
**HERITAGE SURVEY OF THE PROPOSED PIPELINE
FROM ALEXANDRIA TO CANNON ROCKS RO,
EASTERN CAPE**

FOR COASTAL ENVIRONMENTAL SERVICES

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INTRODUCTION

Umlando was contracted by Coastal Environmental Services to undertake the heritage survey of the proposed centralised desalination of groundwater near Canon Rocks, Eastern Cape. Figures 1 – 3 indicate the affected area.

The development consists of upgrading and installing new pipes for the water reticulation from Cannon Rocks to Alexandria. Portions of existing pipeline will either be replaced, or a new line will run adjacent to it.

The land is mostly used for pasturage, although the Woody Cape Nature Reserve consists of indigenous coastal vegetation. The line also runs adjacent to an existing road in several areas.

The impacts will be:

- trenching for new/old pipeline
- Storage areas
- Site offices

The historical maps indicated that there would be 11 buildings or settlements along the route. However, the survey only recorded three heritage sites along the route. Archaeological visibility was good for most of the line, with the exception of the area through the Woody Cape Nature Reserve,



FIG. 1 GENERAL LOCATION OF THE WATER PIPELINE ROUTE



FIG. 2: AERIAL OVERVIEW OF THE WESTERN WATER PIPELINE ROUTE



FIG. 3: TOPOGRAPHICAL MAP OF THE WATER PIPELINE ROUTE

NATIONAL HERITAGE RESOURCES ACT OF 1999

The National Heritage Resources Act of 1999 (pp 12-14) protects a variety of heritage resources. These resources are defined as follows:

1. “For the purposes of this Act, those heritage resources of South Africa which are of cultural significance or other special value for the present community and for future generations must be considered part of the national estate and fall within the sphere of operations of heritage resources authorities.
2. Without limiting the generality of subsection (1), the national estate may include—
 - 2.1. Places, buildings, structures and equipment of cultural significance;
 - 2.2. Places to which oral traditions are attached or which are associated with living heritage;
 - 2.3. Historical settlements and townscapes;
 - 2.4. Landscapes and natural features of cultural significance;
 - 2.5. Geological sites of scientific or cultural importance;
 - 2.6. Archaeological and palaeontological sites;
 - 2.7. Graves and burial grounds, including—
 - 2.7.1. Ancestral graves;
 - 2.7.2. Royal graves and graves of traditional leaders;
 - 2.7.3. Graves of victims of conflict;
 - 2.7.4. Graves of individuals designated by the Minister by notice in the Gazette;
 - 2.7.5. Historical graves and cemeteries; and
 - 2.7.6. Other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983);
3. Sites of significance relating to the history of slavery in South Africa;
 - 3.1. Movable objects, including—
4. Objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens;

- 4.1. Objects to which oral traditions are attached or which are associated with living heritage;
 - 4.2. Ethnographic art and objects;
 - 4.3. Military objects;
 - 4.4. objects of decorative or fine art;
 - 4.5. Objects of scientific or technological interest; and
 - 4.6. books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1(xiv) of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996).
5. Without limiting the generality of subsections (1) and (2), a place or object is to be considered part of the national estate if it has cultural significance or other special value because of—
- 5.1. Its importance in the community, or pattern of South Africa's history;
 - 5.2. Its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
 - 5.3. Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
 - 5.4. Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
 - 5.5. Its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
 - 5.6. Its importance in demonstrating a high degree of creative or technical achievement at a particular period;
 - 5.7. Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
 - 5.8. Its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa; and
 - 5.9. sites of significance relating to the history of slavery in South Africa"

METHOD

The method for Heritage assessment consists of several steps.

The first step forms part of the desktop assessment. Here we would consult the database that has been collated by Umlando. This database contains archaeological site locations and basic information from several provinces (information from Umlando surveys and some colleagues), most of the national and provincial monuments and battlefields in Southern Africa (<http://www.vuvuzela.com/googleearth/monuments.html>) and cemeteries in southern Africa (information supplied by the Genealogical Society of Southern Africa). We use 1st and 2nd edition 1:50 000 topographical and 1937 aerial photographs where available, to assist in general location and dating of buildings and/or graves. The database is in Google Earth format and thus used as a quick reference when undertaking desktop studies. Where required we would consult with a local data recording centre, however these tend to be fragmented between different institutions and areas and thus difficult to access at times. We also consult with an historical architect, palaeontologist, and an historian where necessary.

The survey results will define the significance of each recorded site, as well as a management plan.

All sites are grouped according to low, medium, and high significance for the purpose of this report. Sites of low significance have no diagnostic artefacts or features. Sites of medium significance have diagnostic artefacts or features and these sites tend to be sampled. Sampling includes the collection of artefacts for future analysis. All diagnostic pottery, such as rims, lips, and decorated sherds are sampled, while bone, stone, and shell are mostly noted. Sampling usually occurs on most sites. Sites of high significance are excavated and/or extensively sampled. Those sites that are extensively sampled have high research potential, yet poor preservation of features.

Defining significance

Heritage sites vary according to significance and several different criteria relate to each type of site. However, there are several criteria that allow for a general significance rating of archaeological sites.

These criteria are:

1. State of preservation of:

- 1.1. Organic remains:
 - 1.1.1. Faunal
 - 1.1.2. Botanical
- 1.2. Rock art
- 1.3. Walling
- 1.4. Presence of a cultural deposit
- 1.5. Features:
 - 1.5.1. Ash Features
 - 1.5.2. Graves
 - 1.5.3. Middens
 - 1.5.4. Cattle byres
 - 1.5.5. Bedding and ash complexes

2. Spatial arrangements:

- 2.1. Internal housing arrangements
- 2.2. Intra-site settlement patterns
- 2.3. Inter-site settlement patterns

3. Features of the site:

3.1. Are there any unusual, unique or rare artefacts or images at the site?

3.2. Is it a type site?

3.3. Does the site have a very good example of a specific time period, feature, or artefact?

4. Research:

- 4.1. Providing information on current research projects
- 4.2. Salvaging information for potential future research projects

5. Inter- and intra-site variability

5.1. Can this particular site yield information regarding intra-site variability, i.e. spatial relationships between various features and artefacts?

5.2. Can this particular site yield information about a community's social relationships within itself, or between other communities?

6. Archaeological Experience:

6.1. The personal experience and expertise of the CRM practitioner should not be ignored. Experience can indicate sites that have potentially significant aspects, but need to be tested prior to any conclusions.

7. Educational:

7.1. Does the site have the potential to be used as an educational instrument?

7.2. Does the site have the potential to become a tourist attraction?

7.3. The educational value of a site can only be fully determined after initial test-pit excavations and/or full excavations.

8. Other Heritage Significance:

8.1. Palaeontological sites

8.2. Historical buildings

8.3. Battlefields and general Anglo-Zulu and Anglo-Boer sites

8.4. Graves and/or community cemeteries

8.5. Living Heritage Sites

8.6. Cultural Landscapes, that includes old trees, hills, mountains, rivers, etc related to cultural or historical experiences.

The more a site can fulfill the above criteria, the more significant it becomes. Test-pit excavations are used to test the full potential of an archaeological deposit. This occurs in Phase 2. These test-pit excavations may require further excavations if the site is of significance (Phase 3). Sites may also be mapped and/or have artefacts sampled as a form of mitigation. Sampling normally occurs when the artefacts may be good examples of their type, but are not in a primary archaeological context. Mapping records the spatial relationship between features and artefacts.

TABLE 1: SAHRA GRADINGS FOR HERITAGE SITES

SITE SIGNIFICANCE	FIELD RATING	GRADE	RECOMMENDED MITIGATION
High Significance	National Significance	Grade 1	Site conservation / Site development
High Significance	Provincial Significance	Grade 2	Site conservation / Site development
High Significance	Local Significance	Grade 3A / 3B	
High / Medium Significance	Generally Protected A		Site conservation or mitigation prior to development / destruction
Medium Significance	Generally Protected B		Site conservation or mitigation / test excavation / systematic sampling / monitoring prior to or during development / destruction
Low Significance	Generally Protected C		On-site sampling monitoring or no archaeological mitigation required prior to or during development / destruction

RESULTS

DESKTOP STUDY

The desktop study consisted of analysing various maps for evidence of prior habitation in the study area, as well as for previous archaeological surveys. There have been no archaeological or heritage studies along this exact route, however some have been undertaken nearby (Van Ryneveld 2008; Van Schalkwyk and Wahl 2008; Webley 2007a, 2007b). These surveys recorded general Late Stone Age artefacts, historical buildings and human graves.

The historical maps indicated that there would be several buildings and labourers' houses along the route. Table 2 lists these sites and their co-ordinates. Figure 4 shows the locations of the sites along the line.

TABLE 2: LOCATION OF SITES FROM THE 1966 MAP

NAME	LATITUDE	LONGITUDE	DESCRIPTION
CDW-F01	-33.6597853	26.3909853	Dekselfontein
CDW-F02	-33.7446320	26.4233948	Hollowdene farm buildings
CDW-F03	-33.7464407	26.4270016	Grootvlei
CDW-F05	-33.7402810	26.5222286	Shed
CDW-F06	-33.7207129	26.5806158	Nooitgedacht
CDW-F07	-33.6900660	26.6415788	Buildings
CDW-H01	-33.6656591	26.3916608	Settlement
CDW-H02	-33.6664313	26.3920282	Settlement
CDW-H03	-33.6656291	26.3938047	Settlement
CDW-H04	-33.6686860	26.3955530	Settlement
CDW-H05	-33.6797843	26.3942353	Settlement
CDW-H06	-33.6806049	26.3944612	Settlement
CDW-H07	-33.6797131	26.3970119	Settlement
CDW-H08	-33.6823103	26.3963611	Settlement
CDW-H09	-33.6841234	26.3973933	Settlement
CDW-H10	-33.6830413	26.3983114	Settlement (more houses to NE)
CDW-H11	-33.6831700	26.3947593	Settlement
CDW-H12	-33.7547580	26.4283090	Settlement
CDW-H13	-33.7547894	26.4301548	Settlement
CDW-H14	-33.7394164	26.5644580	Settlement
CDW-H15	-33.7401212	26.5628592	Settlement
CDW-H16	-33.7323117	26.5734188	Settlement

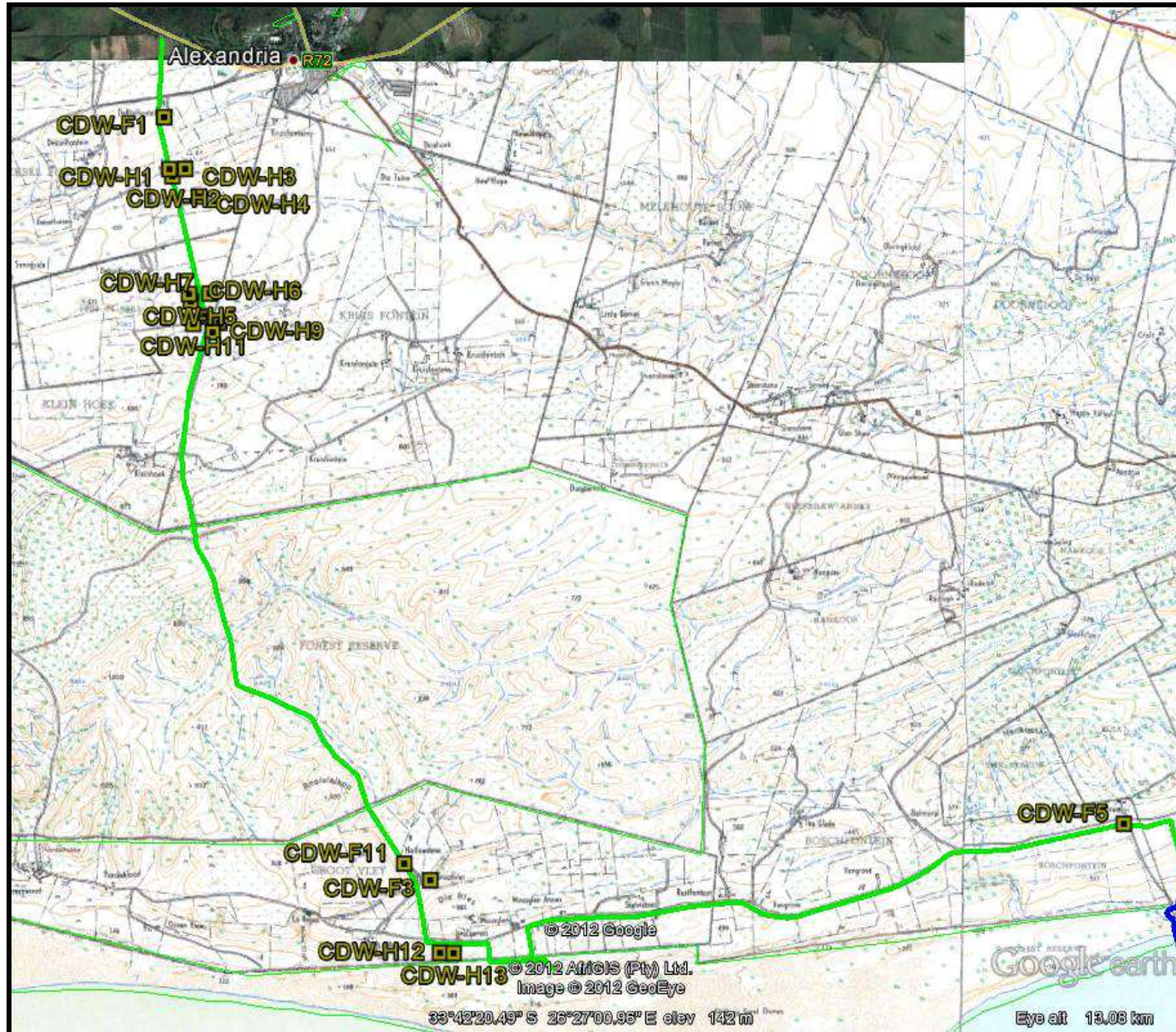


FIG. 4: LOCATION OF SETTLEMENTS ALONG THE WATER PIPELINE ROUTE IN 1964



FIG. 5: LOCATION OF SURVEYED HERITAGE SITES

FIELD SURVEY

Figure 5 shows the locations of the finds, while Table 3 summarises the information.

TABLE 3: LOCATION OF SURVEYED SITES

NAME	LATITUDE	LONGITUDE	DESCRIPTION
CDW-F1	-33.6597853	3909853	Farm house
CF01	-33.6602640	26.3905120	Farm buildings
CDW-F5	-33.740281	26.522229	Farm shed/silo
CDW-H1	-33.6656591	26.3916608	Farm Labourers' houses

CDW-F1

CDW-F1 is the farmhouse, Dekselfontein that appears on the 1966 topographical map. (Fig. 7) – there are several Dekselfonteins in this area and are subdivisions of the original farm. It appears to have little alterations since its initial construction. The pipeline will occur ~50m to the west of the house and will not affect the building.

Significance: The site is of low significance.

Mitigation: No further mitigation is required.

SAHRA Rating: 3C



FIG. 7: FARMHOUSE AT CDW-F1

CR01

CR01 occurs behind the farmhouse CDW-F1 (fig. 8). It is a baked brick structure that is now in ruins. It is probably a shed related to the farm. The building appears to predate the building at CDW-F1. The southern side of the

barn has a row of blue gum trees that appear to be part of a boundary. The pipeline will occur ~50m away from the trees.

Significance: The site is of low significance.

Mitigation: The trees form part of the cultural landscape and should not be damaged.

SAHRA Rating: 3C

CDW-H1

CDW-H1 occurs on the 1955 topographical map and was located during the survey. There are no visible built structures in the area, except for one small rectangular “pit” that has been covered with planks. Much of the area is overgrown (fig. 9). It appears to have little alterations. The pipeline will occur ~50m to the west of the house and will not affect the building. The pipeline will be going through this settlement

Significance: The site is of low significance.

Mitigation: No further mitigation is required; however if a new pipeline is excavated, then the construction crew should be wary of possible human graves.

SAHRA Rating: 3C



FIG. 8: FARMHOUSE AT CDW-F1



FIG. 9: AREA OF CDW-H1

CDW-F5

CDW-F5 is located on the southern side of the road at the entrance to the farm Middel Plaas. The site consists of a shed and two silos that occur on the 1964 map (fig. 11). The shed is in use and has a corrugated iron addition, while the silos appear to be used for general storage.

Significance: The site is of low significance.

Mitigation: No further mitigation is required.

SAHRA Rating: 3C



FIG. 11: BUILDINGS AT CDW-F5

MANAGEMENT PLAN

The pipeline will be avoiding known heritage sites; however, there is one sensitive area that should be highlighted: CDW-H1. The area around CDW-H1 may have subsurface human remains. These would only be visible if exposed during construction phase. If this does occur, then all work in that area needs to be stop, and SAHRA and the SAPS need to be informed immediately. The SAPS needs to be informed as the skeleton would also fall under their jurisdiction; however, they are not allowed to remove any parts.

This part of the southern African coastline has had many shipwrecks since the first Europeans sailed around the tip of Africa. Subsequently, there would be shipwreck survivor camps along this coastline, as the survivors headed for Sofala, Durban, or other settlements in the recent past. These are likely to be ephemeral campsites noticeable by the occurrence of European artefacts. Any possible occurrences that are uncovered during the line construction should be reported to ECO and SAHRA.

Lastly, the area has been converted to pasturage for over 100 years (fig 11). While there are shell middens do occur in this area, they would all be subsurface, only to be exposed during construction activities (see Webley 2007a). If the line route will replace the existing pipeline, then no mitigation is required. Areas such as the Woody Cape Nature Reserve have a limited servitude and the existing line is unlikely to uncover sites (see Fig. 12 for the dense vegetation either side of the servitude). However, if the line is to run parallel to the existing route then certain areas need to be monitored for potential archaeological sites.

The areas that will require monitoring during construction are as follows:

1. Kleinhoek 253
 - a. S33°40'59.73"; E26°23'47.50"E to S33°42'22.46"; E26°23'42.69"
2. Woody Cape Nature Reserve
 - a. S33°42'22.46"; E26°23'42.69" to S33°44'17.28"; E26°25'7.08"
3. Hollowdene
 - a. S33°44'17.28"; E26°25'7.08" to S33°45'11.77"; E26°25'41.88"
4. Cannon Rocks
 - a. s33°44'59.23"; E 26°31'40.96" to S33°45'11.91"; E26°31'45.75"

Any shell middens that are exposed during the course of construction, needs to be reported to the heritage Impact assessor, the ECO and SAHRA immediately.



FIG. 11 PASTURAGE NORTH OF WOODY CAPE NATURE RESERVE



FIG. 12 EXISTING SERVITUDE AT THE WOODY CAPE NATURE RESERVE

CONCLUSION

A heritage survey was undertaken for the proposed Alexandria to Cannon Rocks water pipeline for the Ndlambe Municipality, Eastern Cape. The pipeline will either follow or replace an existing pipeline route. This route runs

through pasturage and the Woody Cape Nature Reserve, as well as following the road reserve.

The heritage survey noted several sites that occur on older maps; however, only four sites were observed during the survey. None of the sites are directly affected. If the existing pipeline is replaced then no monitoring will be required; However if a new pipeline is used, then certain sensitive areas will require monitoring and possible sampling or excavation during construction phase.

REFERENCES

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**APPENDIX A
SITE RECORD FOMS**

