

Archaeological Assessment of the Terrestrial Portion of the IOX Cable Route

Report prepared for

ERM Southern Africa

On behalf of

Indian Ocean Xchange SA (Pty) Ltd

October 2018

Version 2.0



ACO Associates cc
Archaeology and Heritage Specialists

Prepared by

John Gribble

ACO Associates CC

8 Jacobs Ladder

St James

7945

Phone 021 7064104

Executive Summary

ACO Associates was appointed to conduct a desk-based assessment of the archaeological potential of the terrestrial portion of the proposed IOX cable route, between the landfall on the southern edge of Fuller's Bay, about 6 km south of the mouth of the Buffalo River, and the beach manhole inside the East London Industrial Development Zone, to determine the likely impacts of the cable on archaeological sites and materials, and to propose measures to mitigate such impacts.

From the landfall the cable will run from the sea to a beach manhole inside the IDZ in a conduit that will be installed by Horizontal Directional Drilling below the beach and by trenching in the area between the beach and the beach manhole.

Due to security issues on site no archaeological site inspection or survey was carried out as part of this assessment. The results, therefore, are reflective of the archaeological potential of the cable route, based on information drawn from available archaeological literature sources.

The literature review, which draws its information from readily available documentary sources and information available on SAHRIS, found that a number of shell middens, mainly Later Stone Age in date, have been recorded along the coast to the north and south of the cable route in the past. Survey work by Derricourt (1977) identified midden material south of the cable route at Cove Rock, but more importantly behind Fuller's Bay, very close to the landfall and cable route. More recent, development-led surveys by Binneman and Webley (1996) and Anderson (2009; 2013) found a total of 15 shell middens within a radius of 2 km of the cable route alignment.

Findings: The density of recorded sites along the coast in the vicinity of the proposed cable route suggests that it is highly likely that pre-colonial shell midden material will be encountered on and/or below the surface along the cable route

The risk to such archaeological sites and material posed by the cable route arises from potential physical disturbance, damage and possible destruction of sites and materials during the excavation of the cable trench.

The following measures to mitigate potential damage to archaeological sites and materials arising out of the construction of the terrestrial portion of the IOX cable route are therefore proposed:

- At some point ahead of construction, an archaeological survey and testing of the route is commissioned to identify any sites that will be affected by the construction of the cable route. The results of this survey and testing programme can be used to inform decisions about the routing of the cable and whether further mitigation will be required;
- Alternatively, an archaeologist must be commissioned to monitor vegetation clearance and construction work. Should archaeological sites or material be encountered during construction, the archaeologist must have the authority to stop work until the find has been assessed and any sampling or excavation that is necessary to rescue the archaeological material in question has been carried out.

Of these two options, the former is preferred from both the archaeological and client risk perspectives.

Lastly, should any human remains be encountered at any stage during the construction of the cable route, work in the vicinity must cease, the remains must be left in situ but made secure and the project archaeologist and ECPHRA must be notified immediately.

Details of the Heritage Practitioner

This study has been undertaken by John Gribble BA Hons, MA (ASAPA) (CIfA) of ACO Associates CC, archaeologists and heritage consultants.

Unit D17, Prime Park, Mocke Road, Diep River, Cape Town, 7800

Email: John.Gribble@ACO-Associates.com

Phone: 021 7064104

Fax: 086 6037195

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1 Introduction

ACO Associates cc was appointed by ERM Southern Africa (ERM), on behalf of Indian Ocean Xchange SA (Pty) Ltd (IOX) to undertake an archaeological assessment of the terrestrial portion of the proposed IOX cable route, between the landfall and the beach manhole inside the East London Industrial Development Zone (IDZ).

This assessment forms part of the Environmental Impact Assessment being undertaken for IOX by ERM to obtain Environmental Authorization from the national Department of Environmental Affairs (DEA) for the project.

2 Terms of Reference

ACO Associates was appointed to conduct a desk-based assessment of the archaeological potential of the terrestrial portion of the proposed cable route, to determine the likely impacts of the cable on archaeological resources and to propose measures to mitigate such impacts.

2.1 Limitations

No archaeological site inspection or survey was carried out as part of this assessment. The results below, therefore, are reflective of the archaeological potential of the cable route, based on information drawn from available archaeological literature sources.

3 Project Description

The following project description is a summary of the information presented in the draft Scoping Report (ERM 2018).

This proposed subsea cable system will comprise a main trunk, approximately 9000 km in length between India and South Africa. The cable will split from branching units on the main trunk to landing sites in other host countries including Mauritius and Rodrigues Island.

The cable will enter South African territorial waters at approximately -33.1811S, 28.0776E and will make landfall at a site approximately 6 km south of the mouth of the Buffalo River at East London on the east coast. Landfall will be adjacent to the East London Industrial Development Zone (IDZ) on the southern edge of Fuller's Bay.

From the landfall the cable will run from the sea to a beach manhole inside the IDZ in a conduit that will be installed by Horizontal Directional Drilling below the beach and by trenching in the area between the beach and the beach manhole (**Figure 1**).



Figure 1: The IOX cable landfall, re-aligned terrestrial cable route (red line) and beach manhole (orange polygon) and surrounding area. The items marked as B&W and IDZ are archaeological sites found during previous surveys of the area which are discussed in Section 6 below

4 Relevant Legislation

4.1 National Heritage Resources Act (No 29 of 1999)

The National Heritage Resources Act (NHRA) came into force in 2000 with the establishment of the SAHRA, replacing the National Monuments Act (No. 28 of 1969 as amended) and the National Monuments Council as the national agency responsible for the management of South Africa’s cultural heritage resources.

The NHRA reflects the tripartite (national/provincial/local) nature of public administration under the South African Constitution and makes provision for the devolution of cultural heritage management to the appropriate, competent level of government. In the Eastern Cape this is the Eastern Cape Provincial Heritage Resources Agency (ECPHRA).

The NHRA gives legal definition to the range and extent of what are considered to be South Africa’s heritage resources. According to Section 2(xvi) of the Act a heritage resource is “any place or object of cultural significance”. This means that the object or place has aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance.

In terms of the definitions provided in Section 2 of the NHRA, heritage resources potentially relevant to this assessment are:

- material remains of human activity which are in a state of disuse and are in or on land [which includes land under water] and which are older than 100 years, including artefacts, human and hominid remains and artificial features; and
- any movable property of cultural significance which may be protected in terms of any provisions of the NHRA, including any archaeological artefact or palaeontological specimen (Section 2(xxix));

As per the definitions provided above, these cultural heritage resources are protected by the NHRA and a permit from SAHRA or the ECPHRA is required to destroy, damage, excavate, alter, deface or otherwise disturb any such site or material.

It is also important to be aware that in terms of Section 35(2) of the NHRA, all archaeological objects and palaeontological material is the property of the State and must, where recovered from a site, be lodged with an appropriate museum or other public institution.

4.2 National Environmental Management Act (Act No 107 of 1998)

The National Environmental Management Act (No 107 of 1998) (NEMA) provides a framework for the integration of environmental issues into the planning, design, decision-making and implementation of plans and development proposals that are likely to have a negative effect on the environment.

Regulations governing the environmental authorisation process have been promulgated in terms of NEMA and include the EIA Regulations (GNR R326/2017) and Listing Notices 1 – 3 (GNR 324, 325 and 327/2017). These regulations were amended in April 2017 by Government Notices 324, 325, 326 and 327.

The proposed IOX Cable triggers a number of activities in the Listing Notices and, in terms of GNR 325 therefore, the project will be subject to a full Scoping and Environmental Impact Assessment process and IOX will be required to obtain a positive Environmental Authorisation from the national Department of Environmental Affairs (DEA) prior to commencement of the proposed activities.

5 Method

This desk-based report draws its information from readily available documentary sources and information available on SAHRA's SAHRIS (<https://www.sahra.org.za/sahris>) and provides an assessment of the archaeological potential of the proposed terrestrial cable route shown on **Error! Reference source not found.** above, based on the known heritage resources in the vicinity.

The potential impacts on terrestrial archaeological sites and materials, arising from the proposed laying of the IOX cable, are assessed and recommendations are made to mitigate such impacts.

6 Archaeology in the Vicinity of the Cable Route

Two main sources were tapped for information about archaeological sites in the immediate vicinity of the proposed terrestrial cable route. These were formal, published archaeological books and papers, and unpublished archaeological reports and grey literature available on SAHRIS. The latter are generally reports generated for development applications as part of the environmental assessment process.

In respect of the published archaeological literature, between 1971 and 1973, Robin Derricourt directed the first systematic archaeological research programme in the former Transkei and Ciskei. The book that resulted from this work (Derricourt 1977) contains records of hundreds of sites recorded in these areas, including a number in the vicinity of the terrestrial cable route. Approximately 4.7 km south west of the cable route alignment Derricourt (1977) recorded three Later Stone Age (LSA) shell middens on the sandstone promontory adjacent to Cove Rock (Figure 2).



Figure 2: The location of Cove Rock (circled in red) in relation to the terrestrial cable route and other sites mentioned in the text below. The large purple polygon on the right of the image is the West Bank Precinct surveyed by Binneman and Webley (1996) and referred to below.

North east of the cable route on both the east and west banks of the Buffalo River, Derricourt refers to reports by Wells (1934) and Laidler (1935) of mounds found during historical quarrying activities which contained some archaeological material and numerous human skeletal remains. Together these remains, described by Wells (1934) and Laidler (1935), and their associated archaeological material suggest that these sites contain a mixture of LSA, Iron Age and possibly colonial era material and remains.

Most pertinent to this report, however, are “sealed and stratified midden lenses” reported by Derricourt (1977:113) in the dunes at Fuller’s Bay where the terrestrial cable route will make its landfall (**Figure 3**). Co-ordinates for these shell middens are not provided by Derricourt. The shell noted on these sites was principally *Perna perna* (brown mussel), but *Crassostrea margaritacea* (oyster) and *Haliotis midae* (abalone) were also present. A single damaged bone identified as sheep was recorded which suggests at least part of these middens is less than circa 2000 years old.

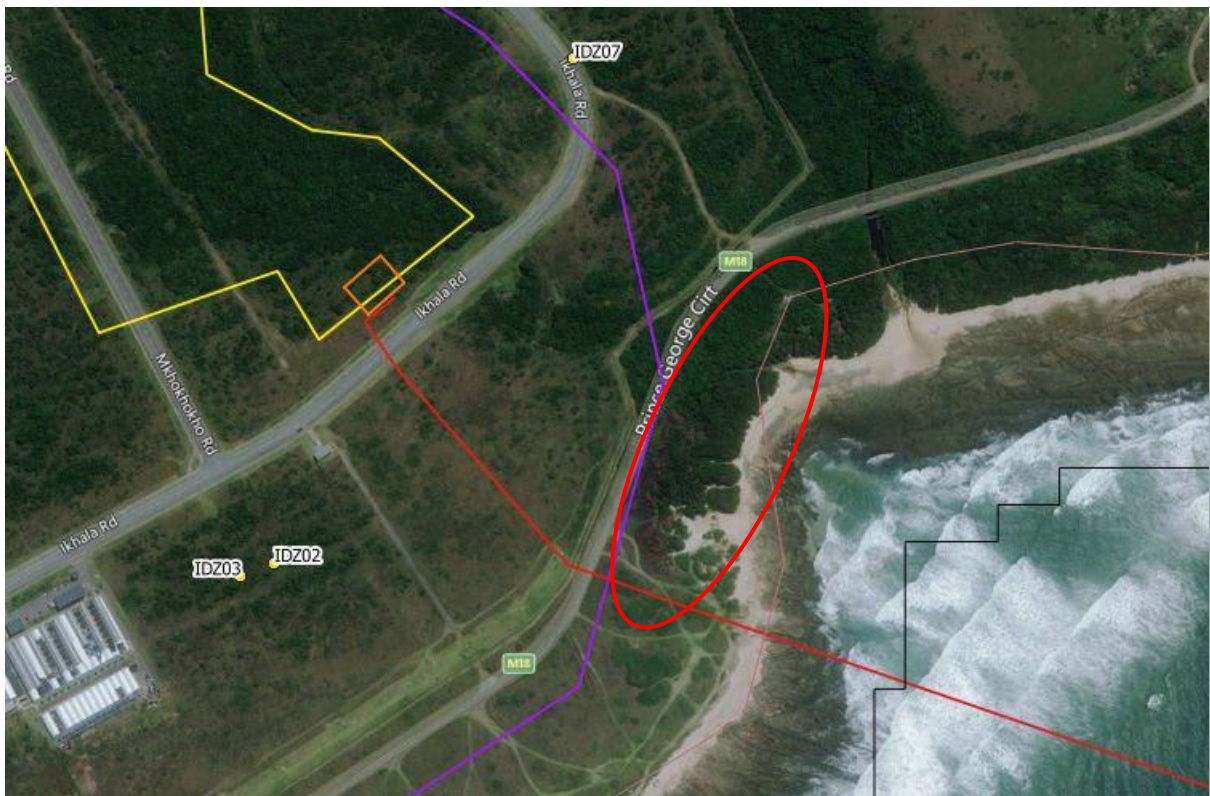


Figure 3: The dunes behind Fuller’s Bay (circled) within which Derricourt reported shell middens, shown in relation to the proposed cable landfall and terrestrial cable route. Co-ordinates for these shell middens are not provided by Derricourt.

There have been a number of archaeological field surveys associated with proposed development work carried out in the vicinity of the cable route. In 1996, Binneman and Webley surveyed what was known as the West Bank Precinct, the area now largely occupied by the East London IDZ (**Figure 2**). Dense vegetation meant that archaeological visibility on the landward side of Marine Drive was almost non-existent, but their fieldwork included a preliminary survey along the coast, during which they recorded a number of shell middens below Marine Drive. Above Marine Drive, marine shell was noted in mole hills and a

shell lens was seen in the wall of an ant bear burrow (**Figure 4**). It is likely that this midden material is LSA in date.



Figure 4: The positions of the shell middens reported by Binneman and Webley (1996) (B&W1 – B&W8), on the coast to the south west of the proposed cable route.

Northwest of the West Bank Precinct, some 7km inland from the coast, Binneman and Webley (1996) reported a large collection of Early Iron Age pottery on the farm Canasta Place. This material relates to the first occupation of the area by black agri-pastoralists and based on similar finds elsewhere in the region (Binneman 1996) dates to between AD 700 and AD 1000. According to Nogwaza (1994) this is the most southerly occurrence of early black farming in Africa. There is thus the potential for Iron Age sites and material closer to the coast, and this must be borne in mind in relation to the cable route.

In 2009, Anderson conducted a heritage study for the Marine Aquaculture Zone within the East London IDZ in an area on the landward side of Marine Drive. This area overlaps with that surveyed by Binneman and Webley in 1996 but density of the coastal bush once again meant very poor to non-existent archaeological visibility. In a number of areas of newly cleared vegetation, however, Anderson recorded seven shell middens, which he suggested probably all predate the introduction of domestic stock into the area circa 1700 years ago (Anderson 2009). Three of the sites recorded by Anderson (IDZ02, IDZ03 and IDZ07) are located between 250 m and 350 m from, and on both sides of the proposed cable route alignment (**Figure 5**).



Figure 5: LSA shell middens reported by Anderson (2009) (IDZ01 – IDZ07) during the survey for the Marine Aquaculture Zone within the East London IDZ. The yellow polygon represents Site 1 for the proposed East London IDZ Photovoltaic Facility surveyed by Anderson (2013). The IOX cable route terminates at the beach manhole (orange polygon) adjacent to the bottom edge of Site 1.

More recently, Anderson (2013) carried out a heritage survey of the proposed East London IDZ Photovoltaic facility, one of whose proposed sites (Site 1) is adjacent to the end of the IOX cable route and beach manhole within the IDZ (**Error! Reference source not found.**). According to Anderson (2013), the southern part of Site 1 was not as disturbed or densely vegetated as the northern and eastern parts. However, no shell middens or other archaeological sites were observed. The only archaeological material noted was two broken grindstones, but the report does not give the co-ordinates of these finds.

7 Impact Assessment

Based on the literature review above, it is highly likely that pre-colonial archaeological sites and material will be encountered during the construction of the terrestrial portion of the IOX cable route. The risk to such archaeological sites and material posed by the cable route arises from their physical disturbance, damage and possible destruction during the excavation of the cable trench and can be summarised as follows:

Potential impact on archaeological sites and materials	
Nature of impact	Disturbance, damage or destruction of

	archaeological sites and material
Extent of impact	Localized
Duration of impact	Permanent
Intensity of impact	Potentially high
Probability of occurrence	High
Degree to which impact can be reversed	Irreversible
Irreplaceability of resources	High – archaeological sites and material are non-renewable and cannot be replaced if damaged or destroyed
Cumulative impact prior to mitigation	Low
Significance of impact pre-mitigation	High
Degree of mitigation possible	High
Proposed mitigation	Option 1 – pre-construction archaeological survey and testing to identify any sites that will be affected by the construction of the cable route Option 2 – archaeological monitoring of vegetation clearance and construction work. Should sites or material be encountered work will be required to cease until the archaeologist has assessed the find and carried out any sampling or excavation that may be necessary to rescue the archaeological material in question.
Cumulative impact post mitigation	Low
Significance after mitigation	Low

8 Discussion, Recommendations and Proposed Mitigation

No archaeological survey of the proposed cable route has yet been undertaken but this desk-based assessment has highlighted the fact that numerous LSA shell middens have been recorded along the coast in the vicinity of the proposed cable route. The density of recorded sites suggests that it is highly likely that pre-colonial shell midden material will be encountered on and/or below the surface along the cable route.

Pre-colonial shell middens tend to accumulate within circa 300 m of the coast and are generally associated with rocky coastlines or points where shellfish can be exploited. These sites represent the physical record of pre-colonial foraging and other daily activities on the coast and contain a wealth of information about diet, technology and other aspects of the lives of our ancestors.

As with all archaeological material, these sites are extremely fragile and each is unique and must be viewed as a non-renewable resource which cannot be replaced if damaged or destroyed. Consequently, where they are proved to exist and will be affected by development activities, such sites will need to be assessed by a suitably qualified and experienced archaeologist and, where necessary, sampled to ensure the collection of a suitable record of the site before it is damaged or destroyed.

The following measures to mitigate potential damage to archaeological sites and materials arising out of the construction of the terrestrial portion of the IOX cable route are therefore proposed:

- At some point ahead of construction, an archaeological survey and testing of the route is commissioned to identify any sites that will be affected by the construction of the cable route. The results of this survey and testing programme can be used to inform decisions about routing of the cable and whether further mitigation will be required;
- Alternatively, an archaeologist must be commissioned to monitor vegetation clearance and construction work. Should archaeological sites or material be encountered during construction, the archaeologist must have the authority to stop work until the find has been assessed and any sampling or excavation that is necessary to rescue the archaeological material in question has been carried out.

Of these two options, the former is preferred from both the archaeological and client risk perspectives.

Lastly, should any human remains be encountered at any stage during the construction of the cable route, work in the vicinity must cease, the remains must be left in situ but made secure and the project archaeologist and ECPHRA must be notified immediately.

9 References

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9.1 Online Resources

South African Heritage Resources Information System (Accessed online on 26 October 2018) <http://www.sahra.org.za/sahris>

Appendix A: Specialist's CV

Name: John Gribble
Profession: Archaeologist
Date of Birth: 15 November 1965
Parent Firm: ACO Associates cc
Position in Firm: Senior Archaeologist
Years with Firm: 1
Years of experience: 28
Nationality: South African
HDI Status: n/a

Education:

1979-1983 Wynberg Boys' High School (1979-1983)
1986 BA (Archaeology), University of Cape Town
1987 BA (Hons) (Archaeology), University of Cape Town
1990 Master of Arts, (Archaeology) University of Cape Town

Employment:

- ACO Associates, Senior Archaeologist and Consultant, September 2017 – present
- South African Heritage Resources Agency, Manager: Maritime and Underwater Cultural Heritage Unit, 2014 – 2017 / Acting Manager: Archaeology, Palaeontology and Meteorites Unit, 2016-2017
- Sea Change Heritage Consultants Limited, Director, 2012 – present
- TUV SUD PMSS (Romsey, United Kingdom), Principal Consultant: Maritime Archaeology, 2011-2012
- EMU Limited (Southampton, United Kingdom), Principal Consultant: Maritime Archaeology, 2009-2011
- Wessex Archaeology (Salisbury, United Kingdom), Project Manager: Coastal and Marine , 2005-2009
- National Monuments Council / South African Heritage Resources Agency, Maritime Archaeologist, 1996-2005
- National Monuments Council, Professional Officer: Boland and West Coast, Western Cape Office, 1994-1996

Professional Qualifications and Accreditation:

- Member: Association of Southern African Professional Archaeologists (No. 043)
- Principal Investigator: Maritime and Colonial Archaeology, ASAPA CRM Section
- Field Director: Stone Age Archaeology, ASAPA CRM Section
- Member: Chartered Institute for Archaeologists (CIfA), United Kingdom
- Class III Diver (Surface Supply), Department of Labour (South Africa) / UK (HSE III)

Experience:

I have nearly 30 years of combined archaeological and heritage management experience. After completing my postgraduate studies, which were focussed on the vernacular architecture of the West Coast, and a period of freelance archaeological work in South Africa and aboard, I joined the National Monuments Council (NMC) (now the South African Heritage Resources Agency (SAHRA)) in 1994. As the Heritage Officer: the Boland I was involved in day to day historical building control and heritage resources management across the region. In 1996 I become the NMC's first full-time maritime archaeologist in which role was responsible for the management and protection of underwater cultural heritage in South Africa under the National Monuments Act, and subsequently under the National Heritage Resources Act.

In 2005 I moved to the UK to join Wessex Archaeology, one of the UK's biggest archaeological consultancies, as a project manager in its Coastal and Marine Section. In 2009 I joined Fugro EMU Limited, a marine geosurvey company based in Southampton to set up their maritime archaeological section. I then spent a year at TUV SUD PMSS, an international renewable energy consultancy based in Romsey, where I again provided maritime archaeological consultancy services to principally the offshore renewable and marine aggregate industries.

In August 2012 I set up Sea Change Heritage Consultants Limited, a maritime archaeological consultancy. Sea Change provides archaeological services to a range of UK maritime sectors, including marine aggregates and offshore renewable energy. It also actively pursues opportunities to raise public awareness and understanding of underwater cultural heritage through educational and research projects and programmes, including some projects being developed in South Africa.

Projects include specialist archaeological consultancy for more than 15 offshore renewable energy projects and more than a dozen offshore aggregate extraction licence areas.

In addition to managing numerous UK development-driven archaeological projects, I have also been involved in important strategic work which developed guidance and best practice for the offshore industry with respect to the marine historic environment. This has included the principal authorship of two historic environment guidance documents for COWRIE and the UK renewable energy sector, and the development of the archaeological elements of the first Regional Environmental Assessments for the UK marine aggregates industry. In 2013-14 I was lead author and project co-ordinator on the Impact Review for the United Kingdom

of the 2001 UNESCO Convention on the Protection of the Underwater Cultural Heritage. In 2016 I was co-author of a Historic England / Crown Estate / British Marine Aggregate Producers Association funded review of marine historic environment best practice guidance for the UK offshore aggregate industry (.

I returned to South African in mid-2014 where I was re-appointed to my earlier post at SAHRA: Manager of the Maritime and Underwater Cultural Heritage Unit. In July 2016 I was also appointed Acting Manager of SAHRA's Archaeology, Palaeontology and Meteorites Unit.

I left SAHRA in September 2017 to join ACO Associates as Senior Archaeologist and Consultant.

I have been a member of the ICOMOS International Committee for Underwater Cultural Heritage since 2000 and have served as a member of its Bureau since 2009. I am currently the secretary of the Committee.

I have been a member of the Association of Southern African Professional Archaeologists for more than twenty years and am accredited by ASAPA's CRM section. I have been a member of the UK's Chartered Institute for Archaeologists (CIfA) since 2005, and served on the committee of its Maritime Affairs Group between 2008 and 2010. Since 2010 I have been a member of the UK's Joint Nautical Archaeology Policy Committee.

I am currently a member of the Advisory Board of the George Washington University / Iziko Museums of South Africa / South African Heritage Resources Agency / Smithsonian Institution 'Southern African Slave Wrecks Project' and serve on the Heritage Western Cape Archaeology, Palaeontology and Meteorites Committee.

Books and Publications:

Gribble, J. and Scott, G., 2017, *We Die Like Brothers: The sinking of the SS Mendi*, Historic England, Swindon

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Appendix B: Declaration of Independence

I, John Gribble, 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;
- There are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- 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; and I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24(F) of the Act.



Signature of the specialist

ACO Associates cc

Name of company (if applicable):

23 November 2018

Date