

9.11 Heritage

9.11.1 EPA Objective

The EPA objective with regards to heritage is:

- To ensure that historical and cultural associations are not adversely affected.

9.11.2 Relevant Legislation and Policy

Both State and Federal legislation applies to the protection of Indigenous heritage within the Project Area including:

- *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* (Cwlth) (ATSIPA);
- *Aboriginal Heritage Act 1972* (WA) (AHA); and
- *Native Title Act 1993* (Cwlth) (NTA).

The following policy documents are also relevant to the protection of Indigenous heritage within the Project Area:

- EPA Guidance Statement No.41. (Assessment of Aboriginal Heritage);
- Department of Aboriginal Affairs (DAA) guidelines regarding Section 18 and Risk Assessment; and
- The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance 1999 (Australia ICOMOS, 2000).

The *Aboriginal Heritage Act 1972* provides protection for all places and objects in Western Australia that are important to the Indigenous people of Australia. Proponents are required to apply for clearance from the Minister for Aboriginal Affairs under Section 18 of the Act if disturbance to an Aboriginal heritage site cannot be reasonably avoided. A report on the Aboriginal heritage surveys undertaken is also required to be submitted to the Aboriginal Cultural Material Committee (ACMC). Recent proposed amendments to the Act will clarify the way sites are assessed and recorded, provide simpler rules and increased penalties to protect registered sites, fast-track approvals when proposed activities will not impact a registered site and introduce some administrative changes.

The EPA Guidance statement provides guidance for the assessment of Aboriginal heritage as part of environmental impact assessments (EPA 2004a). This guidance considers Aboriginal heritage as a relevant environmental factor “in circumstances where the heritage values are linked directly to the physical and biological attributes of the environment, and when the protection and management of those attributes are threatened as a result of a proposed development.” The guidance indicates that the proponent should demonstrate that the relevant Aboriginal heritage issues have been identified and the proponent has considered how to minimise any adverse impact by the proposal on heritage values. The guidance provides a list of actions to be considered including undertaking an Aboriginal heritage survey.

9.11.3 Studies and Investigations

A number of heritage surveys have been conducted over the Project Area since 1976. The surveys are discussed in the following section.

9.11.3.1 Ethnographic Surveys

Liberman & WA Museum, 1976

A very comprehensive ethnographic investigation of the Yeelirrie Project Area was commissioned by Western Mining Corporation (WMC) and was conducted by the WA Museum. It involved a regional ethnographic study as well as a site survey of the proposed mine site and proposed township for the Yeelirrie project. The principal anthropologist was Liberman, who conducted the fieldwork in

late 1976 and 1977. He lived temporarily in Leonora and consulted over many months with more than 30 Aboriginal informants, making trips to Yeelirrie and adjacent areas with people who had knowledge of the landscape and sites. Liberman also consulted and visited Yeelirrie with an initiated man who had worked on Yeelirrie Station and been given information on significant sites by a more senior lawman who was a custodian for the sites (Liberman 1977a, 1977b; WA Museum 1978). The ethnographic site survey covered a wider area than the designated Project Area, and in fact extended beyond the Yeelirrie Station lease.

A number of sites 'which have some mythological significance' were identified by Aborigines and recorded (WA Museum 1978). Five of these were features said to be part of Dreaming stories, and one of these also included engravings of the Panaramittee style (WA Museum 1978). The other three were rock shelters containing hand stencils. Some of the ethnographic sites included water sources, such as pools in gorges and soaks in creeklines or gnammas (rockholes) on granite outcrops. Seven other ethno-archaeological sites were also identified and recorded, including six ceremonial stone arrangements and a site for manufacturing spears.

The recorded ethnographic sites are almost all situated in hills and breakaways to the north or the south of the Project Area. None of the sites is within the Project Development Envelope. All of the recorded ethnographic places were entered on the Register of Aboriginal Sites and have the status of Registered Aboriginal Sites.

Wanmulla Peoples Social History Project, 1997

The Wanmulla Social History project was undertaken 'to record the social, cultural and historical affiliations of Wanmulla people to the land' between the towns of Wiluna and Leonora including the Yeelirrie Project Area as described by the Wanmulla Native Title Claim (WC95/82).

The project was conducted in 1997 (de Gand & Wohlan 1998). It involved visiting some parts of the claim area and taking oral history from a number of people. It discusses the various forces that impacted the relationships of Aboriginal people to other tribes and groups as well as to land. These forces included the movement of non-Indigenous people into the Northeastern Goldfields region and the establishment and formalisation of the pastoral industry.

Some of the most important cultural sites for the Wanmulla were also identified and visited during 1997. There are descriptions in the report to the sites recorded by Liberman and the WA Museum which are located in breakaways to the north of the Yeelirrie Project and include mythological and traditional sites as well as water sources. No sites were reported which are located on the low-lying land south of the breakaways or within the Project Development Envelope.

Stevens and Central Desert Native Title Service, 2009

Ahead of planned water exploration and geotechnical work, BHP Billiton commissioned ethnographic and archaeological surveys from the Central Desert Native Title Service. These were 'work area clearance' surveys which means that only the proposed impact areas were surveyed and no information about the nature of any reported sites was disclosed. (Stevens 2009a, 2009b, 2010).

No ethnographic sites were identified or reported; that is, no sites of mythological, ceremonial, ritual or historic significance were present in the areas surveyed, which were all within the Project Development Envelope. However, archaeological materials were recorded. These are discussed in the section below.

Gleason's Assessment, 2011

Ahead of proposed exploration drilling in an area 5 km northwest of the Project Area, BHP Billiton commissioned an ethnographic and archaeological review and assessment. This work was conducted by anthropologist J. Gleason and archaeologist M. McKenzie in October 2011. From a review of previous surveys in the district, a visit to the area and long experience in the Northeastern

Goldfields, Gleason concluded that ‘there are no examples of flat and featureless landscape such as occurs throughout [the study area] being recorded with ethnographic values’ (Gleason 2011).

9.11.3.2 Archaeological Surveys

WA Museum, 1976

An archaeological study and survey was conducted by the WA Museum in conjunction with the ethnographic study and survey by Liberman described above. The methodology applied a predictive model based on the environment and landscape of the Project Area, with inspections along existing tracks and in areas considered likely to contain archaeological places. The area of coverage was smaller than for the ethnographic survey, but larger than the Project Area.

In all, 26 places with only archaeological material were identified and recorded (WA Museum 1978). Some of these also included an ethnographic component, such as the engraving site, rockshelter with a painting, stone arrangements and very large campsites. As with many of the ethnographic sites and places recorded by Liberman, all of these archaeological sites or places are situated in the hills and breakaways approximately 8 km north of the Project Area, or are in hills and breakaways to the south. They are all outside of the Project Development Envelope and will not be disturbed by the Project.

Stevens and Central Desert Native Title Service, 2011

Archaeological surveys were carried out in 2009 and 2010 within the Project Development Envelope, in conjunction with the ethnographic ‘work area clearance’ surveys mentioned above.

In all, 35 ‘areas’ with archaeological material were identified; being either surface artefact scatters or culturally modified trees. Details of these areas are not provided in the report and it is not stated if Stevens considered these ‘areas’ to be archaeological sites or just places with archaeological material. Most of the ‘areas’ consisted of culturally modified trees (scarred trees) with the remainder being collections of stone artefacts.

Ironbark Heritage and Environment, 2011

A very comprehensive archaeological survey of the Yeelirrie Project Area was conducted by Ironbark Heritage & Environment Pty Ltd (IHE) for BHP Billiton. The IHE survey areas were similar to but smaller than the Project Development Envelope. (See Figure 9-59). Nonetheless, IHE’s results provide a very useful guide to the local archaeological landscape.

The survey methodology involved archaeologists conducting a comprehensive and systematic search by walking parallel transects spaced 25 m apart to cover all of the designated survey areas. A record was made of all archaeological material observed, including isolated artefacts, noting their form, size category and position. It included the re-recording of all heritage ‘areas’ initially recorded by Stevens (see above).

A total of 166 places with occurrences of archaeological materials were identified and recorded by IHE during their surveys (Table 9-77), and were called ‘archaeological sites’. Also, 2,933 isolated artefacts were recorded. All of the 35 heritage ‘areas’ recorded by Stevens in the Main Mining Area, and Steven’s two ‘not cleared’ points, were visited and either re-recorded or dismissed by IHE and are included in these totals. One of the archaeological sites (DAA #11526 “Yeelirrie 03”) recorded in 1976 by the WA Museum near the Northern Quarry was also re-recorded.

Only 63 of these 166 places, or so-called “archaeological sites”, were considered significant or important by IHE in 2011, and were considered possible Aboriginal sites under the AHA (IHE 2013: Appendix N). Not all of them are within the Project Development Envelope (see next section). In particular, the heritage places that contained rock shelters and quarries were all situated outside the Project Development Envelope, and are north and/or east of the Northern Quarry, close to the breakaways and granite outcrops where the WA Museum recorded numerous ethnographic, archaeological and ethno-archaeological sites.

The remaining 103 'archaeological sites' were assessed to not meet the AHA criteria and were thought likely to have the status of "Stored Data"¹ (IHE 2013: Appendix N). All of these likely Stored Data places were artefact scatters with less than 70 artefacts or artefactual pieces. The lower status was clearly based on the very small size of these 103 places, with most containing less than 20 pieces (Table 9-78).

Table 9-78: Size of artefact scatters and quarries in the IHE survey areas

		Assemblage Size (number of artefacts counted or estimated)						
		<20	20-50	51-100	101-250	251-500	501-5000	>5000
Possibly as site under AHA	Artefact scatter	-	3	10	11	3	5	2
	Artefact scatter &/or quarry	-	-	-	-	-	3	-
Likely Stored Data – not a site	Artefact scatter	68	30	3	-	-	-	-
	Artefact scatter & quarry	-	-	-	-	-	-	-

Source: IHE 2013: Appendix A & Appendix B

Waru Consulting, 2015

Cameco engaged Waru Consulting to undertake a review of the previous site surveys. The objectives were:

1. to determine whether Cameco's Project Development Envelope had been fully surveyed;
2. to confirm that the surveys previously carried out were of an appropriate standard and coverage; and
3. to assess the results of those surveys, with particular emphasis on the archaeological material and sites that were recorded by IHE in 2011.

A copy of the report prepared by Waru is attached as Appendix N.

It was found that the 1976 ethnographic survey by Liberman was thorough and no further ethnographic investigation was required. Also, no ethnographic sites or places were reported during the more recent surveys by Stevens.

It was also determined that the archaeological survey of IHE had been comprehensive and detailed, and had covered most but not all of the Project Development Envelope as shown in Figure 9-65.

The remaining areas will be searched for archaeological sites prior to commencement of ground disturbance activities. Nonetheless, the survey results provide a very reliable guide to the occurrence of archaeological sites in any unsurveyed land, and indicate there is generally a very low likelihood for such sites. The main exception is for culturally modified trees (CMTs) to occur in a small portion of unsurveyed land on the northwest margin of the Project Development Envelope, where the Yeelirrie palaeodrainage line enters it.

Another finding of the review was that previous archaeological work had not taken into account the geomorphology of the Yeelirrie landscapes where archaeological material was recorded. Consequently, the adverse effects of erosion and flooding on the archaeological material was not appreciated nor factored into the assessment of that material.

1. Stored Data: A place or feature that has been assessed as not meeting Section 5 of the *Aboriginal Heritage Act 1972* by the Aboriginal Cultural Material Committee. It is not a site and need not be protected.

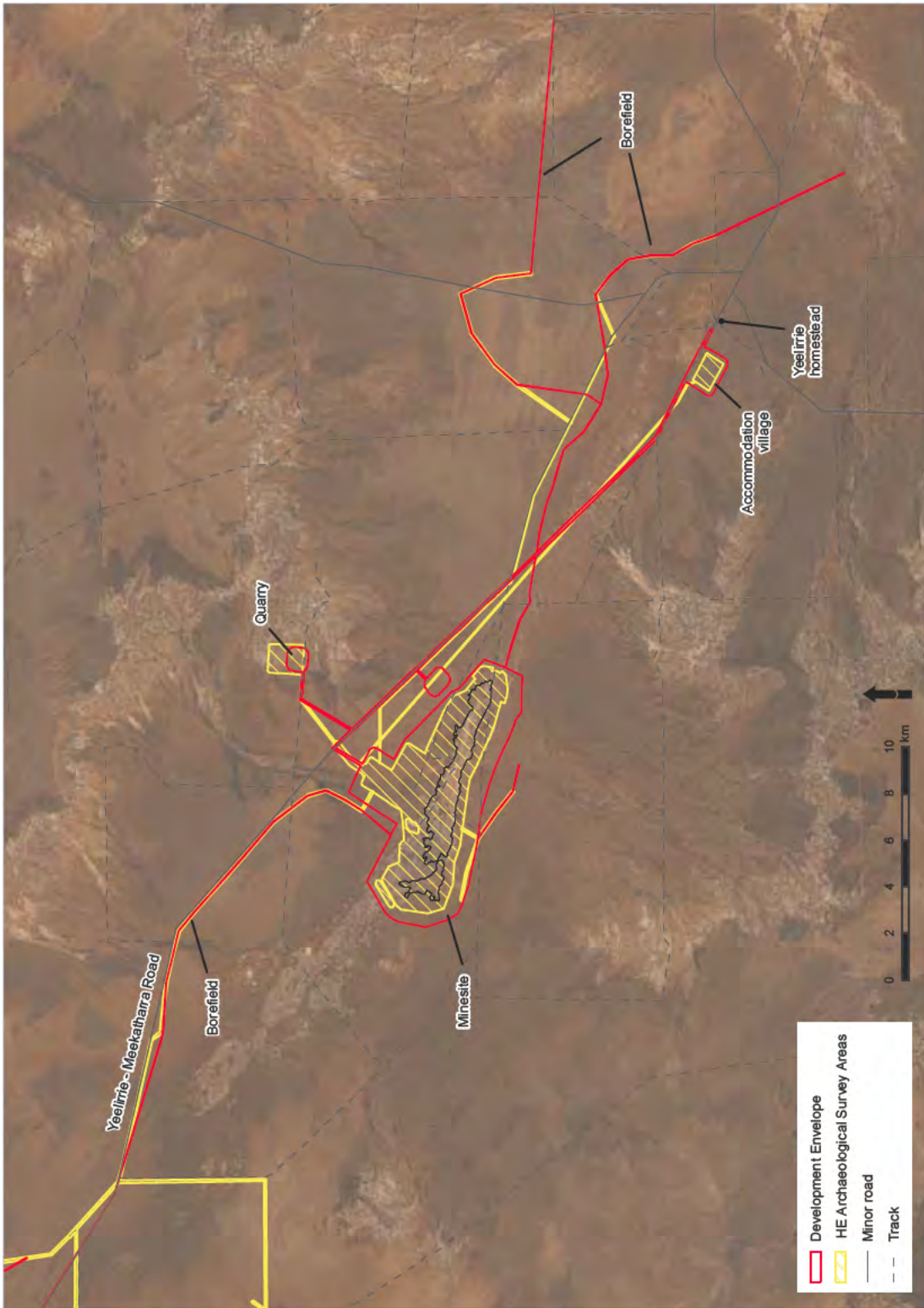


Figure 9-65: Extent of historical archaeological surveys in the Project Area

9.11.4 Existing Environment

9.11.4.1 Native Title

The Project Area occurs within one Native Title claim area. The Tjiwarl Native Title Claim was lodged in June 2011 and is currently being considered by the Federal Court. The claimants include Aboriginal people from the Leonora and Wiluna regions.

9.11.4.2 Aboriginal Heritage

The Heritage landscape of the Project Area and surrounds has been well documented (as noted above).

A number of significant ethno-archaeological sites are known to occur to the north of the Project Area. As stated above, these Registered Aboriginal Sites have mythological and/or cultural significance and some are said to be part of Dreaming stories. They have been identified and recorded consistently through each ethnographic survey conducted in the area.

These significant sites and the landscapes in which they occur will not be disturbed by the development of the Project which is located some distance to the south.

A large number of places with archaeological materials were recorded within or near the Project Development Envelope during the archaeological survey by IHE. These range from very small scatters of less than ten artefacts to larger artefact scatters with several thousand artefacts, and include culturally modified trees, rock shelters, a quarry for stone tools and artefact scatters with a quarry component. Not all of these and not all types of sites occur within the Project Development Envelope.

9.11.4.3 Heritage Places within the Development Envelope

A total of 43 heritage places were identified during IHE's archaeological survey within the Development Envelope which IHE considered likely would meet the criteria of the AHA and might be accorded the status of Registered Aboriginal Site (Table 9-79). These comprised 21 artefact scatters and 20 CMTs in the Main Mining Area, together with two artefact scatters in the Quarry area.

Table 9-79: Heritage places recorded by IHE within the Project development envelope

	Possibly a site meeting AHA criteria (in 2011)			Likely Stored Data – not a site			Totals
	Mining Area	Quarry Area	Access Roads & Corridors	Mining Area	Quarry Area	Access Roads & Corridors	
Artefact scatter	21	2	-	65	8	-	96
Artefact scatter & quarry	-	-	-	-	-	-	0
Quarry	-	-	-	-	-	-	0
Culturally modified tree (CMT)	20	-	-	-	-	-	20
Rock shelter	-	-	-	-	-	-	0
Sub-totals	41	2	0	65	8	0	
Totals	43			73			116

Source: IHE 2013: Appendix N

An assessment of the results of the IHE survey was conducted by Waru Consulting. In assessing the status of the "sites" considered by IHE likely to meet the criteria of the AHA, Waru has compared

them with other recorded sites in the Northeastern Goldfields and with the sites recorded nearby by the WA Museum. Waru has also considered recent decisions of the Aboriginal Cultural Material Committee and the Registrar of Aboriginal Sites in determining whether “sites” of the size and nature of those recorded by IHE are likely to be considered significant and therefore be classified as a Registered Aboriginal Site under the AHA. The assessment included fieldwork to inspect many of the recorded places, as well as some sites recorded by the WA Museum.

Waru concluded that most of the places judged by IHE to be “sites” are unlikely to meet the criteria of section 5 of the Act (currently being applied by the Department of Aboriginal Affairs), and would not ultimately be classified as Registered Aboriginal Sites, for the following reasons:

- Erosion had adversely affected all of the artefact scatters inspected, with runoff, sheetwash and occasional flooding clearly shaping scatters and determining the distribution of artefacts within some scatters.
- Wind erosion also has likely deflated the low sand dunes and exposed artefacts at some places.
- Some of the smaller scatters likely were created by the movement and deposition of artefacts by water, not humans, while even the larger scatters are affected by the same erosional forces.
- IHE used an unusually low artefact density to define “sites”, and so some scatters are very sparse and diffuse, and are better understood as a background scatter of isolated artefacts.
- Many similar scatters of artefacts and sites are very likely to exist in other portions of the valley floor, or palaeodrainage line, outside of the Project Area.

For these reasons, Waru concluded that of the 23 artefact scatter “sites” identified by IHE, only four could be considered to have the size, integrity and coherence required to meet the threshold of a registered heritage site. The other 19 scatters are likely Stored Data (not sites).

IHE also recorded numerous culturally modified trees across the Project Development Envelope. These trees made up 20 of the 43 recorded “sites”. A culturally modified tree (CMT) or scarred tree is one from which Aboriginal people have cut out wood and bark to make containers or shields.

The occurrence of numerous scarred trees recorded as CMTs in the Project Development Envelope is noteworthy, as is the exclusive use of Kopi Gum (*Eucalyptus gypsophila*). It likely means there was some property of this tree species that made it preferable as a source of wood for containers or shields.

There is, however, little to be gleaned from the individual trees other than measurements and a photographic record of the scars. Waru suggests the individual CMTs are likely to have little archaeological significance, particularly since most of the scar trees within the Development Envelope are dead and many CMTs will occur in the Kopi Gum Woodland that extends widely over parts of the Yeelirrie palaeodrainage line beyond the proposed mining and infrastructure areas (Gleason 2011; Mattner 2015; *pers. obs.*). Similarly, the significance apparently attributed to these heritage places by Aboriginal participants in Stevens’ surveys (Stevens 2009a: 3) will apply to any other examples, including those beyond the Project Development Envelope.

Previous consultants have discussed salvage of some of the [dead] CMTs for a small pilot study into dating them by dendrochronology (IHE 2013). However, that is not considered a practical avenue for this Project. These scars will only be relatively recent (i.e. within the last few hundred years) because of the rapid rate of destruction by termites of this species of tree. Dating will only confirm their recent age, without providing any indication of when this practice may have started, or if there were changes in the use of these trees over time.

It is considered likely that the 20 recorded CMTs will not meet a rigorous assessment under the criteria of the AHA and will not be considered to be Registered Aboriginal Sites. Instead, they likely will be assessed as Stored Data (not a site).

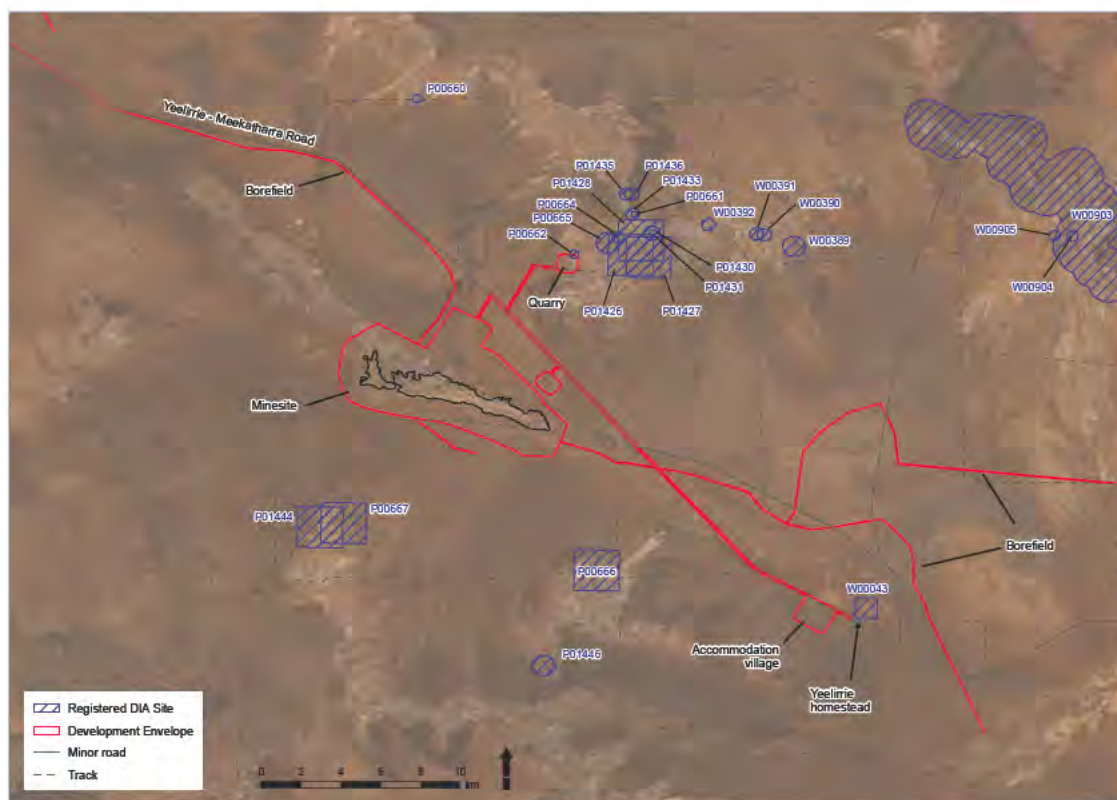


Figure 9-66: Location of registered Aboriginal sites in the Yeelirrie Project Area

9.11.5 Potential Impacts

The development of the Project will not have an impact on any Registered Aboriginal Sites (Figure 9-66).

The Project will impact a number of places where archaeological material and CMTs have been identified. Some of these places will not be able to be avoided in the development of the Project. When clearing the Project footprint, Cameco will plan and implement ground disturbing activities to avoid as many of the recorded places as possible.

9.11.6 Management

Proposed management measures are as follows:

General

- Cameco will consult with the Department of Aboriginal Affairs regarding the status and management of archaeological sites across the Development Envelope.
- Cameco will undertake consultation with members of the Tjiwarl Native Title claimants and with other Aboriginal groups with an interest in the area about the archaeological material and sites.
- Cameco will also consult with Tjiwarl elders and other Aboriginal community representatives about the proposal for a Management Area to protect ethnographic sites north and south of the Development Envelope.

Avoid and Minimise

- Investigations for archaeological sites will be carried out on land that has not previously been surveyed but which will be disturbed for the Project.

- Cameco will minimise ground disturbance and clearing activities in accordance with a Cultural Heritage Management Plan to be developed for the Project. This will include a pre-disturbance protocol to check for areas of significance.

9.11.7 Commitments

Cameco will:

- develop and implement a Cultural Aboriginal Heritage Management Plan.

9.11.8 Outcomes

Taking into account the Project design and proposed management measures to be implemented, Cameco believes that the Proposal will meet the EPA's objective with regards to Heritage.