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**PHASE 1 HIA REPORT FOR THE PROPOSED
COLENZO POWER PROJECT
NEAR COLENZO, KWAZULU-NATAL**

For:

*Eco-Partners
P.O.Box 73513
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2030*

REPORT: APAC015/26

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JULY 2015

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A handwritten signature in black ink, appearing to be 'A. Pelser', written in a cursive style.

SUMMARY

APelser Archaeological Consulting (APAC) was appointed by EcoPartners to conduct a Phase 1 HIA for the Colenso Power Project. The development will entail a Coal Fired Power Station and Coal Mine and related infrastructure. This report deals with the power station site. The development & study area falls close to the Colenso area, within the Uthukela District Municipality and the Emnambithi/Ladysmith and Umtshezi Local Municipalities but is centrally located to the Imbabazane, Okhahlamba and the Indaka Local Municipalities as well. The identified location is considered to be very desirable due to the proximity of economically minable coal, a reliable water source (Tugela River), logistics infrastructure (road and rail) and an electrical transmission network to allow for the evacuation of the electricity generated by the project.

Earlier Basic Assessments for in the development area indicated the presence of a range of historical (mainly Anglo-Boer War 1899-1902) sites in and around the area, while desktop research for this assessment indicated that there are a range of archaeological and historical resources known in the larger geographical area as well. The physical assessment conducted during May 2015 identified and recorded a large number of sites, features and objects of varying significance within the study area, dating to the Stone Age, Iron Age and Historical time periods. This document discusses the results of this assessment, and provides recommendations regarding required mitigation measures at the end.

Once the recommended Mitigation Measures have been implemented, which will include a Cultural Heritage Resources Management Plan, the development should be allowed to continue.

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1. INTRODUCTION

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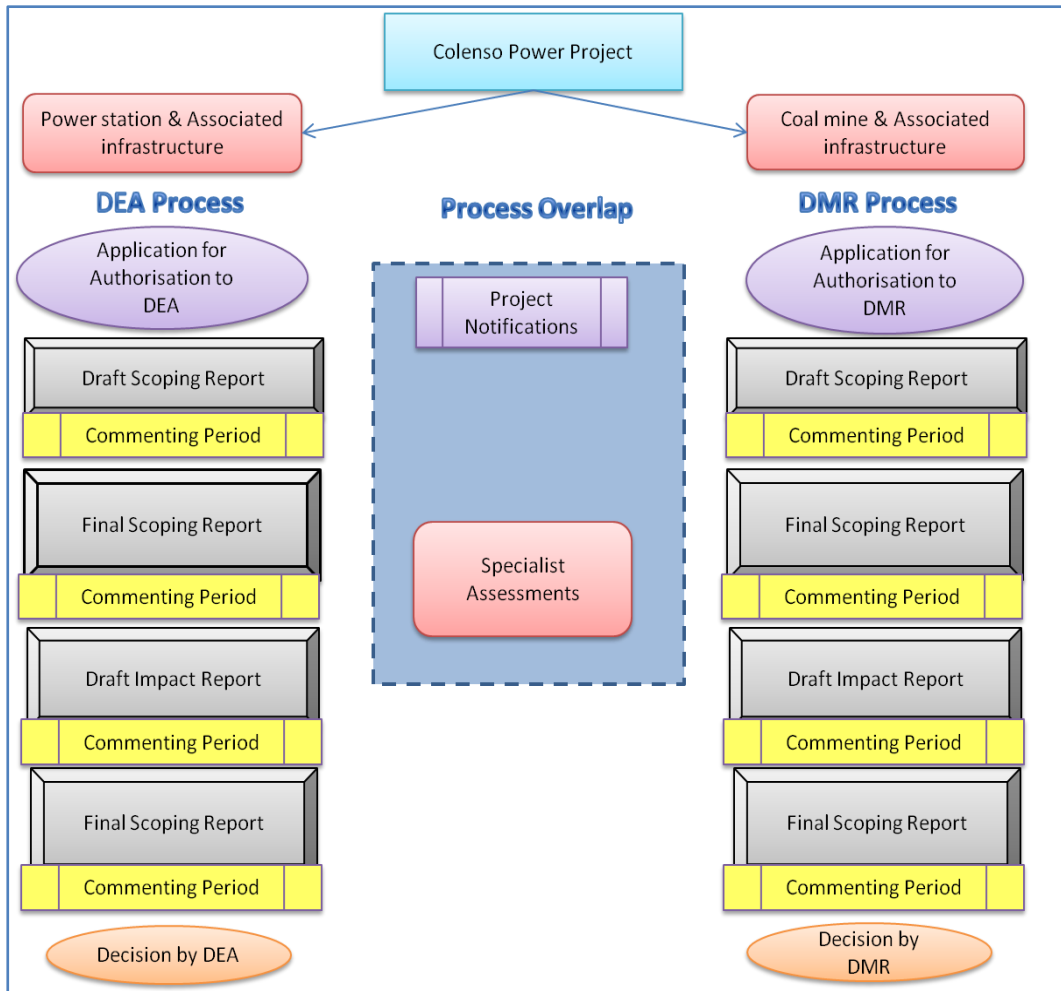
The client indicated the location and boundaries of the study area and the assessment concentrated on this portion.

The overall authorisation process for the project will be split in two, based on the different authorisations required for each of these listed activities:

- a) Integrated Environmental Authorisation Application for the proposed Coal fired power station and associated infrastructure to be submitted to the national Department of Environmental Affairs. (Hereafter referred to as the proposed power station / the project)
- b) Mining right application to be submitted to the regional office of the Department of Mineral Resources.

APELSE ARCHAEOLOGICAL CONSULTING was appointed to conduct the Phase 1 Heritage Impact Assessment for both the power station and mine component of the project. This was done to ensure that the same methodology and assumptions are used in the assessments required for both developments and also to identify possible cumulative impacts.

The figure below provides a schematic illustration of the relationship between the two authorisation processes.



2. TERMS OF REFERENCE

The Terms of Reference for the study was to:

1. Identify all objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located on the portion of land that will be impacted upon by the proposed 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. 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).

3.1 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 of scientific or technological value.

The National Estate 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 000m² or involve three or more existing erven or subdivisions thereof
- d. Re-zoning of a site exceeding 10 000 m²
- 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 to) 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)**.

3.2 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.

4. METHODOLOGY

4.1 Survey of literature

A survey of available literature was undertaken in order to place the development area in an archaeological and historical context. The sources utilized in this regard are indicated in the bibliography.

4.2 Field survey

The field assessment section of the study was conducted according to generally accepted HIA practices and aimed at locating all possible objects, sites and features of heritage significance in the area of the proposed development. The location/position of all sites, features and objects is determined by means of a Global Positioning System (GPS) where possible, while detail photographs are also taken where needed.

4.3 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.

4.4 Documentation

All sites, objects, features and structures identified are documented according to a general set of minimum standards. 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.

5. DESCRIPTION OF THE AREA

APelser Archaeological Consulting (APAC) was appointed by EcoPartners to conduct a Phase 1 HIA for the Colenso Power Project. The development will entail a Coal Fired Power Station and Coal Mine and related infrastructure. This reports deals with the Power Station site. The development & study area falls close to the Colenso area, within the Uthukela District Municipality and the Emnambithi/Ladysmith and Umtshezi Local Municipalities but is centrally located to the Imbabazane, Okhahlamba and the Indaka Local Municipalities as well. The identified location is considered to be very desirable due to the proximity of economically minable coal, a reliable water source (Tugela River), logistics infrastructure (road and rail) and an electrical transmission network to allow for the evacuation of the electricity generated by the project.

The closest towns to the proposed project site are Colenso and the Ezakheni settlement located south of the Ladysmith town. These two closest towns fall within the Emnambithi/Ladysmith LM. Various farms and farm portions are covered in the study area, namely Schurfde Poort 1147 Portion 1 & Remainder; Labuschagne's Kraal 1229 Portion 10; Tugela Drift 1062 Remainder; Tugela Drift 1062 Remainder ; Labuschagne's Kraal 1229 (various portions); Varkens Fontein 1138 Portion 19; Cromleybank 1146 Portions 5 & 7; Clapham Kloof 11318 Remainder & Riet Bult 1213 Portion 4.

The study area is underlain by sedimentary rocks of the Permian aged Vryheid and Volksrust Formations of the Ecca Group and Permian aged Adelaide Subgroup of the Beaufort Group, Karoo Supergroup as well as a prominent Jurassic aged dolerite sill and Quaternary aged surface deposits of the Masotcheni Formation and alluvium. A very prominent and extensive fault cuts the southern part of the development.

The topography is characterized by a mix of relatively flat plains, hilly terrain and incised valleys (Figure 3). The terrain consists of slopes of around 2-12%, and lies at an altitude of between 900 and 1 200 m above sea level. The Tugela River flows through the western end of the area, forming the boundary in the north-east.

In the south-western parts of the area the terrain is relatively flat to gently undulating with topographical variations in the form of localized hills (such as Colenso Koppie). The north-eastern part is characterized by higher lying terrain that slopes down sharply toward the Tugela River. Overall, the topography slopes down gradually in a southern direction, with the residential community of Ezakheni in the northern parts being located on higher ground. As such, lower lying terrain with incised valleys in the vicinity of the Bloukrans River dominates in the southern part of the area. The study area falls within the Savanna and Grassland Biomes. Within a biome, smaller groupings referred to as bioregions can be found which provide more specific but general details as to the biophysical characteristics of smaller areas. The project areas can be found within the Sub-Escarpment Savanna and Sub-Escarpment Grassland bioregions. Going into even finer detail, vegetation units are classified which contain a set of general but more local biophysical characteristics as opposed to the entire bioregion. The proposed development is found within the Thukela Thornveld, the Thukela Valley Bushveld and the KwaZulu-Natal Highland Thornveld vegetation units.

The land use in the area is characterized by natural or undeveloped areas which have been partially transformed and degraded as a result of urban transformation, rural settlement, and agricultural activities in the form of livestock grazing, subsistence and commercial farming. The broad study area is bounded to the west by the R103 secondary road and the R74 bisects the south-western part of the broad study area. The dominant built-up areas within the study area include the town of Colenso, located directly east of the R103, and the residential community and industrial area of Ezakheni in the northern reaches of the area.

The land use classification of the area is currently "Cultivated temporary - commercial dryland", "unimproved grassland" and Urban/built-up land: residential. There are a number of game ranches in the area. The area is bounded to the west by the R103 secondary road and the R74 bisects the south-western part of the area. The R103 road is a rural principal arterial (provincial) main road and is extensively used to transport goods from the larger industrialized towns such as Estcourt and Ladysmith. Smaller single carriage paved roads exist in the preliminary study area but is not expected to carry much traffic. A Transnet/Spoornet railway route borders the Colenso community and traverses the preliminary study area. There are many transmission lines crossing over the western part of the area feeding into the Bloukrans Substation.

Visibility during the assessment was fairly good in sections, although some very dense vegetation cover made visibility difficult in other areas. Although some residential (homesteads and related structures) development, as well as agricultural activities, have impacted on the area in the historical and recent past, the land parcels are fairly undeveloped. Both archaeological and historical remains were identified in the area, although some will not be directly and negatively impacted by the proposed development actions.

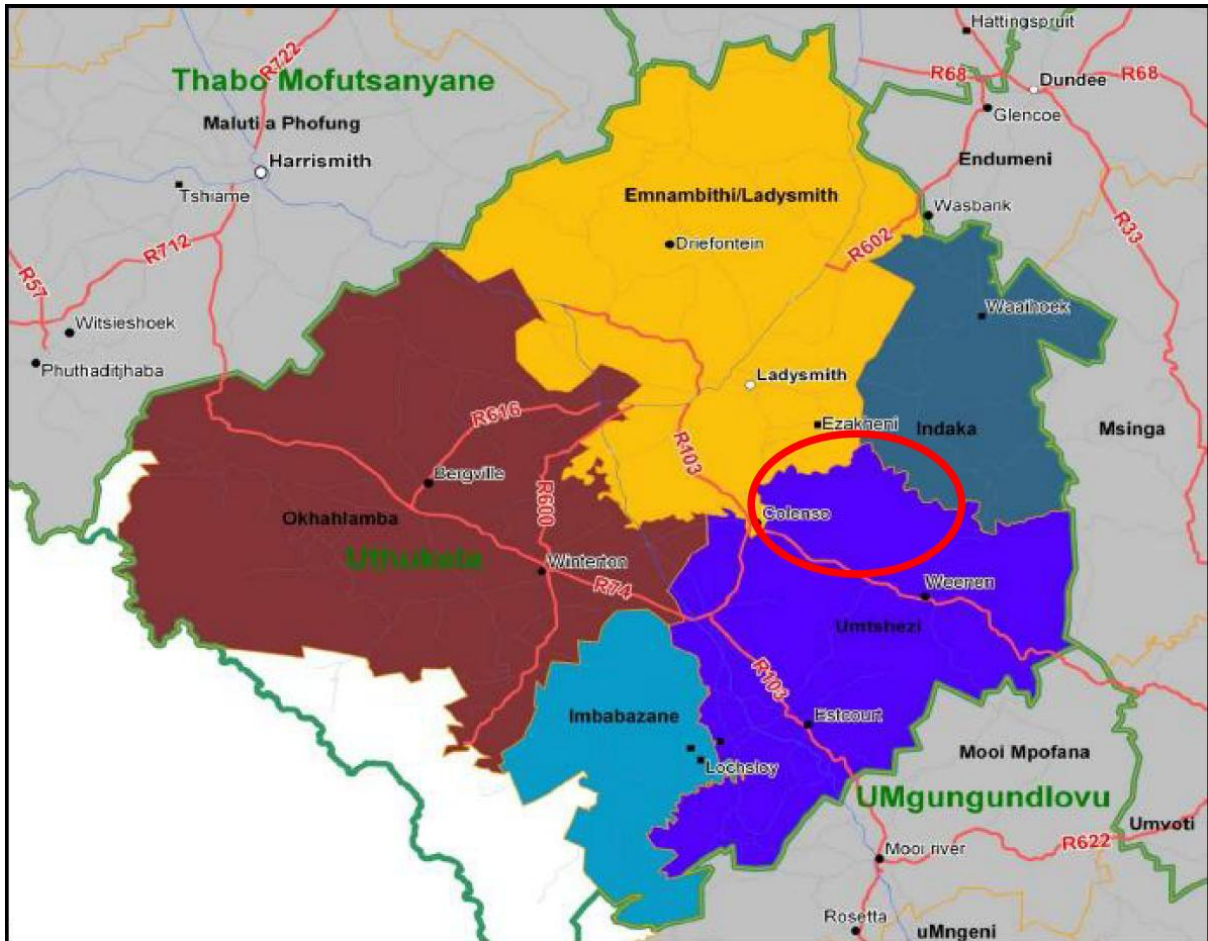


Figure 1: Location and extent of study area (provided by Eco-Partners).

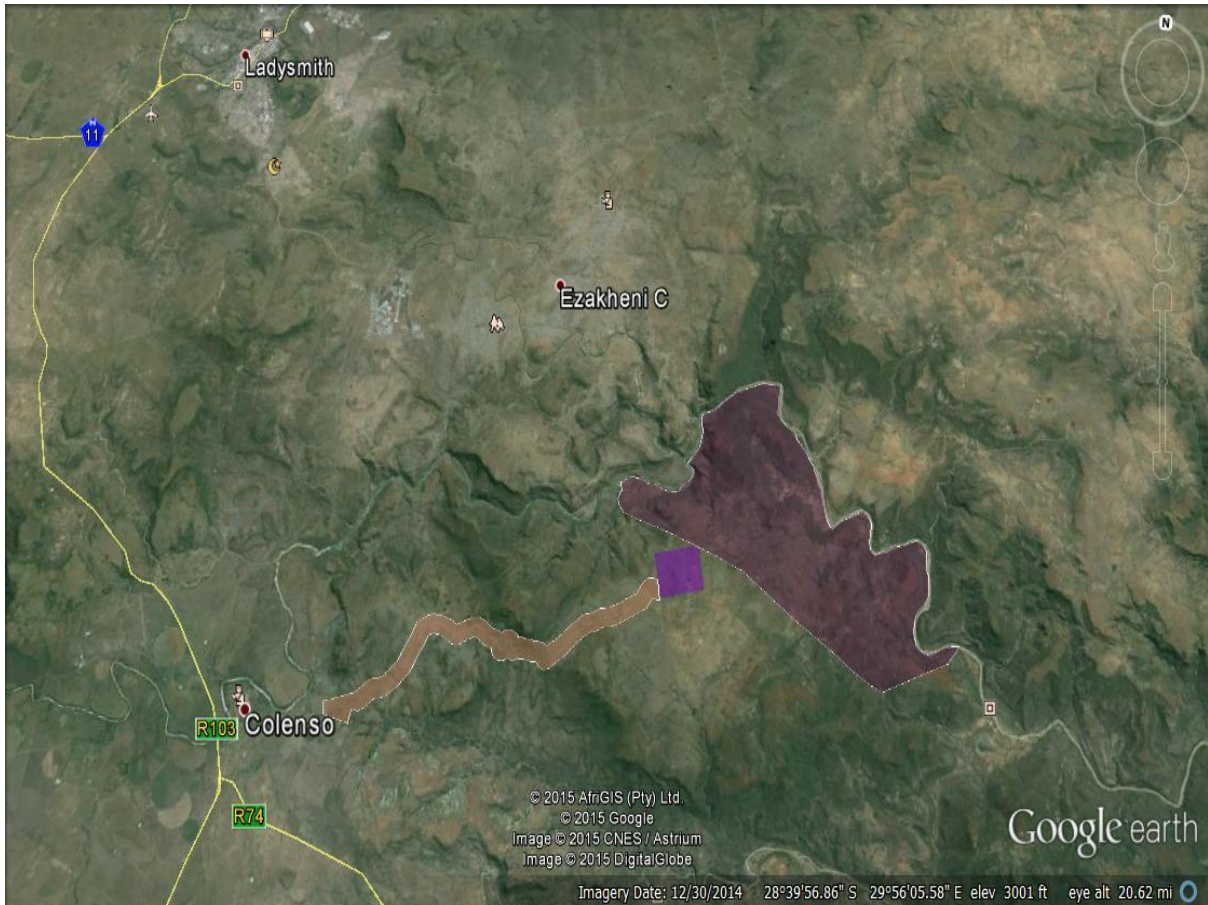


Figure 3: Google Image of location of Power Station (purple square) and future Mining area (Google Earth 2015).



Figure 4: View of a section of the area where the Power Station location is proposed. Looking north-east



Figure 5: Another view of the study area where the Power Station is proposed. Looking north.

6. DISCUSSION

The first part of this discussion will be a summary of the results of the Heritage Scoping Report for the Colenso Project, conducted in 2014 by PGS Heritage that will provide a background to the known archaeological and historical heritage of the study area prior to the 2015 Field Assessment.

The Heritage Scoping Report indicated that for the Earlier Stone Age (2.5 million to 250 000 years ago); Middle Stone Age (250 000 to 40 000 years ago); the Later Stone Age (40 000 years ago to the historic past), as well as for the Early Iron Age (AD200 - 900) and Middle Iron Age (AD900 – 1300), no information on recorded sites in the immediate study area was located during the desktop study by PGS (2014: p.17). No mention is made of the Later Iron Age (AD1300 onwards).

Both Stone Age and Iron Age sites, features and material were identified and recorded during the 2015 field assessment, and will be discussed later on in this document.

The 2014 PGS Report deals mainly with the so-called Colonial/Historical Period, with a fairly large number of sites known in the immediate study and larger geographical area.

The Great Trek that started in 1838 resulted in the conflict between the Zulu, under Dingane, and the Voortrekkers under their leader Piet Retief. The resultant massacre of Retief and his party by Dingane on 6 February 1838 lead to numerous battles and skirmishes over the next year. These include, Ithaleri, Blood River, Saailager, Rensburg Koppie, Veglaer and Bloukrans. After the massacre of Retief, Dingane dispatched his impi to kill all remaining Boer parties. On the night of 16 February 1838, the laager at Bloukrans was surrounded and

attacked on the morning of 17 February 1838, with approximately 282 Voortrekkers and 250 servants were killed during the Battle of Bloukrans. Colenso was established as a wagon stop in 1855 at Commando Drift, a crossing on the Tugela River. This crossing was on the main road between the then Colony of Natal and the Republic of the Orange Free State and the South African Republic. The Bulwer Bridge was constructed in 1879 along with a toll house to cross the Tugela and in 1886 the railway bridge was opened to the east of the Bulwer bridge. Colenso and the crossings of the Thukela River played a major part in the first part of the South African War (1899-1902). Between December 1899 and February 1900 a number of battles and skirmishes took place on the Natal front around Colenso (PGS 2014: 17 – 19).

The known historical heritage resources (PGS 2014: 43) include the site of the Battle of Bloukrans (1838) 6.5km to the south of the study area, to sites in and straddling the study area with their associated monuments, graves and cemeteries:

1. Battle of Colenso (16 December 1899),
2. Battle of Thukela Heights that comprised of the battles and skirmishes at:
3. Hlangwane Hill – 19 February 1900
4. Monte Cristo – 18 February 1900
5. Cingolo Hill – 17 February 1900
6. Horshoe Hill – 21 February 1900
7. Wynne's Hill – 21 February 1900
- 8 Hart's Hill – 23 February 1900
9. Pieters Hill – 27 February 1900

Another recent historical site is the Colenso Power Station that was constructed by the South African Railway Administration for the electrification of the Natal main line between the Glencoe Junction and Pietermaritzburg. The implementation of the line and power station took place in June 1926. The construction commenced in November 1922 and by 1925 construction was completed. During the same time the barrage in the Tugela River was completed by 1926. In January 1927 the power station was taken over by Escom, with a number of buildings and other additions done over the years up to its decommissioning in 1985 (PGS 2014: 21-22). The 2014 field work by PGS (p.30) also identified a Muslim cemetery situated inside one of the coal staging and water treatment alternatives, this alternative also contained the remains of the historical Colenso Power Station of which some of the buildings were still in use.

The Heritage Scoping Report indicated that the Colenso Power project area did have numerous heritage resources of national value situated inside the study area. These resources provide a significant interaction with the natural environment to produce a cultural landscape of high cultural heritage significance (PGS 2014: 42). The 2014 report also recommended that a detailed HIA of the area had to be undertaken once the final footprint for the development actions had been determined. This was subsequently adhered to and the 2015 Assessment is the result of these recommendations. The current preferred Power Plant Alternative site will not impact on the recent known historical sites identified and recorded by PGS in their Scoping Report, although a number of Stone Age, Iron Age and other recent historical sites, features and material of significance will be negatively impacted. The results of the fieldwork conducted during 2015 are discussed below.

A search in the Chief Surveyor General's database (www.csg.dla.gov.za) provided evidence on the dates for the granting and surveying of the farms and farm portions in the study area

(the mid to late 1800's and early to mid 20th centuries), but provided no evidence on the existence of any historically significant sites or features on these land parcels.

Study Area Assessment

A number of recordings were made during the 2015 assessment of the Power Plant Alternative Area. The finds include Stone Age scatters (open-air sites), Iron Age and more recent sites. The results of the assessment follow in the next section.

POWER PLANT ALTERNATIVE AREA

The area is relatively flat and open, and sections have been impacted by agricultural activities such as ploughing, while cattle and other livestock are kept in the area as well. Grazing has also impacted on the vegetation of the area. As a result the trees are fairly small throughout. Another characteristic of the area is the red sandy soils and erosion dongas caused by overgrazing.

Site 1 - Farmstead

This site contains a farmstead and related outbuildings, of which some were built of sandstone. Although the original farm house could be older than 60 years of age, it has been altered to a large degree over the years and is therefore of very little heritage significance. The age of the associated buildings is not known but is likely less than 60 years of age and not of any heritage significance. Some rondavels are present, and the farmstead and related structures probably formed part of the Tugela Game Ranch located here.

GPS Location: S28.69939 E29.95283

Cultural Significance: Low

Heritage Significance: N/A

Field Ratings: General protection C (IV C): phase 1 is seen as sufficient recording and it may be demolished (low significance).

Mitigation: From a Heritage point of view none required. Could be utilized as part of development



Figure 9: Site 1.



Figure 10: Outbuilding related to Site 1.



Figure 11: Another view of homestead.



Figure 12: Back view of homestead at Site 1.



Figure 13: The open nature of the area is visible here.



Figure 14: Large sections of the Power Plant area is characterized by red, sandy soils.

Sites 2 & 3 – Possible Graves

Both these features are stone packed, without any headstones though, and are the size and shape typical of graves. One of the stone cairns (Site No.3) has a ploughshare on it, an object sometimes associated with graves. Social consultation should be undertaken to determine if these are indeed graves and if there are any further low, stone-packed or unmarked graves in the study area.

GPS Location: S28.70072 E29.95582 (Site 2) & S28.70007 E29.95563 (Site 3)

Cultural Significance: High – Graves always carry a High Cultural Significance

Heritage Significance: Grade III: Other heritage resources of local importance and therefore worthy of conservation

Field Ratings: Local Grade IIIB: should be included in the heritage register and may be mitigated (high/ medium significance)

Mitigation: Fence-off and manage/protect. If required then the graves could be exhumed and relocated after the necessary permissions have been provided and detailed social consultation has been undertaken.



Figure 15: Possible Grave (Site 2).



Figure 16: Possible Grave (Site 3).

Sites 4; 5 & 8 – Single piece of pottery (4), broken lower grinding stone (5) & broken upper grinder (8)

All three finds are out of context (not associated with an identified settlement in the area), but probably related to Later Iron Age habitation and activities. The pottery piece is very small and undecorated and cannot be used to determine the relative age of the material finds and the

cultural identity of the occupants of the area. Because these objects are out of context their archaeological significance is low.

GPS Location: S28.69622 E29.95812 (Site 4); S28.69732 E29.95633 (Site 5) & S28.69723 E29.96360 (8)

Cultural Significance: Low

Heritage Significance: N/A

Field Ratings: General protection C (IV C): phase 1 is seen as sufficient recording and it may be demolished (low significance.

Mitigation: None required.



Figure 17: Undecorated piece of pottery.



Figure 18: Broken lower grinding stone (Site 5).



Figure 19: Broken upper grinder (Site 8).

Site 6 – Stone platform

This could be a granary stand or a small enclosure of which the wall had collapsed. An upper grinding stone was found in close proximity of this feature. No other stone walling were recorded in the immediate area.

GPS Location: S28.69529 E29.95559

Cultural Significance: Low

Heritage Significance: N/A

Field Ratings: General protection C (IV C): phase 1 is seen as sufficient recording and it may be demolished (low significance)

Mitigation: None required



Figure 20: Site 6 – Stone packed feature.

Site 7 – Stone Age tool scatter

This site consists of a low density scatter of individual MSA/LSA stone tools and flakes located in and around an erosion donga in the area. These dongas are caused by overgrazing and by livestock tracks cutting through the area.

GPS Location: S28.69648 E29.96249 & S28.69659 E29.96265

Cultural Significance: Low

Heritage Significance: N/A

Field Ratings: General protection C (IV C): phase 1 is seen as sufficient recording and it may be demolished (low significance)

Mitigation: None required



Figure 21: Two stone tools found on Site 7.

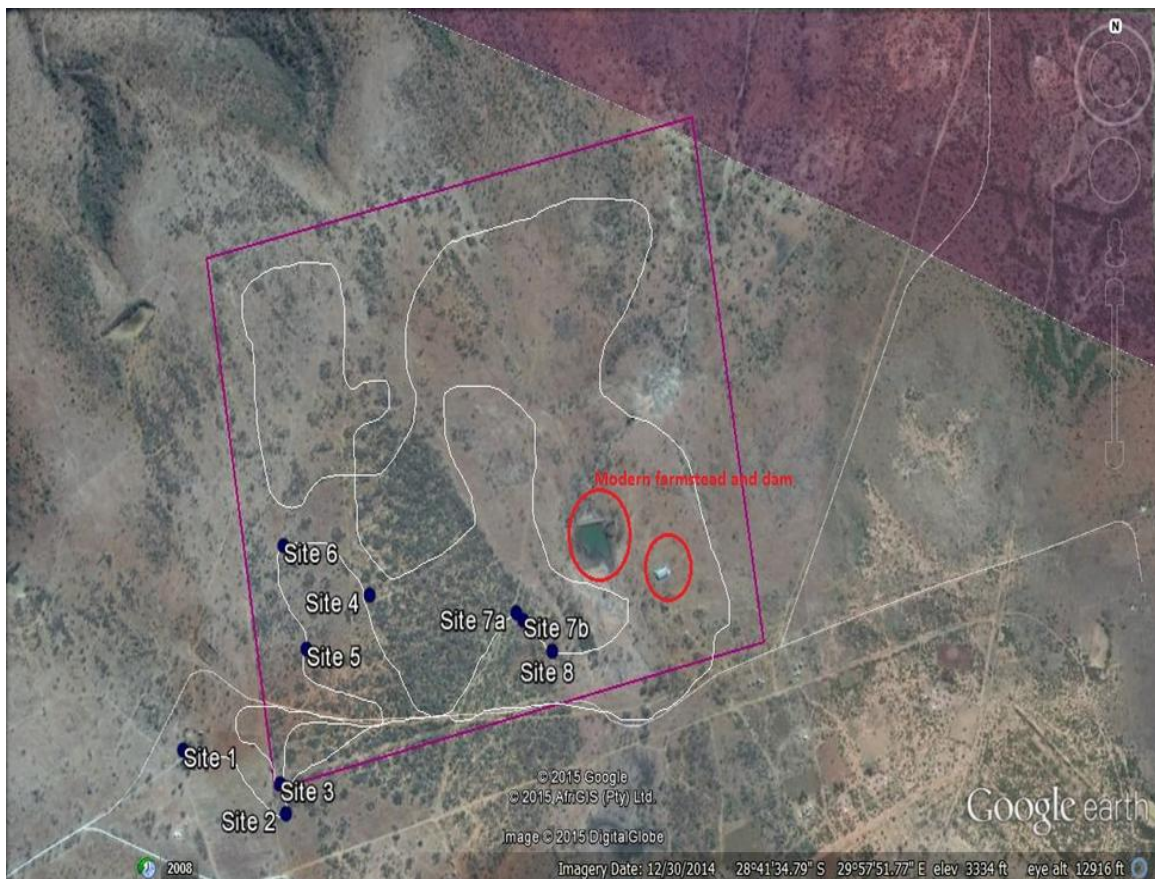


Figure 22: Aerial view of Power Plant preferred location showing sites recorded & tracks followed during assessment (Google Earth 2015).

The following mitigation measures regarding the cultural heritage sites in the Power plant Area are made:

1. Possible Graves (Sites 2 & 3): Fence-off and manage/protect. If required then the graves could be exhumed and relocated after the necessary permissions have been provided and detailed social consultation has been undertaken.

The Phase 1 assessment for the other sites found here is seen as sufficient and no further mitigation is required.

7. CONCLUSIONS AND RECOMMENDATIONS

In conclusion it is possible to say that the Phase 1 HIA for the Colenso Power Project, located on various farms and farm portions, have been conducted successfully. Previous work (a Baseline Heritage study in 2014 by PGS) indicated that a fairly large number of mainly Historical period sites (Anglo-Boer War 1899-1902 mostly) are known to be located close to and within the Project Study area. Many of these sites would have been impacted to some extent by the proposed development activities at the time, and mitigation measures to minimize these impacts were proposed in this report. One of the recommendations was a detailed Impact Assessment, subsequently done by the author of this document. The Baseline study did not identify any archaeological resources such as Stone Age or Iron Age sites in the study area and as the 2015 assessment indicated there are a number of these sites within the Project Area. It should also be mentioned that the 2015 HIA only focused on the preferred Power Plant Alternative. Please note that the original conveyor corridor, as well as some of the other development activities, was excluded from this assessment.

A number of limitations to the assessment should also be mentioned here. Limited time available makes it difficult to cover such a large area in its entirety, and the focus was therefore to a large extent on visiting easily accessible areas and areas suitable for human habitation and settlement. The Specialist Team also concentrated on areas such as erosion dongas, unnatural clumps of trees and vegetation, the foothills of ridges and larger hills and saddles in between hills, where evidence of human utilization would more easily be visible. It is therefore possible that more sites than those physically recorded could be present in the study area. However, aerial images (Google Earth) assisted in determining the localities of more archaeological and historical sites as is indicated on the Site Maps/Images of the area.

Power Plant Alternative Area

Eight (8) sites are located close to or in the Power Plant Alternative area. None of these, except the two possible graves recorded, have any heritage significance, and no mitigation measures are recommended for these sites. The following mitigation measures regarding the graves are made:

Graves Sites 2 & 3 should be fenced off and managed/protected. If required then the graves could be exhumed and relocated after the necessary permissions have been provided and detailed social consultation has been undertaken.

Finally, from a cultural heritage point of view the development of both the Power Plant should be allowed to continue once the mitigation measures above have been implemented. Furthermore, the subterranean presence of archaeological or historical sites, features or objects is always a possibility. Should any be uncovered during the development process an archaeologist should be called in to investigate and recommend on the best way forward. The presence of low stone packed or unmarked graves should always also be kept in mind.

8. REFERENCES

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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 coincidental find of movable cultural objects.

Object: Artifact (cultural object).

(Also see Knudson 1978: 20).

APPENDIX B
DEFINITION/ STATEMENT OF HERITAGE SIGNIFICANCE:

Historic value: Important in the community or pattern of history or has an association with the life or work of a person, group or organization of importance in history.

Aesthetic value: Important in exhibiting particular aesthetic characteristics valued by a community or cultural group.

Scientific value: Potential to yield information that will contribute to an understanding of natural or cultural history or is important in demonstrating a high degree of creative or technical achievement of a particular period

Social value: Have a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons.

Rarity: Does it possess uncommon, rare or endangered aspects of natural or cultural heritage.

Representivity: Important in demonstrating the principal characteristics of a particular class of natural or cultural places or object or a range of landscapes or environments characteristic of its class or of human activities (including way of life, philosophy, custom, process, land-use, function, design or technique) in the environment of the nation, province region or locality.

APPENDIX C SIGNIFICANCE AND FIELD RATING:

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

Field ratings:

- i. National Grade I significance: should be managed as part of the national estate
- ii. Provincial Grade II significance: should be managed as part of the provincial estate
- iii. Local Grade IIIA: should be included in the heritage register and not be mitigated (high significance)
- iv. Local Grade IIIB: should be included in the heritage register and may be mitigated (high/medium significance)
- v. General protection A (IV A): site should be mitigated before destruction (high/medium significance)
- vi. General protection B (IV B): site should be recorded before destruction (medium significance)
- vii. General protection C (IV C): phase 1 is seen as sufficient recording and it may be demolished (low significance)

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

APPENDIX E
HERITAGE IMPACT ASSESSMENT PHASES

1. Pre-assessment or Scoping Phase – Establishment of the scope of the project and terms of reference.
2. Baseline Assessment – Establishment of a broad framework of the potential heritage of an area.
3. Phase I Impact Assessment – Identifying sites, assess their significance, make comments on the impact of the development and makes recommendations for mitigation or conservation.
4. Letter of recommendation for exemption – If there is no likelihood that any sites will be impacted.
5. Phase II Mitigation or Rescue – Planning for the protection of significant sites or sampling through excavation or collection (after receiving a permit) of sites that may be lost.
6. Phase III Management Plan – For rare cases where sites are so important that development cannot be allowed.