

## **16. CULTURAL HERITAGE ENVIRONMENT: LNG AND MARINE FACILITIES**

### **16.1 Introduction**

This chapter characterises the existing cultural heritage environment of the LNG Facilities site (covering approximately 700 ha) and the marine facilities (LNG Jetty and Materials Offloading Facility).

### **16.2 Data Sources**

The cultural heritage characterisation for the proposed LNG Facilities site is based on knowledge of cultural practices and historical trends and events, oral traditions, historical records, anthropological and linguistic writings, museum holdings and other portable objects, and archaeological evidence gathered during field surveys.

The cultural heritage characterisation for the proposed marine facilities is based on a marine remote-sensing archaeological survey, involving scuba diving, underwater cameras, magnetometry and a side-scan sonar. This is the first time that formal maritime archaeological research has been conducted in the waters off mainland Papua New Guinea to inform an EIS.

The cultural heritage study that reports the results of these characterisations was conducted in accordance with the relevant PNG legislation (see Section 8.2, PNG Legislation) and the Equator Principles (EPFI, 2006). Detailed methods and findings of the cultural heritage characterisation appear in Appendix 26, Social Impact Assessment.

### **16.3 Cultural and Historical Context**

Cultural heritage (archaeological and oral tradition) sites in the Port Moresby region include sources of water, food and geological materials (clay, chert and ochre), artefacts and villages and burial places.

The main feature of the broader Boera area is its role at the centre of the *hiri* trade: Motu artisans manufactured tens of thousands of ceramic pots, which were traded over long-distances around the coast of Gulf Province. The pottery manufacturing villages along the coastline from Boera to Lea Lea date back to at least 1,200 years (with earlier sites considered likely to exist). At the centre of the ceramics industry were the ancestral villages of Davage, Ava Garau just to the north of Boera and neighbouring sites located approximately 3 km to the south of the LNG Facilities site security fence. Aemakara, an ancient village site of the Koita people, occurs approximately 700 m to the south of the LNG Facilities site security fence. Archaeological sites associated with Konekaru, an ancestral village site, begin 130 to 750 m to the north of the security fence. Figure 16.1 shows these ancestral villages outside the LNG Facilities site security fence (within which all development will be confined).



The *hiri* trade system involved Austronesian-speaking (mainly Western Motu) ceramic pot manufacturers and traders sailing annually to villages along the Gulf of Papua. Fleets of multi-hulled sailing ships, called *lagatoi* (Plate 16.1), would set off from Bootless Bay and Caution Bay to the east and west of current Port Moresby on the southeast trade winds (typically in October or November) and return with the monsoons around January. These expeditions traded ceramic pots (Plates 16.2 and 16.3) and shell artefacts for sago and canoe hulls from villages of western Gulf Province.

The origin story of the *hiri* trade tells of how the sea spirit, Edai Darava, dragged Edai Siabo from Boera into an underwater cave and taught him how to build the first *lagatoi*.

Today, the annual *Hiri Moale* festival celebrates the *hiri* trade.

The four villages closest to the LNG Facilities site comprise two main cultural groups – the Koita and the Motu<sup>1</sup> – and are categorised as follows:

- Porebada: Western Motu.
- Boera: Motu (more closely linked to Western Motu than Eastern Motu).
- Papa: Koita.
- Lea Lea: Western Motu.

Motu and Koita peoples recount their ancestors' places of origin, tell stories of routes taken to arrive at present locations, and identify previous village sites as valued cultural places. During the 19th century, at least 25 Koita and Western Motu settlements were observed between Bootless Bay and Galley Reach and inland to the Laloki River (Figure 16.2).

The Koita initially established small hamlets inland, while the Motu built houses on stilts over the sea. Over time, the Koita moved towards the coast and came to share coastal villages with the Western Motu. The initial settlements ranged from a single house to 60 houses grouped together. Both Koita and Motu villages had burial sites within the village precinct and a social structure predominantly based on *iduhu*<sup>2</sup> descent groups. Descent-group headmen shared authority with 'big-men' who achieved renown through their economic and political exploits. These chiefs supervised *iduhu* activities, such as gardening, resolving marital problems and land tenure. A 'chief' was the owner, or *tauna*, of the right front post of the ceremonial platform (*dubu*).

The Koita identify their traditional lands as running from the coastal plain of the LNG Facilities site inland to the hills. The Motu's traditional land is confined mainly to coastal pockets (see Figure 16.2).<sup>3</sup> The Motu are thought to have arrived from Austronesia,<sup>4</sup> bringing skills in seafaring,

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<sup>1</sup> The Motu are often subdivided into Western and Eastern Motu, the former containing the ethnographic villages Manumanu, Lea Lea, Porebada, Hanuabada and Pari, with three other Motu-speaking villages, Boera, Tatana and Vabukori, considered to be different from either Motu group. Eastern Motu villages were built completely in the sea, while Western Motu villages were constructed on the intertidal zone or on beaches.

<sup>2</sup> *Iduhu* is a social unit within a village. It consists of one or more lines of houses and is inhabited by people who give themselves an *iduhu* name. The basis of the *iduhu* is the patrilineage descendants of a common ancestor, plus unmarried females. Women normally join the *iduhu* of their husband, living with his group.

<sup>3</sup> Note that nothing in this chapter or in Figure 16.2 constitutes social mapping and landowner identification. This paragraph is only a broad representation of nineteenth century language groups.

<sup>4</sup> Austronesia, in historical terms, refers to the homeland of the people who speak Austronesian languages, to which Malay, Filipino, Indonesian, Maori, Malagasy, native Hawaiian, the Fijian language and around a thousand other languages belong.



**Plate 16.1**  
*Lagatoi* on Port Moresby Harbour



Photo: Biama Kanasa Collection, University of PNG

**Plate 16.2**  
 Pottery being manufactured at Porebada

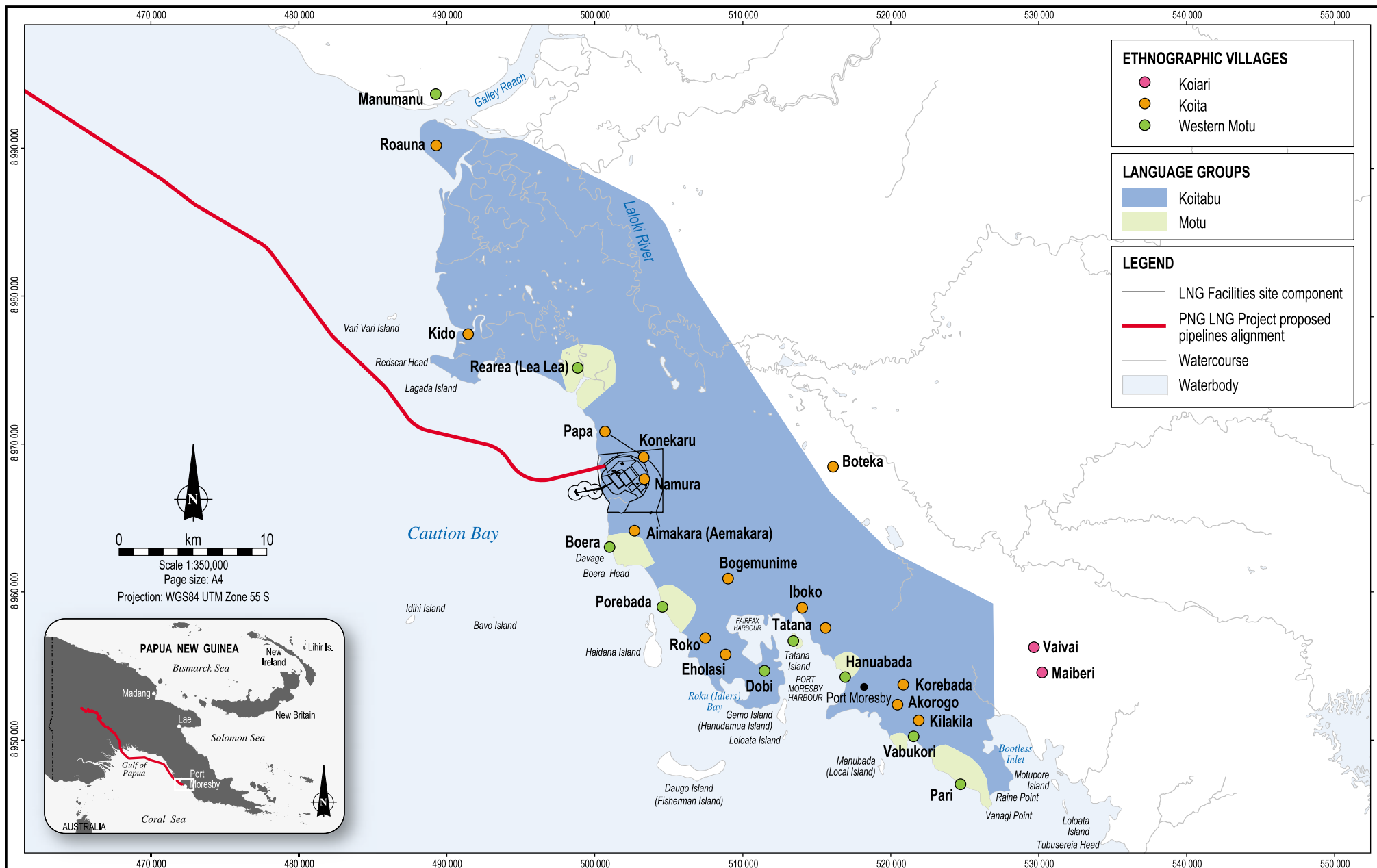


Photo: PNG National Museum and Art Gallery

**Plate 16.3**  
 Motu ceramic pot types



Photo: PNG National Museum and Art Gallery



Source: Ethnographic villages data digitised from Bulmer, 1978. Sites are indicative only.

Note: Layout is indicative only.

Final placement of all components is contingent on pending soil and geological data.

Pipelines approximate the proposed alignment based on engineering data provided up to 1 October 2008.



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19<sup>th</sup> century Koita and Western Motu settlements  
 and land extent

Figure No:

16.2

fishing and pottery to the coast. The Koita came from the Central Province and moved westward and coastward, bringing vegetables and meat. These two groups traded with each other. As well, the Motu traded fish, coconuts and Motu pottery for stone implements, feathers, garden produce and other commodities with the people of the mountains, using the Koita as middlemen.

The first large-scale European activity in the LNG Facilities site area was the agricultural development of Portion 152 as Fairfax Station. Military activity during World War II involved both artillery training and combat defence against Japanese bombing raids on Port Moresby. Aircraft wrecks and unexploded ordnance can be found today on and around the LNG Facilities site and offshore.

## 16.4 LNG Facilities Site: Cultural Heritage Sites

The cultural heritage field survey of the LNG Facilities site focused on the northern area within the proposed location of the LNG Facilities site security fence (see Figure 16.1). Sites outside the security fence known from the literature and through interviews with locals were also surveyed.

The surveys revealed the following sites located within and near the LNG Facilities site lease boundary:

- 120 indigenous archaeological sites.
- 3 traditional resource sites.
- 5 traditional story/sacred sites known from oral traditions (excluding the traditional village sites below that are also story and/or sacred sites).
- 12 traditional village sites known from oral traditions.
- 3 *lagatoi* wrecks.
- 2 early missionary sites.
- 3 World War II defence facilities.
- 11 World War II aircraft crash sites.
- 1 World War II shipwreck.
- 2 other colonial period infrastructure sites.

Seventy-eight indigenous archaeological sites and one oral tradition site (Konekaru) are located within (63 sites) or near the security fence:

- 20 small sites comprised of isolated or small sets of four or less unstratified cultural items, lying on the ground surface.
- 11 small stratified sites.
- 12 medium-sized sites.
- 19 large sites.
- 16 very large sites.

Unexploded ordnance within the lease boundary curtailed the spatial coverage of the survey work to date, but an extrapolation from the surveyed area suggests that the entire area inside the security fence would contain approximately 364 archaeological sites. Notwithstanding the large number of sites, the security fence is in fact located in a zone *between* the most important cultural heritage (including oral tradition) sites: Konekaru is to the northwest of the security fence (but within the exclusion fence); Aemakara is to the south; and Davage is to the southwest. Interviews in the four villages of Porebada, Boera, Papa and Lea Lea did not uncover any important oral

tradition sites within the security fence. Further discussion about the sites identified is provided below.

#### **16.4.1 Ethnographically Known Villages**

None of the old village sites identified during the cultural heritage study were located within the LNG Facilities site security fence. However, the old village site of Konekaru is intersected by the site lease boundary in an area not proposed for works.

The ethnographically documented villages closest to the LNG Facilities site are Dirora (also known as Namura), Aemakara and Konekaru, and there are a number of others further afield. Aemakara, located 2 km from the southeastern corner of the security fence, is an ancestral Koita village that was identified during interviews at Papa. Evidence suggests that the Namura tribe relocated from here around the mid-1750s and that some family members moved with the Isu tribe to establish Aemakara village inland of Boera.

The ancient Motu village of Konekaru is situated in the northwestern corner of the site lease boundary, and was occupied at the time of initial European contact. In the oral tradition, Konekaru formed a gateway to the coast for the Koita and enabled the Koita and Motu to co-ordinate fishing and sailing. The exact location of the Koita village of Namura is unknown, but is believed to be in woodland between Boera and Lea Lea, a short distance from the coast. The original name of Namura village was Dirora, and records suggest it was the biggest of all the villages known in Koita history. Dirora remains important to the Koita, Boera and Lea Lea villagers in particular, and lies approximately 6 km northeast of Boera (and approximately 2 to 3 km outside the LNG Facilities site security fence).

Other old village sites, known from oral traditions and historical records, recorded in close proximity to the LNG Facilities site (Figure 16.3) include:

- A historical village and cultural complex at Buria Hill, near Lea Lea, some 10 km to the northwest of the site.
- The traditional ancient village of Darebo located 11 km northwest of the LNG Facilities site.
- Dori Hill located 8.5 km to the northwest of the site.

#### **16.4.2 Burial Sites**

There was no evidence of human burials or cemeteries in or around the LNG Facilities site. However, it was broadly the custom to bury the dead under houses. Therefore, the likelihood of human remains at the Konekaru village site within the lease boundary (but outside the security fence) is high<sup>5</sup>, as is the likelihood of burials at other large sites recorded during the field surveys but not identified during interviews (e.g., Apau Village). This, in turn, means that earthworks within the security fence could uncover human remains when the LNG Facilities are being built (see Chapter 22, Project-wide Cultural Heritage Impacts and Mitigation Measures, for discussion of cultural heritage impact mitigation).

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<sup>5</sup> This is based on previous research where every archaeologically excavated village site whose cultural heritage materials have been reported in the Port Moresby region has revealed human remains (Appendix 26, Social Impact Assessment).





### 16.4.3 Sacred Sites and Traditional Story Sites

Four traditional sites from the story of the ancestral hero Edai Siabo and his first *lagatoi* were identified outside the LNG onshore and marine facilities areas, two on land and two in shallow water (see Section 16.5, Marine Facilities Site: Cultural Heritage Sites).

It is believed that the first *lagatoi* was built at one of these traditional sites, known locally as Davage, which is situated in the first small bay to the north of Boera Head, some 3.6 km south of the LNG Facilities site (see Figure 16.3). The site is marked by a modern timber platform under a shade tree and is currently being used to build a dugout canoe (Plate 16.4 and Plate 16.5).

At the second site (outside the LNG Facilities site) between Boera and the Vaihua River, a fisherman from Boera village says that stone flakes from the axes that carved the first canoe south of Vaihua River can be seen during the dry season. The story tells of trees being felled and the trunks roughly shaped here before the canoe was transported through the mangroves to a village near Davage, where Edai Siabo lived.

Some of the villages known through oral tradition are sacred sites that host ancestral spirits, such as Buria and Apau (see Figure 16.3). Apau predates the current village of Boera, and is located to the north of Boera Head, some 3.8 km to the south of the LNG Facilities site. Wooden posts and ceramics marking the site of the old Apau stilt village were reported to be evident during the dry season.

### 16.4.4 Archaeological Sites

#### 16.4.4.1 Indigenous Archaeological Sites

Seventy-seven indigenous archaeological sites were recorded in and around the LNG Facilities site:

- Scatters of pottery, stone artefacts and midden shell: 22 sites.
- Scatters of pottery, stone artefacts, midden shell and animal bones: 2 sites.
- Scatters of pottery and stone artefacts: 8 sites.
- Scatters of pottery and midden shell: 11 sites.
- Scatters of pottery: 5 sites.
- Scatters of stone artefacts and midden shell: 3 sites.
- Scatters of stone artefact: 7 sites.
- Scatters of midden shell: 7 sites.
- Isolated stone artefacts exposed on the ground surface: 2 sites.
- Isolated pottery shards exposed on the ground surface: 2 sites.
- Isolated shells exposed on the ground surface: 8 sites.

The most extensive archaeological site type within the LNG Facility site security fence contained pottery, stone artefacts and shell midden material. This site type is concentrated along a north–south strip of land, between the eastern shoreline of the saltflats that is the southern arm of the tidal inlet and the North Vaihua River (locally known as Ruisasi Creek). Generally, the larger sites are located closer to the coast and correspond to the patterns of coastal settlement. The largest of these sites is in the vicinity of the historical village of Konekaru.



**Plate 16.4**  
Stream outlet at Davage,  
where Edai Siabo's first *lagatoi* was built



**Plate 16.5**  
Dugout canoe under construction at Davage



**Plate 16.6**  
Memorial commemorating Reverend Lawes  
and the first church, Boera

#### **16.4.4.2 Non-indigenous Archaeological Sites**

A memorial commemorates the landing of Reverend William Lawes<sup>6</sup> at Boera, where the first church in this area was subsequently built (Plate 16.6). The London Missionary Society built churches in Boera, Papa and Lea Lea and has played a large role in village life.

A large tree planted by the first missionary on the banks of Lea Lea Creek inside Lea Lea village is considered locally important for its associations with the London Missionary Society.

Coastal batteries were established during Word War II at and around Port Moresby, including at Paga Point, Gemo Island, Idlers Bay and Boera. The Boera battery was constructed by the 8<sup>th</sup> Army Troops Company, Royal Australian Engineers, in July 1943 (Plate 16.7) and is one of two Word War II defence sites recorded during the field surveys (Plate 16.8). The range-finding station, gun pits, magazines, ammunition cupboards and the rear sections of the cast iron gun carriages are still intact.

The gun pits were placed to defend the northern and western entrances to Caution Bay and to repel any land attack. The 155 mm field guns had a range of up to 14 km away and up to 40 rounds were fired during artillery practice sessions. There was also an anti-aircraft gun emplacement at the rear (eastern side) of the battery. Unexploded ordnances are therefore to be expected within a 14-km radius of the battery (but excluding the general direction of Boera village some 500 m to the south) and Boera villagers continue to retrieve projectiles in the broader area (Plate 16.9).

The second World War II defence site recorded during the field surveys is the fuel dump north of Lea Lea village. A telephone cable and 'fuel hideout' (fuel dump) were reported to the northwest of the village and are thought to be associated with the telegraph line shown on a 1944 military engineer's map.

Unexploded ordnances have been found at the LNG Facility site (Plate 16.10). Specialist contractors and the PNG military are removing these so that detailed site investigations (including archaeological clearance surveys) and construction can be completed.

### **16.5 Marine Facilities Site: Cultural Heritage Sites**

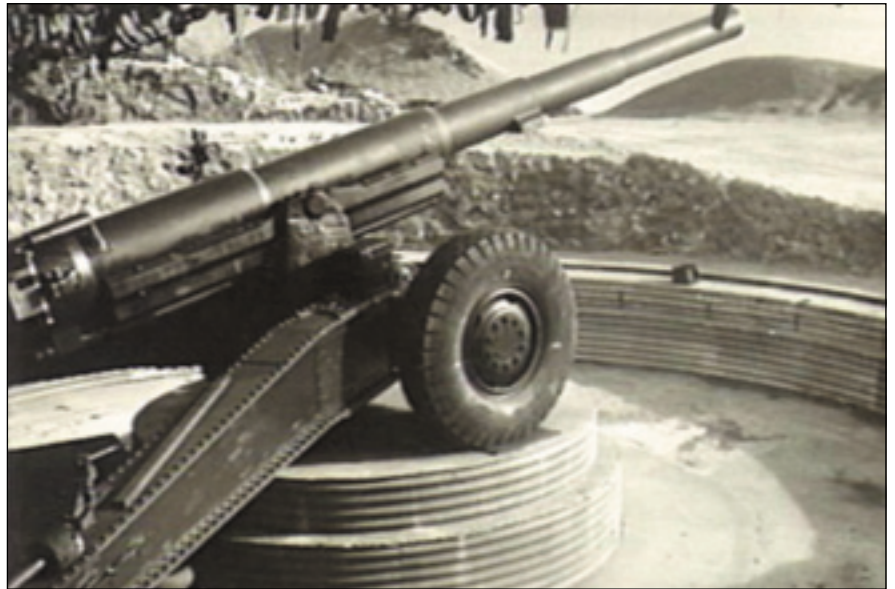
Eight types of sites occur or are likely to occur offshore within or near the marine facilities site, many of these underwater:

- Shipwrecks (including exploration period ships, coastal traders and defence vessels).
- Plane wrecks (some of which may be war graves).

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<sup>6</sup> Reverend William George Lawes transferred to Papua New Guinea in 1874 until his retirement in 1906. Lawes was a pioneer missionary photographer, and the first permanent non-indigenous resident of Papua New Guinea. He created the first photographic images of the islands and its peoples as well as images of missionary work, which were distributed commercially through Henry King of Sydney. Lawes' knowledge of, and role in, Papuan life was also of paramount importance to other photographers, particularly those of colonial government and expeditionary parties.





**Plate 16.7**  
1944 Boera battery: number 1 gun

Photo: photograph courtesy of Australian War Memorial web site #072247



**Plate 16.8**  
2008 Boera battery:  
gun pit number 2



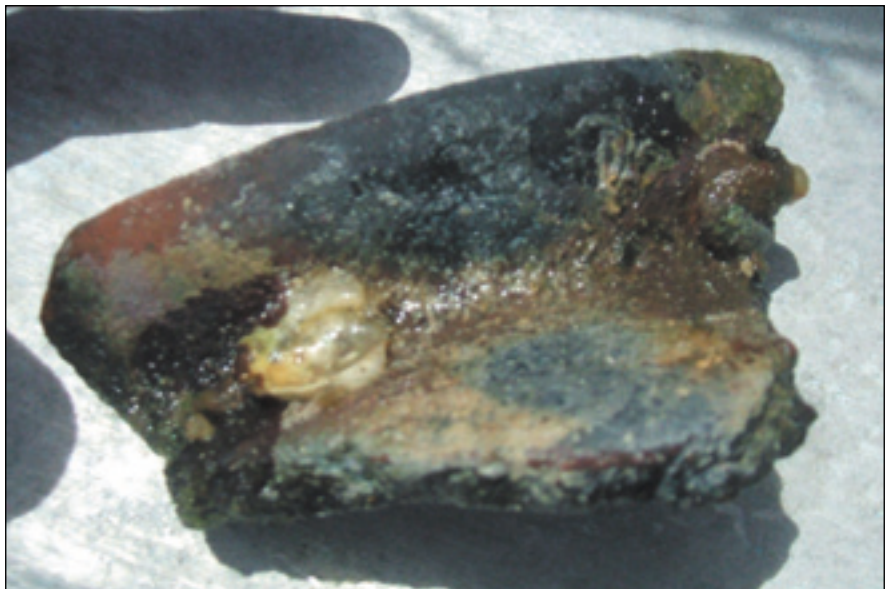
**Plate 16.9**  
World War II artillery projectiles  
held at Boera village

Photo: Taylan, 2003





**Plate 16.10**  
 Artillery projectile head discovered in the  
 LNG Facilities site area. Armour piercing head  
 and fuse was intact, indicating the projectile was live



**Plate 16.11**  
 Pottery rim from the north side of the  
 intertidal zone at Konekaru Beach



**Plate 16.12**  
 Stone core artefact from the intertidal  
 zone at Konekaru Beach

- Former defence facilities (e.g., landing pontoons/wharves and/or associated pipe bridges over swamp or mangrove areas; battery sites; airstrips).
- Possible wharves/jetties associated with the London Missionary Society or Fairfax Station.
- Underwater telegraph cables.
- Unexploded ordnances (e.g., artillery shells, submarine mines, bombs).
- Lighthouses and beacons.
- Anchors and anchorages.

No cultural heritage sites were found during the survey of the shallow marine environment extending out approximately 2 km offshore from the proposed Caution Bay Landfall site and over the northern section of the proposed LNG Jetty. Since the 2008 marine survey, the marine facilities design and location has been refined for engineering, environmental and social reasons and infill survey and mitigation measures will be required if necessary (see Chapter 22, Project-wide Cultural Heritage Impacts and Mitigation Measures).

Caution Bay generally is home to *lagatoi* wrecks, submerged village sites and their associated relics, and to spiritual or story places, while the mangroves of Konekaru Beach have revealed pottery and stone artefacts. Eight types of European-contact period sites also do or might occur within Caution Bay: ship and aircraft wrecks (possibly war graves), former defence facilities (such as landing pontoons, wharves or associated pipe bridges), underwater telegraph cables, and unexploded ordnance.

### 16.5.1 Submerged Stilt Villages

No stilt village sites have been reported from the shallow marine environment of the LNG Facilities site. However, the preference of the Koita and Motu for stilt villages over shallow water or beach means that remains of old village sites, their associated relics, or canoe wrecks may be encountered during construction.

At spring low tide, an inspection from the intertidal zone to seaward of the current stilt houses at Boera revealed an extremely dense deposit of compacted pottery shards along the entire Boera village coastline up to 50 m beyond today's houses. Pottery manufacture has largely ceased at Boera and so these remains may reflect a time when the village extended further out across the water.

At Konekaru Beach, dense clusters of pottery, shell middens and other historic artefacts onshore and in the nearby shallow marine environment support the oral accounts of a historic former village site. A light concentration of scattered pottery was found around the edges of the mangroves lining Konekaru Beach, particularly on the northern side (Plate 16.11); and stone artefacts are also present (Plate 16.12). The archaeological material was concentrated predominantly on the northern seaward edge of the mangroves, lining the beach up to 150 m offshore and as far as 80 m to the north and 150 m to the south.

It is probable that other sites along the foreshore may now be buried under prograding shorelines where sediments scoured from other areas have now been deposited. Villagers reported the

coastline to be highly mobile, which may cause archaeological sites in some areas along the coast to be periodically covered and uncovered, masking small, low-concentration scatters.

### 16.5.2 Traditional Story Sites

Two traditional *lagatoi* sites are located within the shallow marine environment of Caution Bay (see Figure 16.3):

- The site, where Edai Siabo was taught to build the first *lagatoi*, is located approximately 50 m to the southeast of Idihi (Hidiha) Island.
- The location where the Edai Siabo brought first *lagatoi* came ashore and threw over its stone anchor (Plate 16.13). The sacred anchor can be seen there today – light-grey, circular and approximately 20 cm thick and 60 cm in diameter (Plate 16.14).

### 16.5.3 Lagatoi Wrecks

There are three reports of possible *lagatoi* wrecks in Caution Bay:

- A stone anchor approximately 3 km north of Lea Lea village. The anchor from the wreck was found and dragged ashore onto the beach.
- A wreck site reported by fishermen, where a *lagatoi* is believed to have sunk on a voyage from Koiruru to Kido Point in either the late 1800s or early 1900s with a cargo of sago and pots.
- A wreck site also reported by villages thought to be located to the southwest of Papa.

The wreck sites have not been confirmed but Boera's role in the *hiri* trade makes it likely that there are *lagatoi* wrecks in Caution Bay. However, marine borers make it unlikely that the timbers from wrecked vessels have survived intact unless buried and so remains above the seabed would be limited to remnants of pots, ceramic shards or stone anchors.

### 16.5.4 World War II Sites

#### 16.5.4.1 Aircraft Wrecks

Many aircraft crashed around Papua New Guinea during World War II, either shot down in aerial combat, through accidental collisions with other aircraft or strafing targets, by becoming lost in bad weather, or running out of fuel. Some aircraft crash sites were salvaged and bodies collected but most of the planes, which crashed into the sea or were reported as 'missing in action', were never located and could have the status of war graves

A number of military aircraft are known to have crashed in Caution Bay between Boera, Redscar Head and Idihi (Hidiha) Island in the west. Scattered remains from one such wreck, a World War II plane crash, including the fuselage and other metal parts are believed to be located in Caution Bay (conflicting stories have the site in four, relatively close locations); however, much of the wreck has been scavenged by locals for scrap metal.

Ten plane wreck sites are known to exist in the vicinity of the LNG marine facilities, although none are located within the marine facilities area. Seven of these planes crashed in the sea or



**Plate 16.13**  
Location of the first *lagatoi* landing and stone anchor site, Boera (marked by arrow)



**Plate 16.14**  
First *lagatoi* landing and stone anchor site, showing stone anchor at low tide near Boera village



**Plate 16.15**  
Instrument panel and aluminium skin from Japanese Zero fighter at Lea Lea



mangroves or are missing and believed to have crashed in or close to the sea. A number of these plane crashes involved the death of pilots or other personnel and may therefore be war graves.

Two plane crash sites were recorded from the shallow marine environment during the field surveys. The first is the crash of a Japanese Mitsubishi Zero fighter (see Figure 16.3). Lea Lea villagers reported that a single-engine Japanese aircraft had crashed on the mud bank at the southern extremity of Lea Lea village (south of Lea Lea Inlet). The pilot apparently escaped the wreckage. A family living close to the wreck site scavenged parts of a wing strut and instrument panel from the wreck. An instrument panel and the outer 'skin' from the plane are shown in Plate 16.15.

The second crash site, approximately 300 m east of Idihi (Hidiha) Island, is the wreck of a North American B-25C Mitchell medium bomber. The plane lies in less than half a metre of water at low tide and is spread over an area of 30 by 200 m. A section of the main fuselage lies intact on the shallow reef; remains of the cockpit flying controls, an aluminium radial engine and other sections are evident in the water.

The side-scan sonar survey of the marine facilities area recorded several anomalies. However, none resembled the signatures expected for aircraft wrecks or shipwrecks. These anomalies were investigated further using a drop camera, and no cultural heritage material was located.

Seven other aircraft crash sites were reported during oral histories, but their actual locations have not been positively identified.

#### **16.5.4.2 Pipe Bridge**

The remains of an Allied army pipe bridge in the mangroves between Boera and Papa (near the Vaihua River) was reported by villagers. This bridge was used to transport ordnance through the mangroves. Several .303 rifle and 50-mm shells were found in the shallow marine environment on the edge of Konekaru Beach.

#### **16.5.5 Telegraph Cable**

In 1943, a telegraph cable was laid from Cape York, Australia to Boera Head for the Signals Section (New Guinea Force) and the Post Master General's Department, to complete a link to Port Moresby. This cable was probably laid to support the wartime communications network along the Papua New Guinea coast. From photos available (Plate 16.16), it appears that the cable was placed ashore in the vicinity of Apau Beach, just north of Boera Point, directly to the west of the Boera battery. The cable's location is of historical archaeological interest for its association with Papua New Guinea and Australian World War II defences and as the first telegraph link between the two countries. The cable is not shown on any charts of the area, and no further information is known.

**Plate 16.16**  
October 1943 Boera Point, New Guinea:  
drums with the marine telegraph cable  
attached being towed to shore



Photo: photograph courtesy of Australian War Memorial web site #057336, 1943-10-01

## 16.6 Implications for Project Planning, Design and Management

As is the case with the upstream project area, the large number of cultural sites reflects the intimate relationship that people living a mainly subsistence life in dispersed rural settlements have with the landscape and environment. As well, there are in the LNG Facilities site the particular artefacts of the *hiri* trade and of post-European contact.

The most important ancestral village sites to the north and south of the LNG Facilities site do not appear to be directly at risk from the project but the nature of the archaeology of this area generally means that not only other known but also as-yet undiscovered sites will fall within the project footprint. Linear infrastructure, such as a pipeline, offers some route alignment flexibility, but the layout of an LNG plant within a broadly suitable site is largely determined by the functional arrangement of its components and, especially, by safety and environmental setbacks. It is fortuitous that the site has been able to avoid the more important cultural sites. Other sites that cannot be avoided will need to be the subject of a systematic mitigation program of identification and reporting, documentation and salvage according to statutory requirements and the procedures set out in Table 22.1 in Section 22.2.3, Site Specific Mitigation and Management Measures. The management of these sites (and sites not directly affected) will be undertaken in consultation with the landowners.

Environmental Impact Assessment  
PNG LNG Project