

ESKOM HOLDINGS SOC LIMITED

ENVIRONMENTAL IMPACT ASSESSMENT

FOR THE

**PROPOSED ISUNDU 765/400 KV SUB-STATION
AND TURN-IN TRANSMISSION LINES**

DEA EIA REF: 14/12/16/3/3/2/745; 12/12/20/1397/3/AM2

**Phase 1 Heritage Impact Assessment
Specialist Report**

Report prepared for:

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August 2015

ESKOM HOLDINGS (SOC) LIMITED

PROPOSED ISUNDU 765/400 KV SUB-STATION AND TURN-IN TRANSMISSION LINES

DEA EIA REF: 14/12/16/3/3/2/745; 12/12/20/1397/3/AM2

PROPONENT

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DECLARATION OF INDEPENDENCE

I, Leonard van Schalkwyk, declare that –

- I act as the independent specialist in this application.
- I will perform the work relating to the application in an objective manner even if this results in views and findings that are not favourable to the applicant.
- I declare that there are no circumstances that may compromise my objectivity in performing such work.
- I have no, and will not engage in, conflicting interests in the undertaking of the activity.
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing any decision to be taken with respect to the application by the competent authority; and the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority.
- All the particulars furnished by me in this form are true and correct.

Signed

Leonard van Schalkwyk

August 2015

EXECUTIVE SUMMARY

INTRODUCTION

eThembeni Cultural Heritage was appointed by ACER (Africa) Environmental Management Consultants to undertake a Phase 1 Heritage Impact Assessment of the proposed ISUNDU 765/400 KV Sub-Station and turn-in transmission lines, as required by the National Environmental Management Act 107 of 1998, as amended; in compliance with Section 38 of the National Heritage Resources Act 25 of 1999, as amended.

HERITAGE RESOURCE DESCRIPTIONS AND SIGNIFICANCE

Palaeontology

Within the prevailing lithology of the study area the presence of fossil bearing strata is low. The SAHRIS Palaeo-sensitivity mapping indicates the study area to fall within a blue demarcation and consequently no palaeontological investigations are required.

Places, buildings, structures and equipment

A farm house and ancillary agricultural buildings of the Thorndale farmstead are older than sixty years and therefore generally protected in terms of the KZNHA. Should the farm buildings be proposed for demolition a permit will have to be obtained from Amafa aKwaZulu-Natali. This will further entail an architectural survey and documentation.

CONCLUSION

We recommend that the development proceeds and have submitted this report to Amafa in fulfilment of the requirements of the National Heritage Resources Act. The client may contact Ms Bernadet Pawandiwa at Amafa's Pietermaritzburg office in due course to enquire about the Council's decision.

If permission is granted for the development to proceed, the client is reminded that the Act requires that a developer cease all work immediately and adhere to the protocol described in Section 7 of this report should any heritage resources, as defined in the Act, be discovered during the course of development activities.

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ACRONYMS AND ABBREVIATIONS

AIA	Archaeological Impact Assessment
HIA	Heritage Impact Assessment
KZNHA	KwaZulu-Natal Heritage Act 4 of 2008
NHRA	National Heritage Resources Act 25 of 1999
NEMA	National Environmental Management Act 107 of 1998
PHRA	Provincial Heritage Resources Authority
PIA	Palaeontological Impact Assessment
SAHRA	South African Heritage Resources Agency

1. INTRODUCTION

1.1 Background

As part of Eskom's KZN Strengthening Programme, Eskom intends to increase and strengthen the electricity transmission network to the KZN Midlands and southern KZN region. This is to meet growing demand and to improve service quality and reliability. Since 2009, Eskom has been investigating options to bring a 765 kV transmission line from the Venus Sub-station, near Estcourt, to a new sub-station (Sigma) in the KZN Midlands, with two 400 kV transmission lines from the new Sigma Sub-station linking into the existing Hector and Ariadne Sub-stations. This infrastructure forms a key component of the overall KZN Strengthening Programme.

The proposed Isundu 765/400 kV Sub-station is a replacement to the Sigma Sub-station previously authorised. If the Isundu Sub-station is authorised, the 765 kV transmission line from the Venus Sub-station will need to continue along the authorised transmission line corridor until the Isundu Sub-station. By implication, a single 765 kV transmission line rather than 2 x 400 kV transmission lines will be constructed in the corridor between the Sigma and Isundu sites.

Eskom has submitted an Application for Environmental Authorisation to DEA for the proposed Isundu Sub-station site. In parallel, Eskom has submitted an Authorisation Amendment Application to amend the 2 x 400 kV transmission line authorisation (EIA: 12/12/20/1397/3) to a 765 kV transmission line from the Sigma 1 site to the proposed Isundu Sub-Station.

(See Isundu Sub-Station DSR 22 April 2015 as loaded on SAHRIS Case File.)

In compliance with Section 38 of the National Heritage Resources Act 25 of 1999 (NHRA), a Phase 1 HIA must address the following key aspects (refer to Appendix A for further legislative details):

- the identification and mapping of all heritage resources in the area affected;
- an assessment of the significance of such resources in terms of heritage assessment criteria set out in regulations;
- an assessment of the impact of the development on heritage resources;
- an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development;
- the results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;
- if heritage resources will be adversely affected by the proposed development, the consideration of alternatives; and
- plans for mitigation of any adverse effects during and after completion of the proposed development.

In addition, the HIA should comply with the requirements of the National Environmental Management Act 107 of 1998 (NEMA), including providing the assumptions and limitations associated with the study; the details, qualifications and expertise of the person who prepared the report; and a statement of independence.

The client required further that information must be provided on the following:

- Results of an overview survey of the study area and the identification of heritage resources that may be affected by the proposed infrastructure or which may affect the construction and operation of the proposed infrastructure.
- Recommendations on alternatives where additional alternatives could be identified to avoid negative impacts.
- Recommended mitigation measures for enhancing positive impacts and avoiding or minimizing negative impacts and risks (to be implemented during design, construction and operation).
- Formulation of a protocol or heritage management plan to be followed for the identification, protection or recovery of cultural heritage resources during construction and operation.
- The early identification of any red flag and fatal flaw issues or impacts.
- Address any other sensitivities and important issues from a specialist perspective that are not identified in these terms of reference.

1.1.1 Methodology

Appendix 3 describes the methodology employed for this project, which included drive/walkovers of proposed development areas and a desktop study. Appendix 3 also includes heritage resource significance assessment criteria; development impact assessment criteria; and the assumptions and limitations associated with this project.

2. PROJECT LOCATION AND ENVIRONMENTAL DESCRIPTION

The proposed project is located in the eMkhambathini Local Municipality (KZN226), uMgungundlovu District (DC22) and the relevant 1:50 000 map sheet is 2930DA Cato Ridge. (Figure 1).

The proposed location of the Isundu Sub-Station is at **S29° 39' 50.77"**; **E30° 30' 48.37"** to the east of Ashburton along the P477 (Lion Park Road) on Portion 23 of the Farm Langefontein.

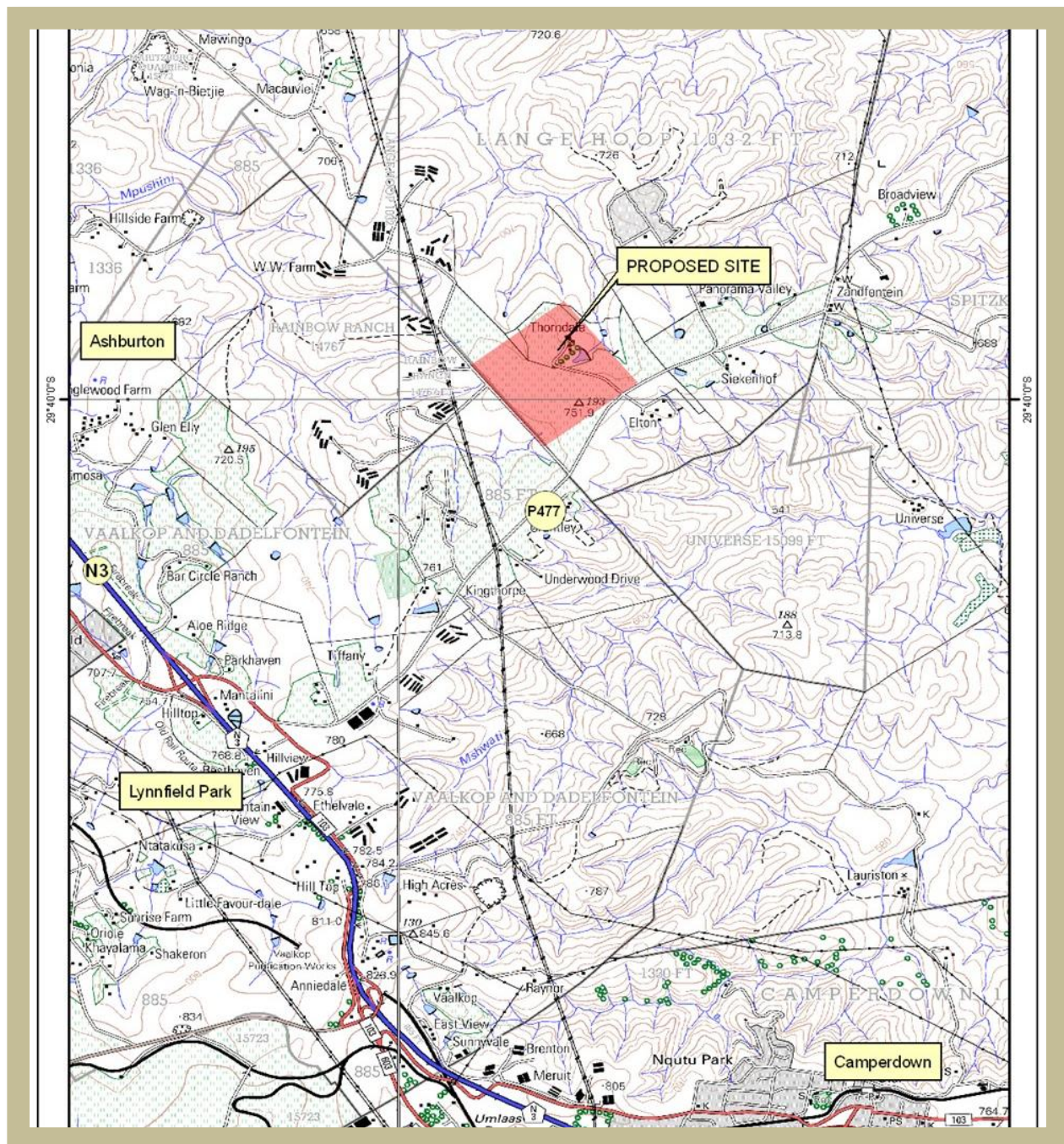


Figure 1 Project area in local context (source: 1:50 000 Topocadastral 2930DA).

3. GEOLOGY AND PALAEOLOGY

The geology of the study area is characterised by the sandstones of the Natal Group which lie unconformably on the Basement Granite Suite. The sandstone rock itself is represented by variable composition relating to different formations within the Natal Group, ranging from a purple/mauve argillaceous forms through to yellowish, brown quartzitic sandstone (Botha 2002).

“From Camperdown the geology adjacent to the N3 is characterised by the tillites of the Dwyka Group. The tillite occurs stratigraphically above the sandstones and there is a general younging of the geological formations in a westerly direction. The occurrence of tillite is affected by numerous block faults, with the tillite becoming exposed in cuttings alternating with the up-thrusted Natal Group sandstones. At Camperdown the shales of the Pietermaritzburg Formation of the Ecca Group begin to manifest in localised areas. The shales overlie the tillite rocks conformably. To the immediate southeast of Pietermaritzburg the tillite gives way to shales completely, except where intruded by Karoo age dolerite. The occurrence of dolerite is frequently easily detected by the prolific growth of aloes. Soil cover over the shale is normally very thinly developed, usually not more than 1 metre in thickness. The soil mantle over the shales usually comprises dark brown to black, gravelly silty clay” (Moor Spence Jones (Pty) Ltd, 2012:9-11).

Within this lithology the presence of fossil bearing strata is low. The SAHRIS Palaeo-sensitivity mapping indicates the study area to fall within a blue demarcation and consequently no palaeontological investigations are required.

4. DESCRIPTION AND SIGNIFICANCE OF HERITAGE RESOURCES

No development activities associated with the proposed project had begun at the time of eThembeni’s field work. Table 1 summarises the heritage resource types assessed, and our observations.

Table 1 Heritage resources types assessed.

Heritage resource type	Observation
Places, buildings, structures and equipment	See below.
Places associated with oral traditions or living heritage	None were identified within the proposed development area.
Landscapes	See below.
Natural features	See below.
Traditional burial places	None were identified within the proposed development area.
Ecofacts	None were identified within the proposed development area.
Geological sites of scientific or cultural importance	None were identified within the proposed development area.
Archaeological sites	None were identified within the proposed development area.
Historical settlements and townscapes	None were identified within the proposed development area.
Public monuments and memorials	None were identified within the proposed development area.
Battlefields	None were identified within the proposed development area.

4.1 Places, buildings, structures and equipment

A farm house and ancillary agricultural buildings of the Thorndale farmstead are older than sixty years and therefore generally protected in terms of the KZNHA.



Figure 2 Main dwelling is described by the occupant as being built with dressed stone that have been plastered over.



Figure 3 Ancillary structures include a farm shed, silo and stone walled animal shelter/shed.

4.1 Landscapes and Natural Features

The Mayibuye “Big Five” Game Reserve is currently being proposed in the valley bushveld below Camperdown, within the study area. It has no declaration status as yet and consequently cannot be assessed as a formally protected area. Proposed 2 x400kV turn-in lines are planned to traverse Mayibuye within the previously authorised corridor..

5. ASSESSMENT OF DEVELOPMENT IMPACT

5.1 Places, buildings, structures and equipment

Should the farm buildings be proposed for demolition a permit will have to be obtained from Amafa aKwaZulu-Natali. This will further entail an architectural survey and documentation.

6. RECOMMENDED MITIGATION MEASURES

6.1 Places, buildings, structures and equipment

None, unless demolition is envisaged.

7 RECOMMENDED MONITORING

7.1 Places, buildings, structures and equipment

None

8 PROTOCOL FOR THE IDENTIFICATION, PROTECTION AND RECOVERY OF HERITAGE RESOURCES DURING CONSTRUCTION AND OPERATION

It is possible that aboveground or sub-surface heritage resources could be encountered during the construction phase of this project. The Environmental Control Officer and all other persons responsible for site management and excavation should be aware that indicators of sub-surface sites could include:

- Ash deposits (unnaturally grey appearance of soil compared to the surrounding substrate);
- Bone concentrations, either animal or human;
- Ceramic fragments, including potsherds;
- Stone concentrations that appear to be formally arranged (may indicate the presence of an underlying burial, or represent building/structural remains); and
- Fossilised remains of fauna and flora, including trees.

In the event that such indicator(s) of heritage resources are identified, the following actions should be taken immediately:

- All construction within a radius of at least 20m of the indicator should cease. This distance should be increased at the discretion of supervisory staff if heavy machinery or explosives could cause further disturbance to the suspected heritage resource.
- This area must be marked using clearly visible means, such as barrier tape, and all personnel should be informed that it is a no-go area.
- A guard should be appointed to enforce this no-go area if there is any possibility that it could be violated, whether intentionally or inadvertently, by construction staff or members of the public.

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- No measures should be taken to cover up the suspected heritage resource with soil, or to collect any remains such as bone or stone.
 - If a heritage practitioner has been appointed to monitor the project, s/he should be contacted and a site inspection arranged as soon as possible.
 - If no heritage practitioner has been appointed to monitor the project, the head of archaeology at Amafa's Pietermaritzburg office should be contacted; telephone 033 3946 543).
 - The South African Police Services should be notified by an Amafa staff member or an independent heritage practitioner if human remains are identified. No SAPS official may disturb or exhume such remains, whether of recent origin or not.
 - All parties concerned should respect the potentially sensitive and confidential nature of the heritage resources, particularly human remains, and refrain from making public statements until a mutually agreed time.
 - Any extension of the project beyond its current footprint involving vegetation and/or earth clearance should be subject to prior assessment by a qualified heritage practitioner, taking into account all information gathered during this initial HIA.

7. CONCLUSION

We recommend that the development proceeds and have submitted this report to Amafa in fulfilment of the requirements of the NHRA. According to Section 38(4) of the Act the report shall be considered timeously by the Council which shall, after consultation with the person proposing the development, decide–

- whether or not the development may proceed;
- any limitations or conditions are to be applied to the development;
- what general protections in terms of the NHRA apply, and what formal protections may be applied to such heritage resources;
- whether compensatory action shall be required in respect of any heritage resources damaged or destroyed as a result of the development; and
- whether the appointment of specialists is required as a condition of approval of the proposal.

The client may contact Ms Bernadet Pawandiwa at Amafa's Pietermaritzburg office (telephone 033 3946 543) in due course to enquire about the Council's decision.

If permission is granted for development to proceed, the client is reminded that the NHRA requires that a developer cease all work immediately and adhere to the protocol described in Section 7 of this report should any heritage resources, as defined in the Act, be discovered during the course of development activities.

8. REFERENCES

Botha G.A and Botha R.C.N. 2002. *Geological Description of Sheet 2930CB Pietermaritzburg Council for Geoscience*. Pietermaritzburg.

Moor Spence Jones (Pty) Ltd. (2012). *Report to the Goba/SSI joint venture on behalf of SANRAL on the geotechnical specialist services for the basic planning study and preliminary design for improvements to National Route 3 sections 1 to 3*.

Wahl, E., & Van Schalkwyk, L. (2007). *Heritage Impact Assessment of Bartlett Residential Estate Phase 1, Hammarsdale, KwaZulu-Natal*. eThembeni Cultural Heritage.

Wahl, E., & Van Schalkwyk, L. (2009). *Heritage Impact Assessment of the Johannesburg to Durban Optical Fibre Network, Gauteng, Mpumalanga, Free State and KwaZulu-Natal Provinces*. eThembeni Cultural Heritage.

Wright, J. (1988). Before Mgungundlovu. In J. Laband, & R. Haswell, *Pietermaritzburg 1838-1988: a new portrait of an African city* (pp. 18-21). Pietermaritzburg: University of Natal Press and Shuter & Shooter.

APPENDIX 1

Relevant Legislation

General

The Constitution of the Republic of South Africa Act 108 of 1996 is the source of all legislation. Within the Constitution the Bill of Rights is fundamental, with the principle that the environment should be protected for present and future generations by preventing pollution, promoting conservation and practising ecologically sustainable development. With regard to spatial planning and related legislation at national and provincial levels the following legislation may be relevant:

- Physical Planning Act 125 of 1991
- Municipal Structures Act 117 of 1998
- Municipal Systems Act 32 of 2000
- Development Facilitation Act 67 of 1995 (DFA)
- KwaZulu-Natal Planning and Development Act 6 of 2008.

The identification, evaluation and management of heritage resources in South Africa is required and governed by the following legislation:

- National Environmental Management Act 107 of 1998 (NEMA)
- KwaZulu-Natal Heritage Act 4 of 2008 (KZNHA)
- National Heritage Resources Act 25 of 1999 (NHRA)
- Minerals and Petroleum Resources Development Act 28 of 2002 (MPRDA)

National Environmental Management Act 107 of 1998

NEMA makes provision for sustainable development in the context of environmental management through the integration of social, economic and environmental factors in the planning, implementation and evaluation of decisions to ensure that development serves present and future generations. Since the environment includes the physical, chemical, aesthetic and cultural properties of the earth, heritage resources must be identified and considered when undertaking sustainable development.

NEMA Section 24 requires all developers to obtain the necessary environmental authorisation prior to undertaking a development. Applications must include the following:

- investigation of the potential consequences or impacts of the development on the environment and assessment of the significance of those potential consequences or impacts, including the option of not implementing the activity;
- investigation of mitigation measures to keep adverse consequences or impacts to a minimum;
- investigation, assessment and evaluation of the impact of any proposed listed or specified activity on any national estate identified in the NHRA;
- reporting on gaps in knowledge, the adequacy of predictive methods and underlying assumptions, and uncertainties encountered in compiling the required information;

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- investigation and formulation of arrangements for the monitoring and management of consequences for or impacts on the environment, and the assessment of the effectiveness of such arrangements after their implementation;
 - consideration of environmental attributes identified in the compilation of information and maps; and
 - provision for the adherence to requirements that are prescribed in a specific environmental management Act relevant to the listed or specified activity in question.

When assessing the environmental impact of any application for an environmental authorisation, the applicant must undertake a public participation process by which potential interested and affected parties are given the opportunity to comment on, or raise issues relevant to, the application. Stakeholders may include communities, defined as follows:

- Any group of persons or a part of such a group who share common interests, and who regard themselves as a community; and
- In relation to environmental matters pertaining to prospecting, mining, exploration, production or related activity on a prospecting, mining, exploration or production area, means a group of historically disadvantaged persons with interest or rights in a particular area of land on which the members have or exercise communal rights in terms of an agreement, custom or law.

National Heritage Resources Act 25 of 1999 (NHRA)

The NHRA established the South African Heritage Resources Agency (SAHRA) together with its Council to fulfil the following functions:

- co-ordinate and promote the management of heritage resources at national level;
- set norms and maintain essential national standards for the management of heritage resources in the Republic and to protect heritage resources of national significance;
- control the export of nationally significant heritage objects and the import into the Republic of cultural property illegally exported from foreign countries;
- enable the provinces to establish heritage authorities which must adopt powers to protect and manage certain categories of heritage resources; and
- provide for the protection and management of conservation-worthy places and areas by local authorities.

Heritage Impact Assessments (HIAs)

Section 38(1) of the NHRA may require an HIA in case of:

- the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
- the construction of a bridge or similar structure exceeding 50m in length;
- any development or other activity which will change the character of a site –
 - (i) exceeding 5 000m² in extent; or
 - (ii) involving three or more existing erven or subdivisions thereof; or
 - (iii) involving three or more erven or subdivisions thereof which have been consolidated within the past five years; or
- the costs of which will exceed a sum set in terms of regulations by SAHRA or a Provincial Heritage Resources Authority (PHRA);
- the re-zoning of a site exceeding 10 000m² in extent; or
- any other category of development provided for in regulations by SAHRA or a PHRA.

Reports in fulfilment of Section 38(3) of the NHRA must include the following information:

- the identification and mapping of all heritage resources in the area affected;
 - an assessment of the significance of such resources in terms of the heritage assessment criteria set out in regulations;
 - an assessment of the impact of the development on such heritage resources;
 - an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development;
 - the results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;
 - if heritage resources will be adversely affected by the proposed development, the consideration of alternatives; and
 - plans for mitigation of any adverse effects during and after completion of the proposed development.
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In addition, the HIA should comply with the requirements of NEMA, including providing the assumptions and limitations associated with the study; the details, qualifications and expertise of the person who prepared the report; and a statement of independence.

It is incumbent upon the developer or Environmental Practitioner to approach the heritage authority to ascertain whether an HIA is required for a project; what categories of heritage resource must be assessed; and request a detailed motivation for such a study in terms of both the nature of the development and the nature of the environment. In this regard Section 38(2) of the NHRA states specifically that 'The responsible heritage resources authority must ... if there is reason to believe that heritage resources will be affected by such development, notify the person who intends to undertake the development to submit an impact assessment report'. In other words, the heritage authority must be able to justify a request for an Archaeological, Palaeontological or Heritage Impact Assessment. The Environmental Practitioner may also submit information to the heritage authority in substantiation of exemption from a specific assessment due to existing environmental disturbance, for example.

KwaZulu-Natal Heritage Act 4 of 2008

The KZNHA is implemented by Amafa aKwaZulu-Natali / Heritage KwaZulu-Natal, the PHRA charged to provide for the conservation, protection and administration of both the physical and the living or intangible heritage resources of the province; along with a statutory Council to administer heritage conservation in the Province.

In KwaZulu-Natal Amafa implements both the KZNHA and the NHRA, the latter in terms of a Memorandum of Understanding with SAHRA. Accordingly, all authorizations in the province required by NEMA in compliance with Section 38 of the NHRA, which governs HIAs, are submitted to and reviewed by Amafa.

Amafa will only advise an applicant of the requirement for an HIA, or comment on an HIA report, upon receipt of a Need and Desirability Application on the SAHRIS website.

Definitions of heritage resources

The Act defines a heritage resource as any place or object of cultural significance i.e. of aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance. This includes, but is not limited to, the following wide range of places and objects:

- living heritage as defined in the National Heritage Council Act 11 of 1999 (cultural tradition; oral history; performance; ritual; popular memory; skills and techniques; indigenous knowledge systems; and the holistic approach to nature, society and social relationships);
- ecofacts (non-artefactual organic or environmental remains that may reveal aspects of past human activity; definition used in KwaZulu-Natal Heritage Act 2008);
- places, buildings, structures and equipment;
- places to which oral traditions are attached or which are associated with living heritage;
- historical settlements and townscapes;
- landscapes and natural features;

- geological sites of scientific or cultural importance;
- archaeological and palaeontological sites;
- graves and burial grounds;
- public monuments and memorials;
- sites of significance relating to the history of slavery in South Africa;
- movable objects, but excluding any object made by a living person; and
- battlefields.

Furthermore, a place or object is to be considered part of the national estate if it has cultural significance or other special value because of—

- its importance in the community, or pattern of South Africa's history;
- its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
- its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- its importance in demonstrating a high degree of creative or technical achievement at a particular period;
- its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons; and
- its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa.

Archaeological means –

- material remains resulting from human activity which are in a state of disuse and are in or on land and are older than 100 years, including artefacts, human and hominid remains and artificial features and structures;
- rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and is older than 100 years including any area within 10m of such representation;
- wrecks, being any vessel or aircraft, or any part thereof, which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the culture zone of the Republic, as defined respectively in sections 3, 4 and 6 of the Maritime Zones Act 15 of 1994, and any cargo, debris or artefacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation;
- features, structures and artefacts associated with military history which are older than 75 years and the sites on which they are found.

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Palaeontological

means any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site which contains such fossilised remains or trace.

A **place** is defined as:

- a site, area or region;
- a building or other structure which may include equipment, furniture, fittings and articles associated with or connected with such building or other structure;
- a group of buildings or other structures which may include equipment, furniture, fittings and articles associated with or connected with such group of buildings or other structures;
- an open space, including a public square, street or park; and
- in relation to the management of a place, includes the immediate surroundings of a place.

Public monuments and memorials means all monuments and memorials:

- erected on land belonging to any branch of central, provincial or local government, or on land belonging to any organisation funded by or established in terms of the legislation of such a branch of government; or
- which were paid for by public subscription, government funds, or a public-spirited or military organisation, and are on land belonging to any private individual.

Structures 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.

Management of Graves and Burial Grounds

– Definitions

Grave

The NHRA defines a grave as a place of interment and includes the contents, headstone or other marker of such a place, and any other structure on or associated with such a place. The KwaZulu-Natal Cemeteries and Crematoria Act 12 of 1996 defines a grave as an excavation in which human remains have been intentionally placed for the purposes of burial, but excludes any such excavation where all human remains have been removed.

Burial ground

The term 'burial ground' does not appear to have a legal definition. In common usage the term is used for management purposes to describe two or more graves that are grouped closely enough to be managed as a single entity.

Cemetery

The KwaZulu-Natal Cemeteries and Crematoria Act 1996 defines a cemetery as any place

- (a) where human remains are buried in an orderly, systematic and pre-planned manner in identifiable burial plots;
- (b) which is intended to be permanently set aside for and used only for the purposes of the burial of human remains.

– **Protection of graves and cemeteries**

No person may damage, alter, exhume, or remove from its original position any grave, as defined above, without permission from the relevant authority, as detailed in the following table.

Grave type	Relevant legislation	Administrative authority – disinterment	Administrative authority – reburial
Graves located within a formal cemetery administered by a local authority	KwaZulu-Natal Cemeteries and Crematoria Act 12 of 1996	National and / or Provincial Departments of Health	If relocated to formal cemetery – relevant local authority.
Graves younger than 100 years located outside a formal cemetery administered by a local authority and the graves of victims of conflict	KwaZulu-Natal Heritage Act 4 of 2008 KwaZulu-Natal Cemeteries and Crematoria Amendment Act 2 of 2005	Amafa aKwaZulu-Natali, the provincial heritage resources authority	If relocated to private or communal property – Amafa. If relocated to formal cemetery – Amafa and relevant local authority.

– **Procedures required for permission to disinter and rebury graves**

The procedure for consultation regarding burial grounds and graves (Section 36 of the NHRA) is applicable to all graves located outside a formal cemetery administered by a local authority. The following extract from this legislation is applicable to this policy document:

SAHRA or Amafa may not issue a permit for any alteration to or disinterment or reburial of a grave unless it is satisfied that the applicant has, in accordance with regulations made by the responsible heritage resources authority—

- (a) made a concerted effort to contact and consult communities and individuals who by tradition have an interest in such grave or burial ground; and
- (b) reached agreements with such communities and individuals regarding the future of such grave or burial ground.

Any person who in the course of development or any other activity discovers the location of a grave, the existence of which was previously unknown, must immediately cease such activity and report the discovery to the responsible heritage resources authority which must, in co-operation with the South African Police Services and in accordance with regulations of the responsible heritage resources authority—

- (a) carry out an investigation for the purpose of obtaining information on whether or not such grave is protected in terms of this Act or is of significance to any community; and
- (b) if such grave is protected or is of significance, assist any person who or community which is a direct descendant to make arrangements for the exhumation and re-interment of the contents of such grave or, in the absence of such person or community, make any such arrangements as it deems fit.

The Vermillion Accord on Human Remains¹

Adopted in 1989 at WAC Inter-Congress, South Dakota, USA

1. Respect for the mortal remains of the dead shall be accorded to all, irrespective of origin, race, religion, nationality, custom and tradition.
2. Respect for the wishes of the dead concerning disposition shall be accorded whenever possible, reasonable and lawful, when they are known or can be reasonably inferred.
3. Respect for the wishes of the local community and of relatives or guardians of the dead shall be accorded whenever possible, reasonable and lawful.
4. Respect for the scientific research value of skeletal, mummified and other human remains (including fossil hominids) shall be accorded when such value is demonstrated to exist.
5. Agreement on the disposition of fossil, skeletal, mummified and other remains shall be reached by negotiation on the basis of mutual respect for the legitimate concerns of communities for the proper disposition of their ancestors, as well as the legitimate concerns of science and education.
6. The express recognition that the concerns of various ethnic groups, as well as those of science are legitimate and to be respected, will permit acceptable agreements to be reached and honoured.

¹ <http://www.worldarchaeologicalcongress.org/>

APPENDIX 2

Methodology

Site survey

eThembeni staff members inspected the proposed activity area on 21 and 22 July 2015. and completed a controlled-exclusive surface survey, where 'sufficient information exists on an area to make solid and defensible assumptions and judgements about where [heritage resource] sites may and may not be' and 'an inspection of the surface of the ground, wherever this surface is visible, is made, with no substantial attempt to clear brush, turf, deadfall, leaves or other material that may cover the surface and with no attempt to look beneath the surface beyond the inspection of rodent burrows, cut banks and other exposures that are observed by accident' (King 1978; see bibliography for other references informing methodological approach).

The site survey comprised a drive/walkover visual survey of the proposed activity area where vegetation density and terrain allowed. Geographic coordinates were obtained using a handheld Garmin global positioning unit (WGS 84).

Database and literature review

Existing maps and Google Earth imagery were studied in detail prior to and during fieldwork. Existing specialist reports, including research papers and HIA reports, were reviewed where relevant and available, including Wahl & Van Schalkwyk (2007, 2009). Archaeological site data was sought for the project area from the Natal Museum database. A concise account of the archaeology of the broader study area was compiled from sources including those listed in the bibliography.

Assessment of heritage resource value and significance

Heritage resources are significant only to the extent that they have public value, as demonstrated by the following guidelines for determining site significance developed by Heritage Western Cape (HWC 2007) and utilised during this assessment.

Grade I Sites (National Heritage Sites)

Regulation 43 Government Gazette no 6820. 8 No. 24893 30 May 2003, Notice No. 694 states that: Grade I heritage resources are heritage resources with qualities so exceptional that they are of special national significance should be applied to any heritage resource which is

- a) Of outstanding significance in terms of one or more of the criteria set out in section 3(3) of the NHRA;
- b) Authentic in terms of design, materials, workmanship or setting; and is of such universal value and symbolic importance that it can promote human understanding and contribute to nation building, and its loss would significantly diminish the national heritage.

1. Is the site of outstanding national significance?
2. Is the site the best possible representative of a national issue, event or group or person of national historical importance?
3. Does it fall within the proposed themes that are to be represented by National Heritage Sites?
4. Does the site contribute to nation building and reconciliation?
5. Does the site illustrate an issue or theme, or the side of an issue already represented by an existing National Heritage Site – or would the issue be better represented by another site?
6. Is the site authentic and intact?
7. Should the declaration be part of a serial declaration?
8. Is it appropriate that this site be managed at a national level?
9. What are the implications of not managing the site at national level?

Grade II Sites (Provincial Heritage Sites)

Regulation 43 Government Gazette no 6820. 8 No. 24893 30 May 2003, Notice No. 694 states that: Grade II heritage resources are those with special qualities which make them significant in the context of a province or region and should be applied to any heritage resource which -

- a) is of great significance in terms of one or more of the criteria set out in section 3(3) of the NHRA; and
- (b) enriches the understanding of cultural, historical, social and scientific development in the province or region in which it is situated, but that does not fulfil the criteria for Grade 1 status.

Grade II sites may include, but are not limited to –

- (a) places, buildings, structures and immovable 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 natural features of cultural significance;
- (e) geological sites of scientific or cultural importance;
- (f) archaeological and palaeontological sites; and
- (g) graves and burial grounds.

The cultural significance or other special value that Grade II sites may have, could include, but are not limited to –

- (a) its importance in the community or pattern of the history of the province;
 - (b) the uncommon, rare or endangered aspects that it possess reflecting the province's natural or cultural heritage
 - (c) the potential that the site may yield information that will contribute to an understanding of the province's natural or cultural heritage;
-

- (d) its importance in demonstrating the principal characteristics of a particular class of the province's natural or cultural places or objects;
- (e) its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group in the province;
- (f) its importance in demonstrating a high degree of creative or technical achievement at a particular period in the development or history of the province;
- (g) its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons; and
- (h) its strong or special association with the life or work of a person, group or organization of importance in the history of the province.

Grade III (Local Heritage Resources)

Regulation 43 Government Gazette no 6820. 8 No. 24893 30 May 2003, Notice No. 694 states that: Grade III heritage status should be applied to any heritage resource which

- (a) fulfils one or more of the criteria set out in section 3(3) of the NHRA; or
- (b) in the case of a site contributes to the environmental quality or cultural significance of a larger area which fulfils one of the above criteria, but that does not fulfill the criteria for Grade 2 status.

Grade IIIA

This grading is applied to buildings and sites that have sufficient intrinsic significance to be regarded as local heritage resources; and are significant enough to warrant any alteration being regulated. The significances of these buildings and/or sites should include at least some of the following characteristics:

- Highly significant association with a
 - historic person
 - social grouping
 - historic events
 - historical activities or roles
 - public memory
- Historical and/or visual-spatial landmark within a place
- High architectural quality, well-constructed and of fine materials
- Historical fabric is mostly intact (this fabric may be layered historically and/or past damage should be easily reversible)
- Fabric dates to the early origins of a place
- Fabric clearly illustrates an historical period in the evolution of a place
- Fabric clearly illustrates the key uses and roles of a place over time
- Contributes significantly to the environmental quality of a Grade I or Grade II heritage resource or a conservation/heritage area

Such buildings and sites may be representative, being excellent examples of their kind, or may be rare: as such they should receive maximum protection at local level.

Grade IIIB

This grading is applied to buildings and/or sites of a marginally lesser significance than grade IIIA; and such marginally lesser significance argues against the regulation of internal alterations. Such

buildings and sites may have similar significances to those of a grade IIIA building or site, but to a lesser degree. Like grade IIIA buildings and sites, such buildings and sites may be representative, being excellent examples of their kind, or may be rare, but less so than grade IIIA examples: as such they should receive less stringent protection than grade IIIA buildings and sites at local level and internal alterations should not be regulated (in this context).

Grade IIIC

This grading is applied to buildings and/or sites whose significance is, in large part, a significance that contributes to the character or significance of the environs. These buildings and sites should, as a consequence, only be protected and regulated if the significance of the environs is sufficient to warrant protective measures. In other words, these buildings and/or sites will only be protected if they are within declared conservation or heritage areas.

Assessment of development impacts

A heritage resource impact may be defined broadly as the net change, either beneficial or adverse, between the integrity of a heritage site with and without the proposed development. Beneficial impacts occur wherever a proposed development actively protects, preserves or enhances a heritage resource, by minimising natural site erosion or facilitating non-destructive public use, for example. More commonly, development impacts are of an adverse nature and can include:

- destruction or alteration of all or part of a heritage site;
- isolation of a site from its natural setting; and / or
- introduction of physical, chemical or visual elements that are out of character with the heritage resource and its setting.

Beneficial and adverse impacts can be direct or indirect, as well as cumulative, as implied by the aforementioned examples. Although indirect impacts may be more difficult to foresee, assess and quantify, they must form part of the assessment process. The following assessment criteria have been used to assess the impacts of the proposed development on identified heritage resources:

Criteria	Rating Scales	Notes
Nature	Positive	An evaluation of the type of effect the construction, operation and management of the proposed development would have on the heritage resource.
	Negative	
	Neutral	
Extent	Low	Site-specific, affects only the development footprint.
	Medium	Local (limited to the site and its immediate surroundings, including the surrounding towns and settlements within a 10 km radius);
	High	Regional (beyond a 10 km radius) to national.
Duration	Low	0-4 years (i.e. duration of construction phase).
	Medium	5-10 years.
	High	More than 10 years to permanent.
Intensity	Low	Where the impact affects the heritage resource in such a way that its significance and value are minimally affected.
	Medium	Where the heritage resource is altered and its significance and value are measurably reduced.
	High	Where the heritage resource is altered or destroyed to the extent that its significance and value cease to exist.
Potential for impact on irreplaceable resources	Low	No irreplaceable resources will be impacted.
	Medium	Resources that will be impacted can be replaced, with effort.
	High	There is no potential for replacing a particular vulnerable resource that will be impacted.

Criteria	Rating Scales	Notes
Consequence (a combination of extent, duration, intensity and the potential for impact on irreplaceable resources).	Low	A combination of any of the following: - Intensity, duration, extent and impact on irreplaceable resources are all rated low. - Intensity is low and up to two of the other criteria are rated medium. - Intensity is medium and all three other criteria are rated low.
	Medium	Intensity is medium and at least two of the other criteria are rated medium.
	High	Intensity and impact on irreplaceable resources are rated high, with any combination of extent and duration. Intensity is rated high, with all of the other criteria being rated medium or higher.
Probability (the likelihood of the impact occurring)	Low	It is highly unlikely or less than 50 % likely that an impact will occur.
	Medium	It is between 50 and 70 % certain that the impact will occur.
	High	It is more than 75 % certain that the impact will occur or it is definite that the impact will occur.
Significance (all impacts including potential cumulative impacts)	Low	Low consequence and low probability. Low consequence and medium probability. Low consequence and high probability.
	Medium	Medium consequence and low probability. Medium consequence and medium probability. Medium consequence and high probability. High consequence and low probability.
	High	High consequence and medium probability. High consequence and high probability.

Assumptions and limitations of this HIA

- The description of the proposed project, provided by the client, is accurate.
- The public consultation process undertaken as part of the Environmental Impact Assessment is sufficient and adequate and does not require repetition as part of the heritage impact assessment.
- Soil surface visibility varied from good to non-existent. Heritage resources might be present below the surface or in areas of dense vegetation and we remind the client that the NHRA requires that a developer cease all work immediately and observe the protocol in Section 7 of this report should any heritage resources, as defined in the Act, be discovered during the course of development activities.
- No subsurface investigation (including excavations or sampling) were undertaken, since a permit from Amafa is required to disturb a heritage resource.
- A key concept in the management of heritage resources is that of non-renewability: damage to or destruction of most resources, including that caused by bona fide research endeavours, cannot be reversed or undone. Accordingly, management recommendations for heritage resources in the context of development are as conservative as possible.
- Human sciences are necessarily both subjective and objective in nature. eThembeni staff members strive to manage heritage resources to the highest standards in accordance with national and international best practice, but recognise that their opinions might differ from those of other heritage practitioners.

ESKOM HOLDINGS (SOC) LIMITED

PROPOSED ISUNDU 765/400 KV SUB-STATION AND TURN-IN TRANSMISSION LINES

DEA EIA REF: 14/12/16/3/3/2/745; 12/12/20/1397/3/AM2

-
- Staff members involved in this project have no vested interest in it; are qualified to undertake the tasks as described in the terms of reference; and comply at all times with the Codes of Ethics and Conduct of the Association of Southern African Professional Archaeologists.
 - eThembeni staff members take no personal or professional responsibility for the misuse of the information contained in this report, although they will take all reasonable precautions against such misuse.

APPENDIX 3

CURRICULUM VITAE: LEN VAN SCHALKWYK

Professional Role: Archaeologist / Heritage resources manager

Name of Firm: eThembeni Cultural Heritage

Name of Staff: Leonard Outram van Schalkwyk

Profession: Archaeologist / Business Director

Date of Birth: 7 July 1959

Years with Firm: 11

Nationality: South African

Membership of Professional Societies:

Association of Southern African Professional Archaeologists (ASAPA)

ASAPA Council Member - Cultural Resources Management Portfolio (CRM): 2011-2013

ASAPA CRM Section - listed as Principal Investigator

Amafa aKwaZulu-Natali accredited heritage practitioner

South African Heritage Resources Agency's Archaeological Permit Advisory Committee (2004)

South African member of International Scientific Committee for Archaeological Management, elected by ICOMOS-SA Executive (1999 - 2000)

Provincial Representative: South African World Heritage Convention Committee (1998 - 2000)

Southern African Museums Association (1984 -1999)

KEY QUALIFICATIONS AND RELEVANT EXPERIENCE

Mr van Schalkwyk has 25 years of professional experience as a practising archaeologist and heritage resource manager in South Africa, Botswana and Mozambique. His research interests have focussed on the Iron Age of southern Africa, while his management specialisations are heritage impact assessments, community liaison and ancestral grave management.

Mr van Schalkwyk's key heritage management, tourist guide training and research initiatives include:

- Principal Investigator - survey and excavation of heritage resources in Richards Bay Minerals' concession areas, KwaZulu-Natal, including oral history recording programme with traditional wisdom keepers to ensure appropriate mitigation. Procedures regarding discovery, retrieval and re-interment of human remains negotiated satisfactorily.
- Member of Ministerial Monuments Task Group committee to formulate KwaZulu-Natal Heritage Act No 10 of 1997.
- Implementation of the cultural resources management plan for the uKhahlamba Drakensberg Park (CURE), focussing on rock art management.
- ICOMOS (SA) observer for uKhahlamba Drakensberg Park World Heritage Site assessment.
- Maloti / Drakensberg Transfrontier Conservation and Development Area project for the Global Environment Facility of the World Bank.
- Mnweni Valley cultural landscape management, northern uKhahlamba / Drakensberg - cultural tourist guide training, development of integrated land use and cultural heritage management plan, co-ordination of displays for interpretive centre.
- Reichenau Mission, southern uKhahlamba / Drakensberg - cultural tourist guide training; permaculture design workshop, compilation of infrastructural development plan with local community, including establishment of a community Trust, upgrade of access roads, building restoration, skills training and empowerment.
- Specialist report on coastal zone management of KwaZulu-Natal for Environmental Evaluation Unit of the University of Cape Town.
- Lead consultant - cultural resources assessment of uThukela Water Scheme for Department of Water Affairs and Forestry and Institute of Natural Resources.
- Heritage Practitioner on revised N2 (S) Toll Road EIA report for CCA Environmental Consulting Services.
- Heritage Practitioner on Xolobeni Mining Application (Pondoland) for Ground Water Consulting.
- Fencing and stabilisation of excavated deposits at Border Cave, Ingwavuma district, KZN.
- Curation and stabilisation of excavated MSA deposits at Sibudu Cave for the ACACIA Project, University of Witwatersrand.
- Co-Director of research project with University of Manitoba, Canada on Early Iron Age of KwaZulu-Natal at Ndondondwane. Fieldwork and analysis ongoing.
- Excavation of middens at King Shaka's KwaBulawayo iKhanda in collaboration with Gavin Whitelaw (Natal Museum).
- Co-Director, Isandlwana Archaeological Project, with Glasgow University Archaeology Research Division
- Cultural heritage management of greater Chobe Conservation area in Botswana - production of policy document for submission to World Wildlife Fund.

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Mr van Schalkwyk has completed more than 900 heritage impact assessments and specialist studies in southern Africa particularly South Africa, Botswana and Mozambique. Please refer to the eThembeni company profile for a recent selection of projects.

Mr van Schalkwyk's community liaison experience includes:

- Dube and Mkhwanase communities – cultural heritage and ancestral graves management for Richards Bay Mining
- Mbonambi and Sokhulu communities - negotiated mitigation and future practice regarding exposure of human remains by Richards Bay Minerals' mining activities on ancestral lands.
- Bhekeshowe Traditional Authority - investigated feasibility of developing King Shaka's KwaBulawayo site as a tourist destination.
- Khovokeni and Mvutshane communities at Kosi Bay - investigated feasibility of declaring Tsonga fish traps as significant cultural landscape.
- Communities affected by Paris Dam - negotiation of appropriate mitigation for exhumation and reinterment of ancestral graves.
- Mngomezulu Traditional Authority - negotiated management of Border Cave archaeological site.
- Nxamalala and Bhengu Traditional Authorities - investigated declaration of archaeological conservancy in lower uThukela River Basin.
- Mpungose Traditional Authority - negotiated extended boundaries of Ondini Historical Reserve.
- Mangwebuthanani Traditional Authority - negotiated establishment of Isandlwana Historical Reserve.

EDUCATION

1992 MA Archaeology (University of Cape Town)

1983 BA Honours Archaeology (University of Stellenbosch)

EMPLOYMENT RECORD

December 2000 to present

Partner in eThembeni Cultural Heritage, an independent organisation specialising in heritage impact assessments, ancestral grave management and integrated environmental management.

November 1996 to December 2000

Assistant Director (Research, Professional Services and Compliance) of Amafa aKwaZulu-Natali, in charge of ten professional and administrative staff, including archaeologists, anthropologists, architects and database managers.

November 1992 to October 1996

Archaeologist with the KwaZulu Monuments Council and Principal Professional Officer (Research Division) in charge of six professional and administrative staff. Responsible for Museum and Interpretive Centre co-ordination in KwaZulu-Natal.

February 1986 to October 1992

Professional Officer and officer-in-charge at Ondini Museum in Ulundi with KwaZulu Monuments Council, responsible for supervising archaeological excavations and reconstruction of King Cetshwayo's Ondini Royal Residence; management of Historical Reserve and Nguni cattle herd; development of Ondini Museum and its tourist facility and provincial site interpretation.

July 1983 to January 1986

Field Director of Early Iron Age archaeological research project in lower uThukela Valley.

December 1978 to June 1983

Ranger / Naturalist in Kruger National Park.

December 1977 to February 1978

Field Research Assistant in Hluhluwe / iMfolozi Game Reserve.

LANGUAGES	Speaking	Reading	Writing
English	Excellent	Excellent	Excellent
Afrikaans	Excellent	Excellent	Excellent
Zulu	Good	Poor	Poor

A detailed listing of publications is available on request.

Certification

I, the undersigned, certify that to the best of my knowledge and belief, these data correctly describe me, my qualifications, and my experience.

Leonard Outram van Schalkwyk

