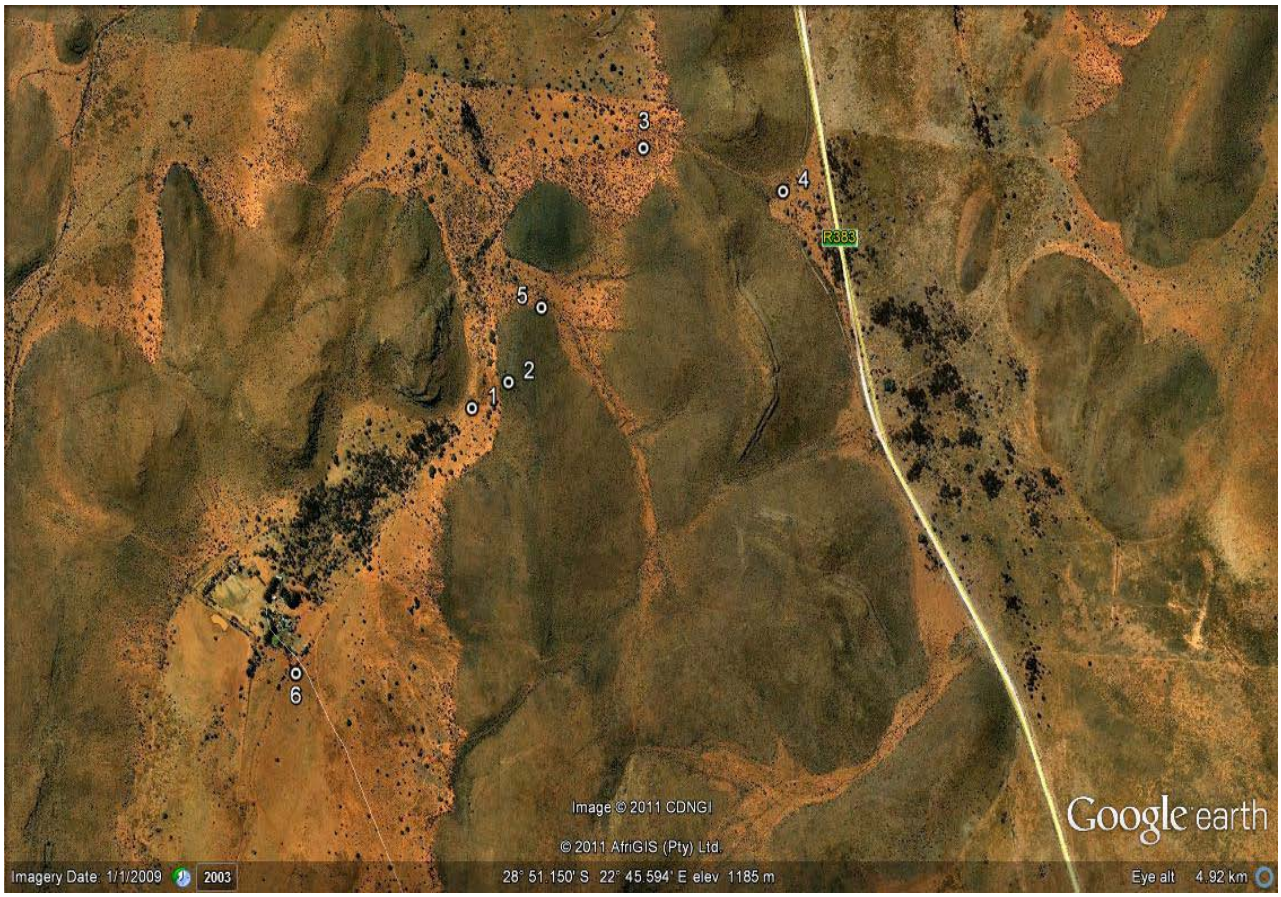

Figure 18: Aerial view of location of sites in the area (Google Earth 2011).

8. CONCLUSIONS AND RECOMMENDATIONS

In conclusion it can be stated that the assessment of the area was conducted successfully. A number of sites (dating mainly to the MSA/LSA) of cultural heritage significance were identified in the area. Six of the sites are represented by scatters of stone tools (of varying density), and it is envisaged that many similar sites will be found throughout the area. Three of these sites have fairly dense scatters of material over relatively extensive areas, and mitigation measures in the form of detailed mapping and sampling of representative material will have to be undertaken to minimize the impact of the proposed future mining operations on the Stone Age of the area.

The historical graves recorded on Koedoeskloof should be preserved without a doubt, as the individuals buried here played an integral role in the early history of the area. The graves should not be disturbed and a Graves Management Plan needs to be drafted and implemented.

From a Cultural Heritage perspective there would be no objection to the proposed development if these mitigation measures are implemented. **However, it should be noted that the subterranean presence of archaeological and/or historical sites, features or artifacts are always a distinct possibility. Care should therefore be taken during any development activities that if any of these are accidentally discovered, a qualified archaeologist be called in to investigate. It is virtually impossible to locate and record all features, objects or sites of a cultural heritage origin in an area and sites could therefore have been missed. This includes low, stone-packed, graves.**

9. REFERENCES

Location of development and distribution of sites: Images © Google Earth 2011 and Map Source 2010

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APPENDIX A

Definition of terms:

Site: A large place with extensive structures and related cultural objects. It can also be a large assemblage of cultural artifacts, found on a single location.

Structure: A permanent building found in isolation or which forms a site in conjunction with other structures.

Feature: A coincidal find of movable cultural objects.

Object: Artifact (cultural object).

(Also see Knudson 1978: 20).

APPENDIX B

Cultural significance:

- Low — A cultural object being found out of context, not being part of a site or without any related feature/structure in its surroundings.

- Medium — Any site, structure or feature being regarded less important due to a number of factors, such as date and frequency. Also any important object found out of context.

- High — Any site, structure or feature regarded as important because of its age or uniqueness. Graves are always categorized as of a high importance. Also any important object found within a specific context.

APPENDIX C

Cultural significance:

- Low — A cultural object being found out of context, not being part of a site or without any related feature/structure in its surroundings.

- Medium — Any site, structure or feature being regarded less important due to a number of factors, such as date and frequency. Also any important object found out of context.

- High — Any site, structure or feature regarded as important because of its age or uniqueness. Graves are always categorized as of a high importance. Also any important object found within a specific context.

Heritage significance:

- Grade I — Heritage resources with exceptional qualities to the extent that they are of national significance

- Grade II — Heritage resources with qualities giving it provincial or regional importance although it may form part of the national estate

- Grade III — Other heritage resources of local importance and therefore worthy of conservation

APPENDIX D

Protection of heritage resources:

- Formal protection

National heritage sites and Provincial heritage sites – grade I and II
Protected areas - an area surrounding a heritage site
Provisional protection – for a maximum period of two years
Heritage registers – listing grades II and III
Heritage areas – areas with more than one heritage site included
Heritage objects – e.g. archaeological, palaeontological, meteorites, geological specimens, visual art, military, numismatic, books, etc.

- General protection

Objects protected by the laws of foreign states
Structures – older than 60 years
Archaeology, palaeontology and meteorites
Burial grounds and graves
Public monuments and memorials