

## **ARCHAEOLOGICAL IMPACT STATEMENT**

**IN REQUIREMENT OF AN ENVIRONMENTAL IMPACT ASSESSMENT IN TERMS  
OF SECTION 38 OF THE NATIONAL HERITAGE RESOURCES ACT  
IN RESPECT OF THE PROPOSED UNDERGROUND OPTIC FIBRE CABLE  
INSTALLATION, THOHOYANDOU, LIMPOPO**

For: ENVIROWORKS

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## DECLARATION OF INDEPENDENCE

I, Frans Roodt representing R&R Cultural Resource Consultants, hereby confirm my independence as a specialist archaeologist and heritage practitioner and declare that I have no business, financial, personal or other interest in any proposed activity, application or appeal in respect of this proposed project for which the client was appointed as Environmental Assessment Practitioner, other than fair remuneration for the work performed.



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## **1. BACKGROUND AND TERMS OF REFERENCE**

Vodacom is proposing the installation of an optic fibre cable in order to enhance the communication infrastructure in the Thohoyandou region. The Thohoyandou fibre ring covers a distance of 134 km of which 24 km will be laid underground. The author was appointed to conduct an archaeological and cultural heritage assessment of the underground section of the installation.

## **2. LOCATION AND TERRAIN DESCRIPTION (Figure 13)**

The underground installation starts at coordinate's S22°58'54.36" E30°27'48.66" in the urban area of Thohoyandou along the R524 road. It continues along the southern part of the road reserve to coordinates S22°57'43.30" E30°31'10.5" for approximately 6 km. The second section starts at coordinates S22°54'31.39" E30°39'13.03" along the R524 in the northern part of the road reserve for about 8 km to the junction of the R524 and R81, where it turns south towards Malamulele. On the R81 the route follows the eastern part of the road reserve to coordinates 22°58'59.79"S 30°41'25.94"E near Malamulele for a distance of 10km. The following farms will be traversed by the installation on 1:50 000 topocadastral map 2230DC; Mpapuli 278 MT, Mangundi 279 MT, Sterkstroom 277 MT, Segalo's 286 MT, Graham 276 MT and Roodhuis 285 MT, Jerome 287 MT and Bennett 282 MT.

The installation will be within the road reserve. The first section of the route along the R524 falls within a densely populated area which is severely disturbed. This section also contains other underground infrastructure such as water supply and reticulation. The second section up to the R81 passes through low intensity agricultural areas where most of the adjacent land had been ploughed at some stage while there are settlements bordering the road. The route along the R81 is equally disturbed and settlements and farming activities border on the road. The road reserve along the R524 and R81 is severely transformed and degraded by the road construction and earthworks as well as settlement activities.

## **3. METHODOLOGY**

A field reconnaissance of the route of the proposed fibre cable was undertaken by slow moving vehicle, with regular spot-checks on foot by the heritage practitioner and assistant. The SAHRIS database was consulted, but no case studies that would have an influence on this project were found. Google earth and the 1:50 000 maps (2230 DC & DD) was studied to identify possible indicators of archaeological and heritage sites.

## **4. RESULTS OF THE SURVEY (See Annexure B for a summary of terminology)**

### **4.1 Stone Age remains**

No Stone Age material was noted. In addition, the terrain is not suitable for Rock Art as there are no large loose-standing boulders or rock overhangs which could facilitate rock art.

### **4.2 Iron Age**

No Iron Age sites or material were noted.

### **4.3 Intangible Heritage**

No signs of ritual use or the presence of graves were noted along the project area.

#### 4.4 The built environment

The built environment in close proximity to the proposed installation consists of more recent and modern homesteads and businesses. No specific structure of heritage significance will be affected. No threat exists to the built environment.

It is however possible that obscured cultural remains may be discovered by chance. In such an event the heritage authority (LIHRA) or the archaeologist must be informed.

#### 5. EVALUATION AND STATEMENT OF SIGNIFICANCE in terms of Section 3(3) and Section 38 of the National Heritage Resources Act (Act 25 of 1999).

(See Annexure A for a summary of legislation)

##### 5.1 Significance criteria: Section 3(3)

Significance		Rating
1.	The importance of the cultural heritage in the community or pattern of South Africa's history (Historic and political significance)	None
2.	Possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage (Scientific significance).	None
3.	Potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage (Research/scientific significance)	None
4.	Importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects (Scientific significance)	None
5.	Importance in exhibiting particular aesthetic characteristics valued by a community or cultural group (Aesthetic significance)	None
6.	Importance in demonstrating a high degree of creative or technical achievement at a particular period (Scientific significance)	None
7.	Strong or special association with a particular community or cultural group for social, cultural or spiritual reasons (Social significance)	None
8.	Strong or special association with the life and work of a person, group or organization of importance in the history of South Africa (Historic significance)	None
9.	The significance of the site relating to the history of slavery in South Africa.	None

##### 5.2 Assessment in term of Section 38(3)

5.2.1 Section 38(3)(c) An assessment of the impact of the development on such heritage resources.

- *The development will have no effect on heritage remains.*

5.2.2 Section 38(3)(d) An evaluation of the impact of the development on heritage resources relative to the sustainable economic benefits to be derived from the development.

- *The development will have no effect on heritage remains. The sustainable economic benefits will be positive.*

5.2.3 Section 38(3)(e) The results of consultation with the communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources.

- *Social consultative process is ongoing.*

5.2.4 Section 38(3)(f) If heritage resources will be adversely affected by the proposed development the consideration of alternatives.

- *No viable alternatives exist.*

5.2.5 Section 38(3)(g) Plans for mitigation of any adverse effects during and after the completion of the proposed development.

- *No adverse effects are expected.*

## **6. SIGNIFICANCE RATING (Impact Rating Methodology)**

The significance of each identified potential impact was assessed by using the following criteria as proposed by the lead environmental consultant:

- Duration of the impact (time scale);
- Extent of the impact (spatial scale);
- Degree to which the impact may cause irreplaceable loss of resources;
- Degree to which the impact can be reversed;
- Magnitude (or Nature) of negative or positive impacts;
- Probability of the impact occurring;
- Cumulative impacts; and the
- Degree to which the impact can be mitigated.

The impact rating is tabulated in **Tables 1 – 3** below and provides the impact rating for archaeology and cultural heritage for the proposed project.

## **7. CONCLUSION**

The sections of road reserves along which the proposed underground fibre optic cables are likely to be installed have been severely modified. No traces of any heritage resources were noted. It is concluded that the proposed installation of the optic fibre cable along the indicated sections of the R524 and R81 (see Google image – figure 13) will have no negative impact on archaeological or any other heritage resources. This document serves as a statement to that effect. From a cultural heritage perspective we have no objection with regard to the proposed project.

## **8. RECOMMENDATIONS AND MANAGEMENT MEASURES**

In view of the above it is recommended that the proposed project can continue. Mitigation measures will only be required should any chance discoveries be made during the pre-construction phase or the construction phase. In such an event the heritage authority must be informed immediately.

## 9. VISUAL RECORD



Figure 1. View from FAC 28 in a westerly direction at Thohoyandou – R524.



Figure 2. View of water supply line in road reserve.



Figure 3. View showing general degradation of road reserve – westerly direction (R524).



Figure 4. View along R524 at the Mphego turn-off.





Figure 5. View along R524 near FAC 12 – easterly direction.



Figure 6. General view of road reserve along R524 – easterly direction.



Figure 7. View at the junction of Roads R524 and R81.



Figure 8. View of road reserve along R81 – north-easterly direction.



Figure 9. View of route along R81 – south-westerly direction.



Figure 10. View of a business premises on the R81.





Figure 11. View of road reserve – north-easterly direction approximately 400m from FAC 18



Figure 12. View at FAC 18 where the underground installation ends near Malamulele.

**TABLE 1: EVALUATION COMPONENTS, RANKING SCALES AND DESCRIPTIONS (CRITERIA).**

Evaluation component	Ranking scale and description (criteria)
<b>DURATION</b>	<b>1 - Immediate</b>
<b>EXTENT</b> (or spatial scale/influence of impact)	<b>0 - None</b>
<b>IRREPLACEABLE</b> loss of resources	<b>1 - Very low</b> potential for loss of irreplaceable resources.
<b>REVERSIBILITY of impact</b>	<b>0 - No impact.</b>
<b>MAGNITUDE of NEGATIVE IMPACT</b> (at the indicated spatial scale)	<b>0 - Zero:</b> Bio-physical and/or social functions and/or processes will remain <i>unaltered</i> .
<b>MAGNITUDE of POSITIVE IMPACT</b> (at the indicated spatial scale)	<b>0 - Zero (positive):</b> Social functions and/or processes will remain <i>unaltered</i> .
<b>PROBABILITY</b> (of occurrence)	<b>1 - Improbable:</b> <5% chance of the potential impact occurring.

**TABLE 2: DEFINITION OF SIGNIFICANCE RATINGS (POSITIVE AND NEGATIVE).**

Significance Points	Environmental Significance	Definition
<b>100 – 150</b>	<b>High (H)</b>	An impact of high significance which could influence a decision about whether or not to proceed with the proposed project, regardless of available mitigation options. <b>Cumulative Impact:</b> The activity is one of several similar past, present or future activities in the same geographical area, and might contribute to a very significant combined impact on the natural, cultural, and/or socio-economic resources of local, regional or national concern.
<b>40 – 99</b>	<b>Moderate (M)</b>	If left unmanaged, an impact of moderate significance could influence a decision about whether or not to proceed with a proposed project. <b>Cumulative Impact:</b> The activity is localised and might have a negligible cumulative impact.
<b>+</b>	<b>Positive impact (+)</b>	A positive impact is likely to result in a positive consequence/effect, and is likely to contribute to positive decisions about whether or not to proceed with the project.

**Table 3: Impact Assessment –Preferred layout**

PROJECT ACTIVITY	POTENTIAL ENVIRONMENTAL IMPACT	ENVIRONMENTAL SIGNIFICANCE																		MITIGATION SUMMARY
		BEFORE MITIGATION									AFTER MITIGATION									
		Duration	Extent	Irreplaceability	Reversibility	Magnitude	Probability	TOTAL (SP)	SIGNIFICANCE	CUMULATIVE	Duration	Extent	Irreplaceability	Reversibility	Magnitude	Probability	TOTAL (SP)	SIGNIFICANCE	CUMULATIVE	
Potential Impacts on Climate																				
Project activity:	Pre-construction phase																			
Preferred Alternative and Layout	Within road reserve – no change in land use	1	0	1	0	0	1	2	+	+	1	0	1	0	0	1	2	+	+	None
“No-go” alternative	“No-go” alternative Not required																			
Project activity:	Construction phase																			
Preferred Alternative and Layout	Within road reserve – no change in land use	1	0	1	0	0	1	2	+	+	1	0	1	0	0	1	2	+	+	The Heritage Authority (LIHRA) must be informed immediately should any cultural remains be discovered by chance
“No-go” alternative	“No-go” alternative Not required																			
Project activity:	Operational phase																			
Preferred Alternative and Layout	Within road reserve – no change in land use	1	0	1	0	0	1	2	+	+	1	0	1	0	0	1	2	+	+	None
“No-go” alternative	“No-go” alternative Not required																			
Project activity:	Decommissioning phase																			
Preferred Alternative and Layout	Within road reserve – no change in land use	1	0	1	0	0	1	2	+	+	1	0	1	0	0	1	2	+	+	None
“No-go” alternative	“No-go” alternative Not required																			



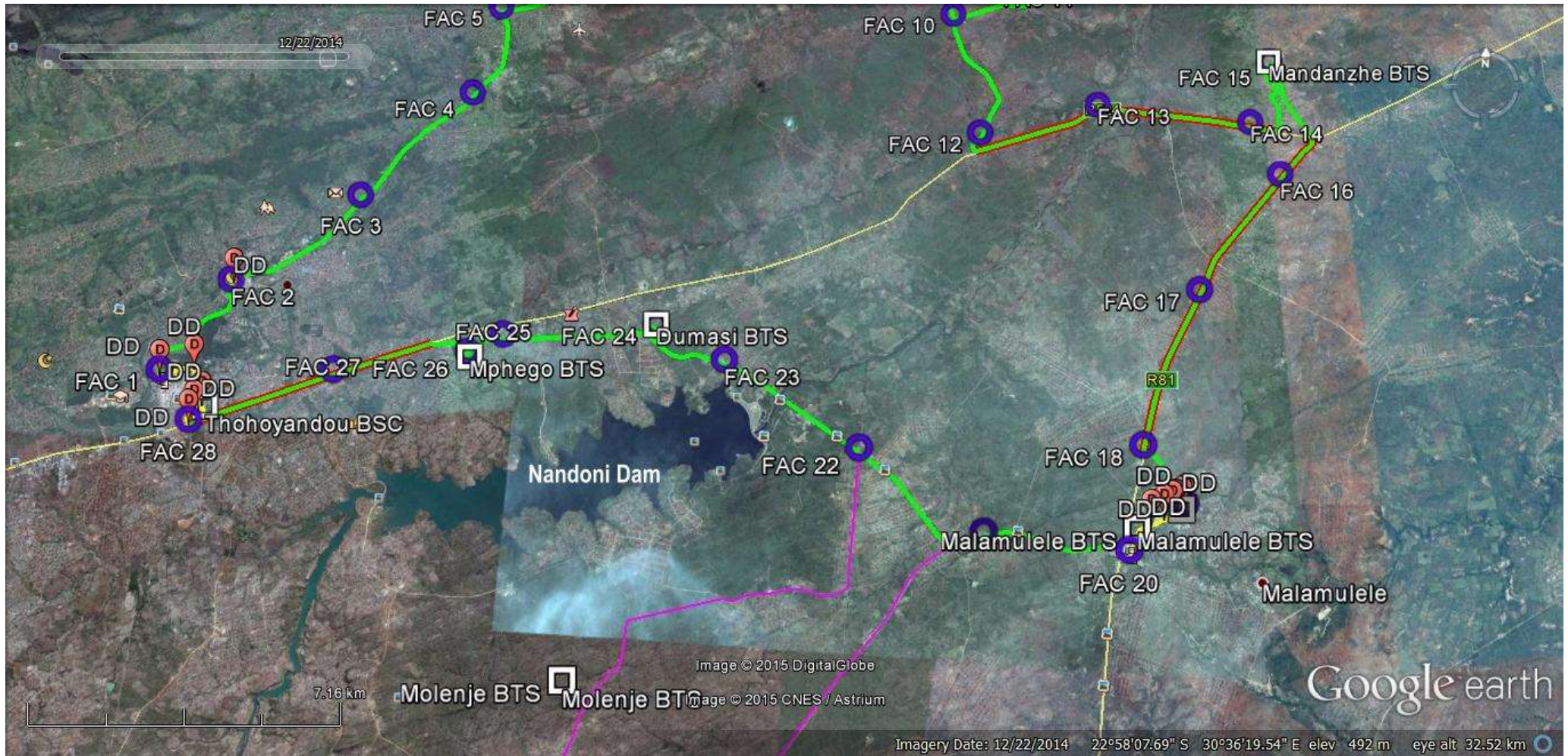


Figure 13. Google earth image with project layout. The underground installation is indicated in red.

## ANNEXURE A: RELEVANT LEGISLATION

Two sets of legislation are relevant for the protection of heritage resources and graves.

### **The National Heritage Resources Act (25 of 1999) (NHRA)**

This Act established the South African Heritage Resources Agency (SAHRA) and makes provision for the establishment of Provincial Heritage Resources Authorities (PHRA). The Act makes provision for the undertaking of heritage resources impact assessments for various categories of development as determined by Section 38. It also provides for the grading of heritage resources (Section 7) and the implementation of a three-tier level of responsibilities and functions for heritage resources to be undertaken by the State, Provincial authorities and Local authorities, depending on the grade of the Heritage resources (Section 8).

In terms of the National Heritage Resources Act (1999) the following is of relevance:

#### **Historical remains**

**Section 34(1)** No person may alter or demolish any structure or part of a structure, which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.

#### **Archaeological remains**

**Section 35(3)** Any person who discovers archaeological or palaeontological objects or material or a meteorite in the course of development or agricultural activity must immediately report the find to the responsible heritage resources authority or to the nearest local authority or museum, which must immediately notify such heritage resources authority.

**Subsection 35(4)** No person may, without a permit issued by the responsible heritage resources authority-

- (a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;
- (b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;
- (c) trade in, sell for private gain, export or attempt to export from the republic any category of archaeological or palaeontological material or object, or any meteorite; or
- (d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist with the detection or recovery of metals or archaeological material or objects, or use such equipment for the recovery of meteorites.

**Subsection 35(5)** When the responsible heritage resources authority has reasonable cause to believe that any activity or development which will destroy, damage or alter any archaeological or palaeontological site is under way, and where no application for a permit has been submitted and no heritage resources management procedures in terms of section 38 has been followed, it may-

- (a) serve on the owner or occupier of the site or on the person undertaking such development an order for the development to cease immediately for such period as is specified in the order;
- (b) carry out an investigation for the purpose of obtaining information on whether or not an archaeological or palaeontological site exists and whether mitigation is necessary;
- (c) if mitigation is deemed by the heritage resources authority to be necessary, assist the person on whom the order has been served under paragraph (a) to apply for a permit as required in subsection (4); and
- (d) recover the costs of such investigation from the owner or occupier of the land on which it is believed an archaeological or palaeontological site is located or from the person proposing to undertake the development if no application for a permit is received within two weeks of the order being served.



**Subsection 35(6)** The responsible heritage resources authority may, after consultation with the owner of the land on which an archaeological or palaeontological site or meteorite is situated; serve a notice on the owner or any other controlling authority, to prevent activities within a specified distance from such site or meteorite.

### **Burial grounds and graves**

#### **Subsection 36(3)**

- (a) No person may, without a permit issued by SAHRA or a provincial heritage resources authority-
- (c) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
- (d) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in detection or recovery of metals.

**Subsection 36(6)** Subject to the provision of any law, 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 Service 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 content of such grave or, in the absence of such person or community, make any such arrangement as it deems fit.

### **Culture Resource Management**

**Subsection 38(1)** Subject to the provisions of subsection (7), (8) and (9), any person who intends to undertake a development\* ...

must at the very earliest stages of initiating such development notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

\*‘**development**’ means any physical intervention, excavation, or action, other than those caused by natural forces, which may in the opinion of the heritage authority in any way result in a change to the nature, appearance or physical nature of a place, or influence its stability and future well-being, including-

- (a) construction, alteration, demolition, removal or change of use of a place or a structure at a place;
- (b) carry out any works on or over or under a place\*;
- (e) any change to the natural or existing condition or topography of land, and
- (f) any removal or destruction of trees, or removal of vegetation or topsoil;

\***place** means a site, area or region, a building or other structure\* ...”

\***structure** means any building, works, device or other facility made by people and which is fixed to the ground ...”

#### **The Human Tissues Act (65 of 1983)**

This Act protects graves younger than 60 years. These fall under the jurisdiction of the National Department of Health and the Provincial Health Departments. Approval for the exhumation and re-burial must be obtained from the relevant Provincial MEC as well as the relevant Local Authorities.

## ANNEXURE B: TERMINOLOGY

Early Stone Age:	The Oldowan “chopper” tools dating to between 1.7 and 2 million in southern Africa and the Acheulean hand axe industry complex dating to $\pm$ 1.4 Myr – 250 000 yrs. before present.
Middle Stone Age:	Various lithic industries in SA dating from $\pm$ 250 000 yrs. - 22 000 yrs. before present.
Late Stone Age:	The period from $\pm$ 22 000 yrs. to the contact period with either Iron Age farmers or European colonists.
Early Iron Age:	Most of the first millennium AD.
Middle Iron Age:	10 <sup>th</sup> to 13 <sup>th</sup> centuries AD.
Late Iron Age:	14 <sup>th</sup> century to colonial period. <i>The entire Iron Age represents the spread of Bantu speaking peoples.</i>
Historical:	Mainly cultural remains of western influence and settlement from AD 1652 onwards – mostly structures older than 60 years in terms of Section 34 of the NHRA.
Phase 1 assessment:	Scoping surveys to establish the presence of and to evaluate heritage resources in a given area.
Phase 2 assessment:	In depth culture resources management studies which could include major archaeological excavations, detailed site surveys and mapping / plans of sites, including historical / architectural structures and features. Alternatively, the sampling of sites by collecting material, small test pit excavations or auger sampling.
Sensitive:	Often refers to graves and burial sites although not necessarily a heritage place, as well as ideologically significant sites such as ritual / religious places. <i>Sensitive</i> may also refer to an entire landscape / area known for its significant heritage remains.